Updating the HETGS Grating Efficiencies

Herman Marshall
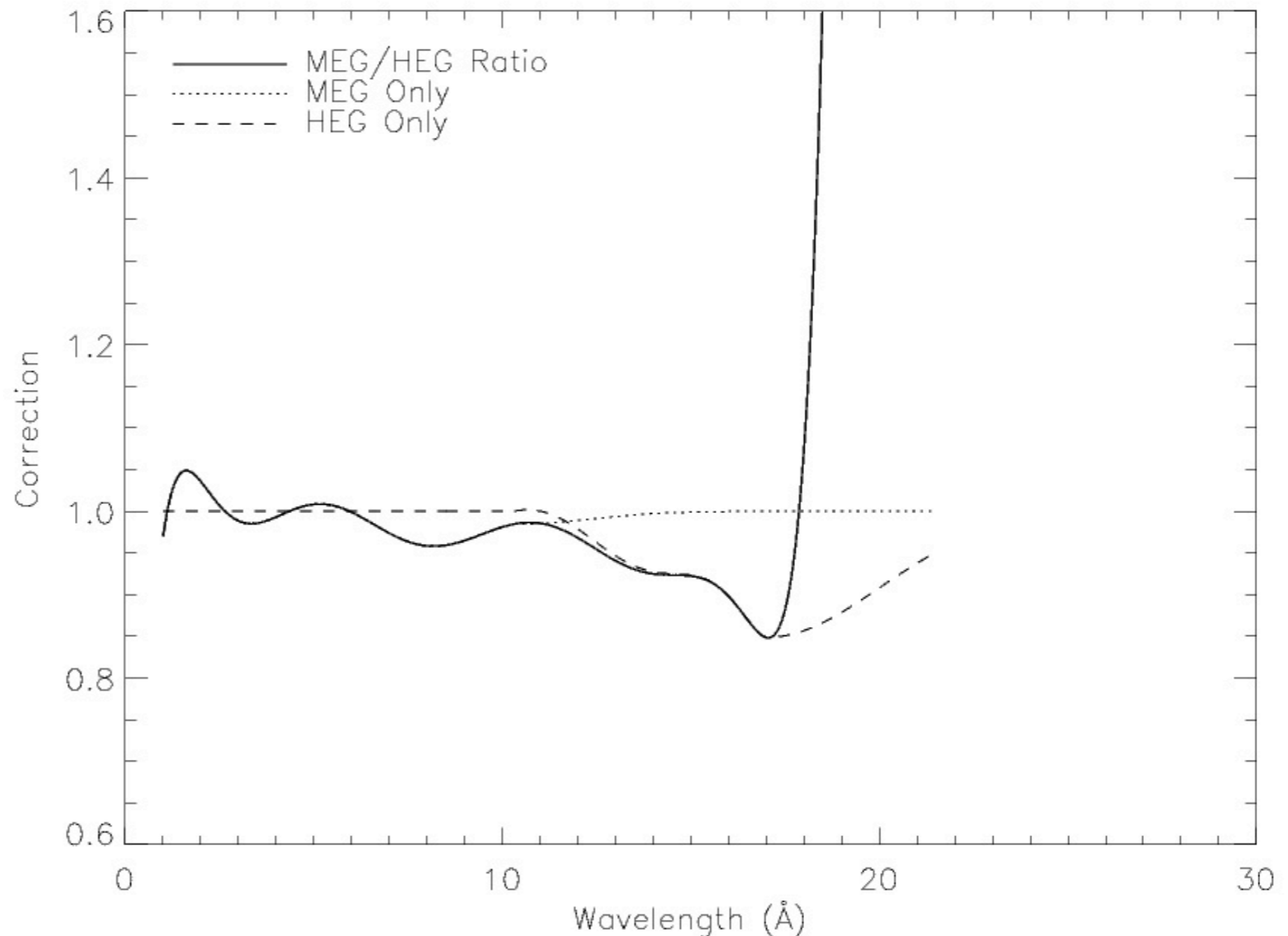
Oct. 7, 2011

HEG-MEG Comparison

Comparison of MEG and HEG data

