

Spectral Analysis of the Cool and Warm Perseus data

1 Gain Calibration - $z_{opt} = 0.179$ for Perseus

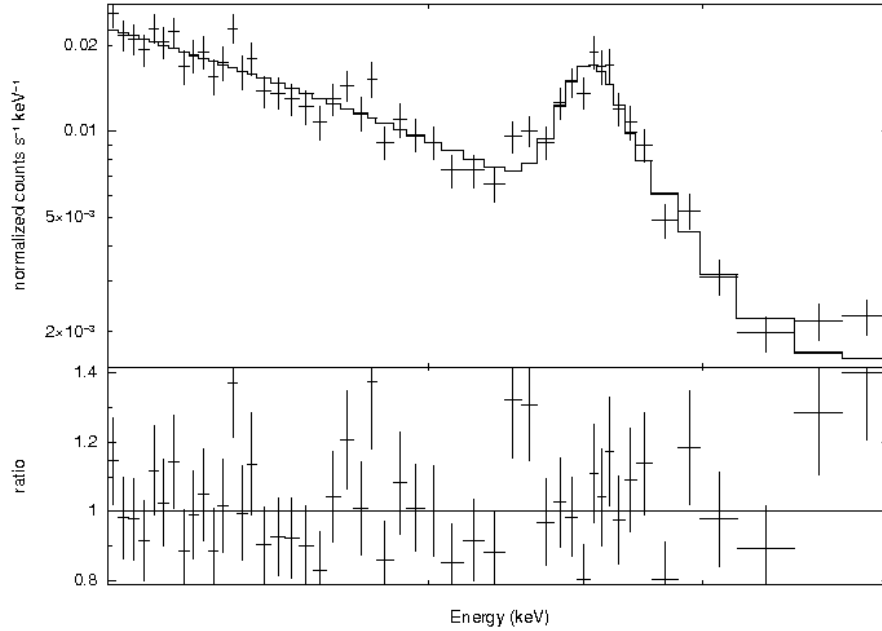


Figure 1: Spectral analysis of cool portion of the Perseus observation in the 5.0-8.0 keV energy band. The best-fit redshift and 1σ and 90% uncertainties are $z=0.0164$, (0.0142-0.0173) and (0.0116-0.0179). This gives $\Delta z = 0.15\%$, $\Delta z_{1\sigma} = 0.06\%$, and $\Delta z_{90\%} = 0.0\%$

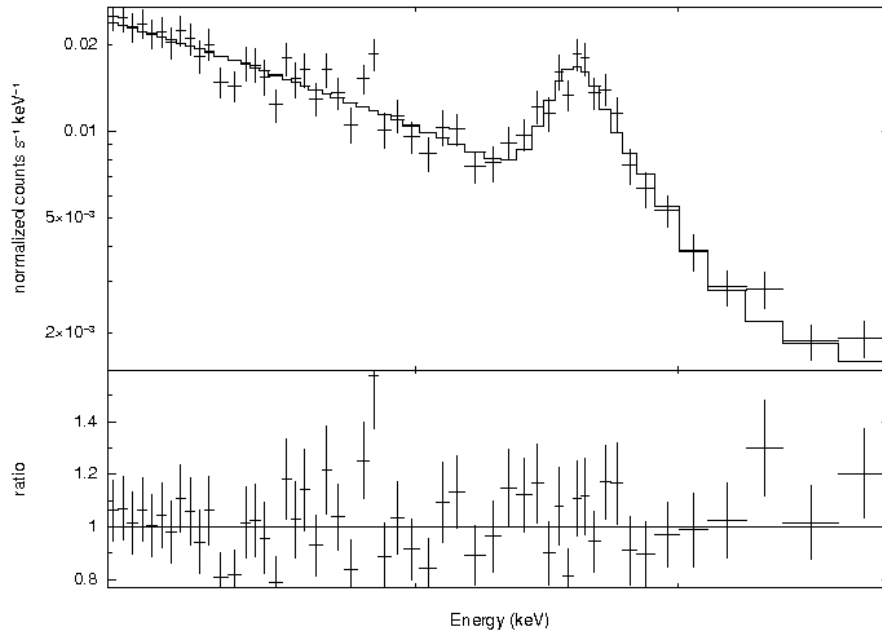


Figure 2: Spectral analysis of warm portion of the Perseus observation in the 5.0-8.0 keV energy band. The best-fit redshift and 1σ and 90% uncertainties are $z=0.0132$, (0.0096-0.0152) and (0.0092-0.0167). This gives $\Delta z = 0.47\%$, $\Delta z_{1\sigma} = 0.27\%$, and $\Delta z_{90\%} = 0.12\%$