30 Blazar Observations Used

NEW Version
<10% correction needed
consistent with MEG-LETG cross-cal

MEG/HEG correction
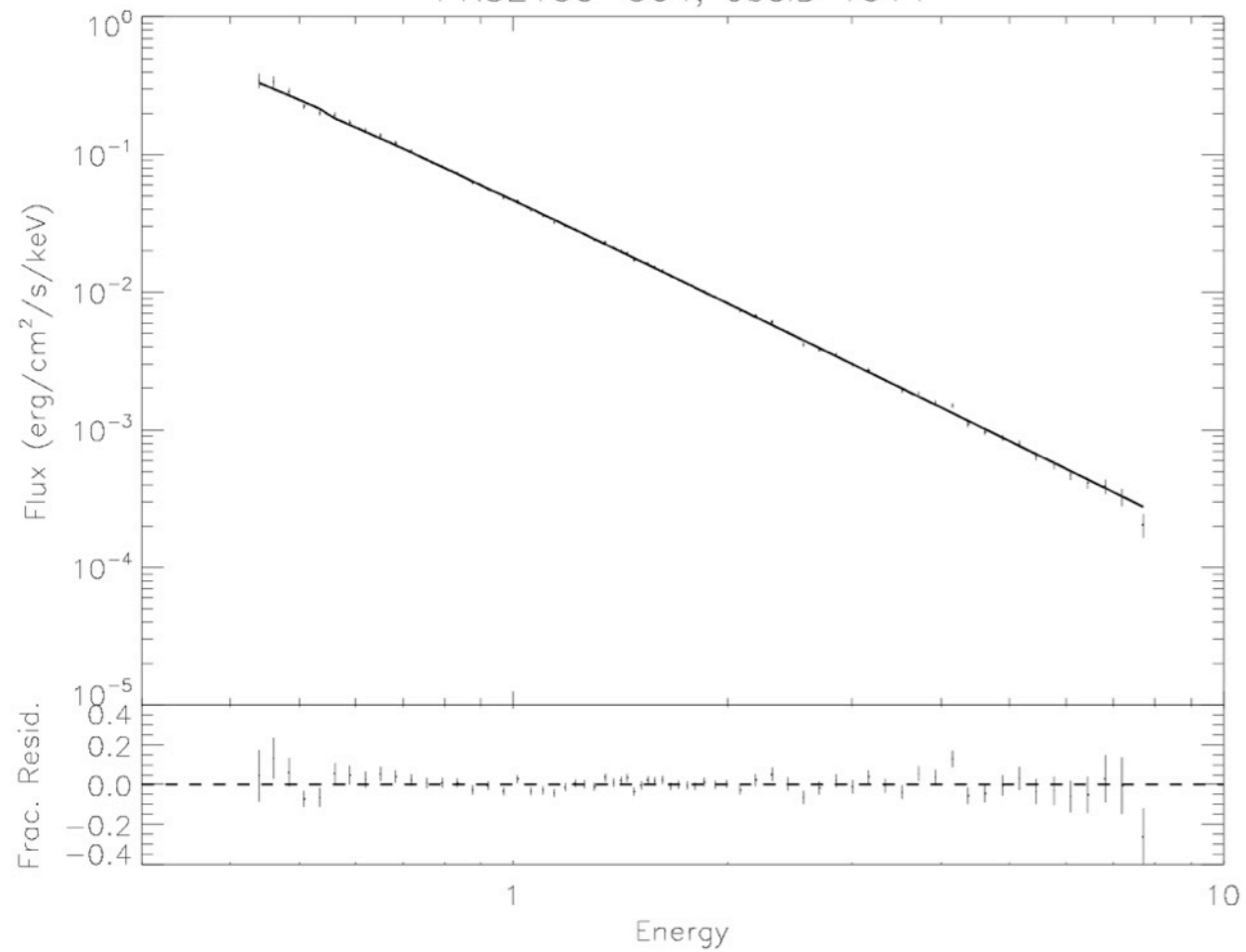
Wavelength (Å)