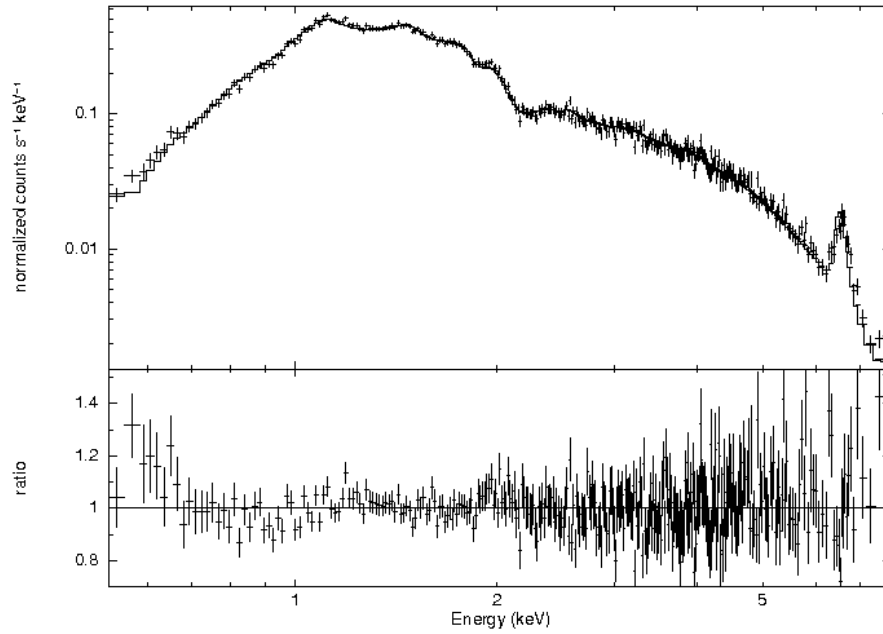


Figure 3: ACIS-I spectrum of the cool portion of the Perseus observation along with the best-fit $\text{phabs}^*\text{apec}$ model.

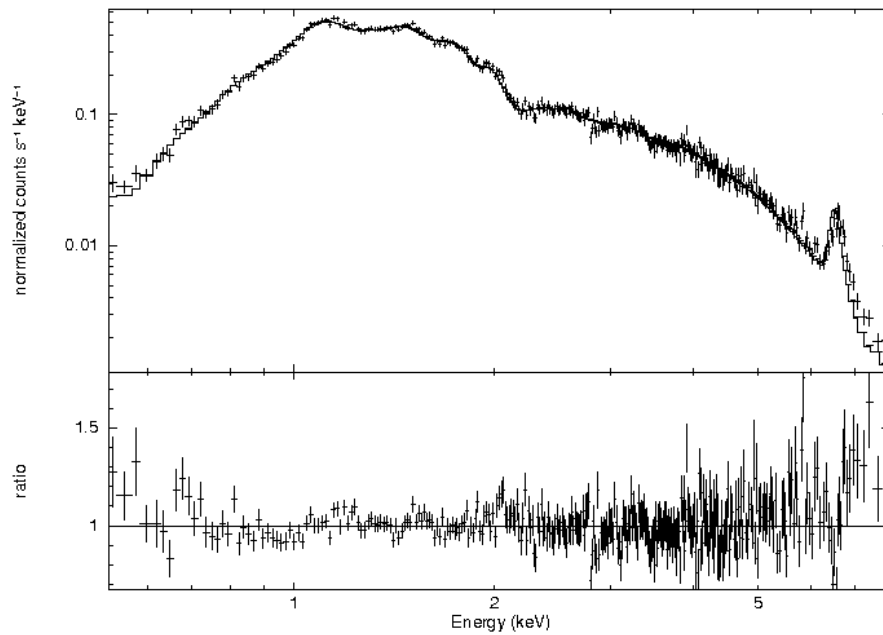


Figure 4: ACIS-I spectrum of the warm portion of the Perseus observation along with the best-fit $\text{phabs}^*\text{apec}$ model.

Table 1: Spectral Analysis Results (0.5-7.0 keV) - tcticorr

Detector Temp	N_H 10^{22} cm^2	kT (keV)
Cool	0.218 (0.213-0.223)(0.210-0.227)	3.74 (3.69-3.79)(3.66-3.82)
Warm	0.237 (0.232-0.242)(0.228-0.246)	3.65 (3.57-3.73)(3.57-3.73)

Notes: Best-fit N_H and kT (along with their 1σ and 90% uncertainties) obtained by fitting an absorbed thermal model (phabs*apec) to the Perseus spectra.

Table 2: Spectral Analysis Results (0.5-7.0 keV) - ape

Detector Temp	N_H 10^{22} cm^2	kT (keV)
Cool	0.200 (0.196-0.206)(0.192-0.208)	3.68 (3.64-3.73)(3.61-3.76)
Warm	0.192 (0.188-0.197)(0.185-0.200)	3.66 (3.61-3.70)(3.58-3.73)

Notes: Best-fit N_H and kT (along with their 1σ and 90% uncertainties) obtained by fitting an absorbed thermal model (phabs*apec) to the Perseus spectra.

Table 3: Spectral Analysis Results (2.0-7.0 keV) - tcticorr

Detector Temp	kT	z (keV)
Cool	4.30 (4.15-4.38)(4.12-4.44)	0.0135 (0.0126-0.0168)(0.0121-0.0184)
Warm	4.13 (4.06-4.22)(4.01-4.27)	0.0121 (0.0112-0.0156)(0.0109-0.0168)

Notes: Best-fit kT and redshift (along with their 1σ and 90% uncertainties) obtained by fitting an absorbed thermal model (phabs*apec) to the Perseus spectra.

Table 4: Spectral Analysis Results (2.0-7.0 keV) - ape

Detector Temp	kT	z (keV)
Cool	4.04 (3.90-4.20)(3.82-4.30)	0.0260 (0.0247-0.0268)(0.0233-0.0277)
Warm	4.07 (3.93-4.14)(3.87-4.19)	0.0259 (0.0241-0.0262)(0.0230-0.0276)

Notes: Best-fit kT and redshift (along with their 1σ and 90% uncertainties) obtained by fitting an absorbed thermal model (phabs*apec) to the Perseus spectra.