HETGS Update 10/07/11
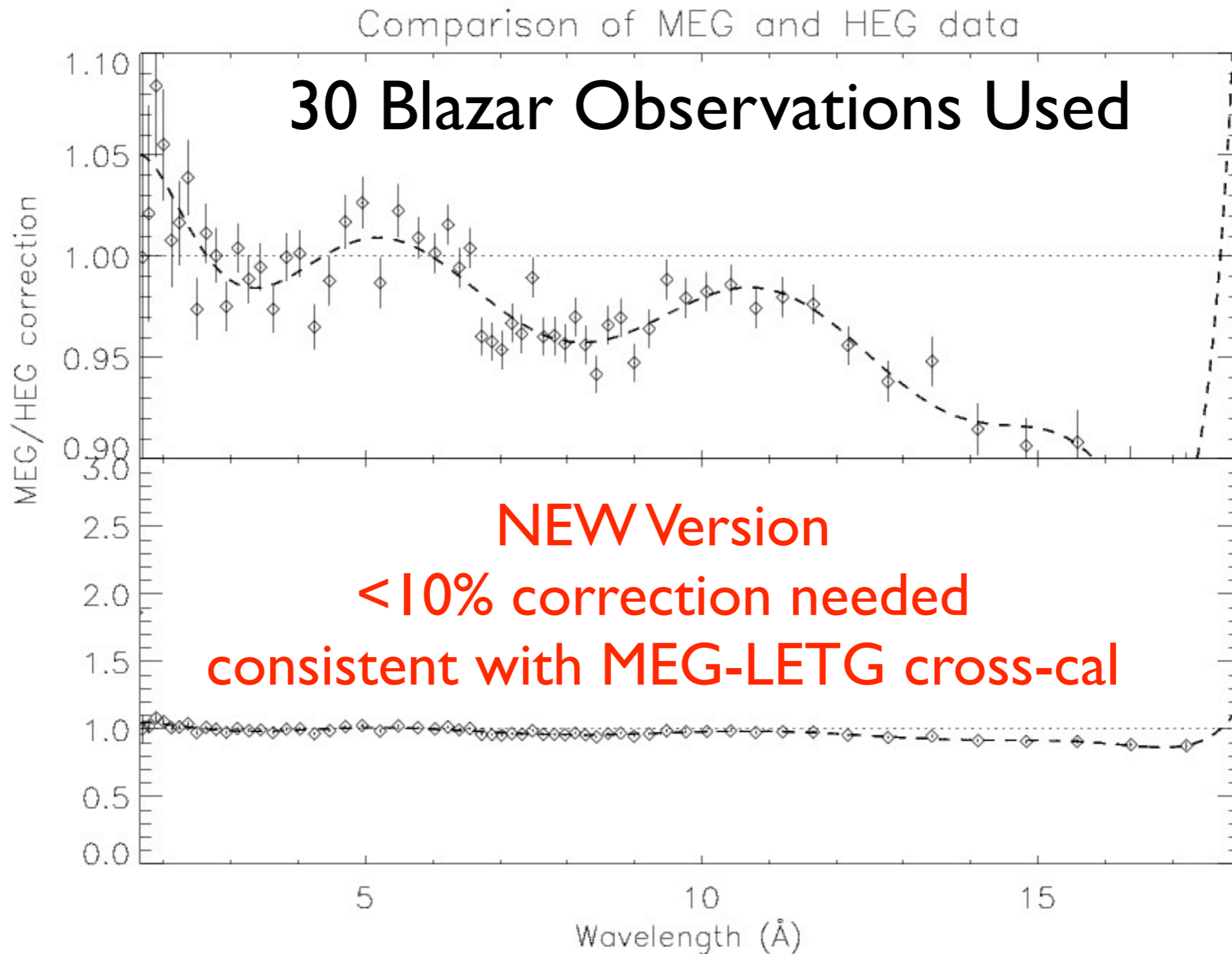
Separating HEG and MEG corrections

- Use HEG/ MEG ratio correction

- Split at 1 keV

- Correct MEG > 1 keV
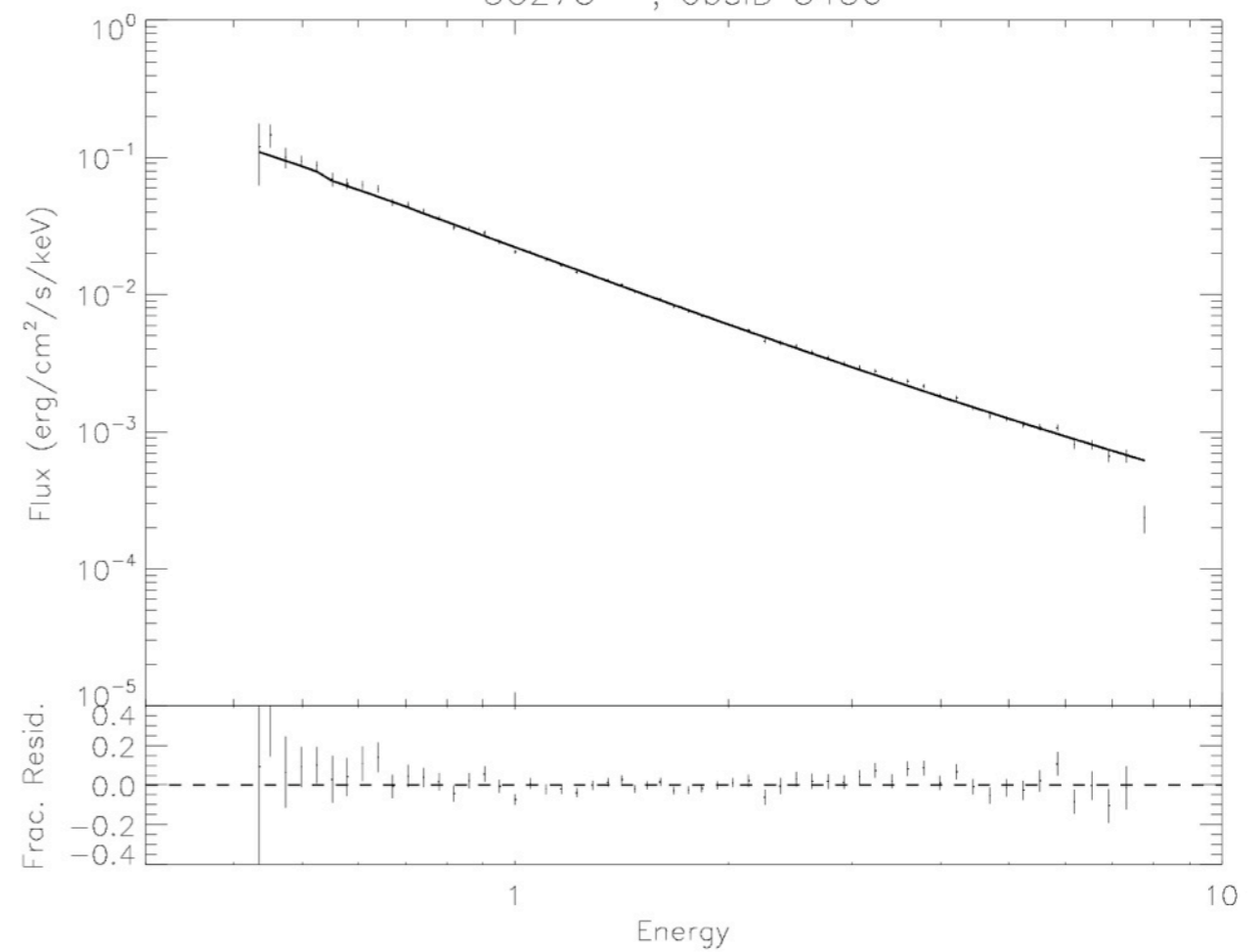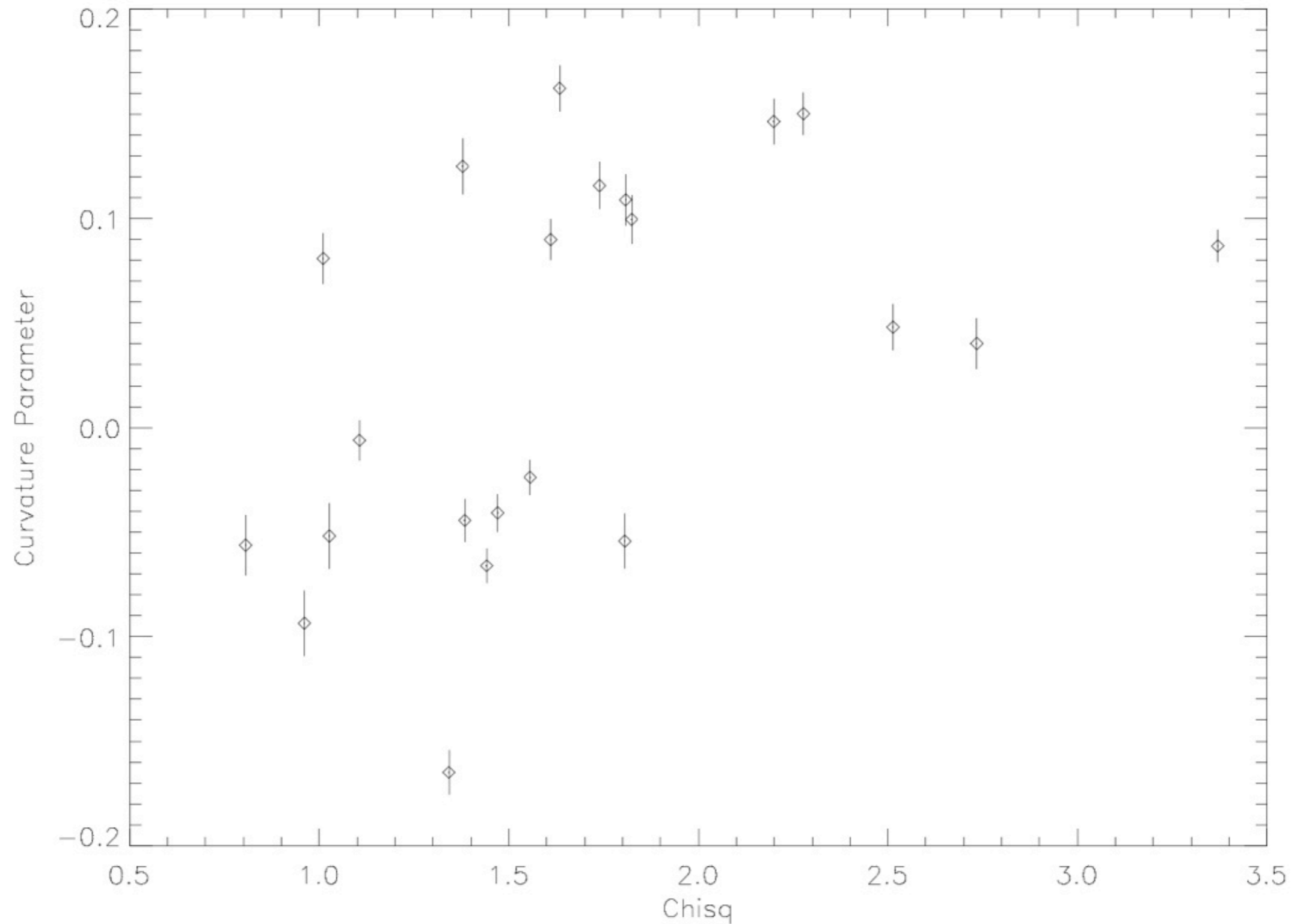
- HEG gets rest of correction

Applying Corrections
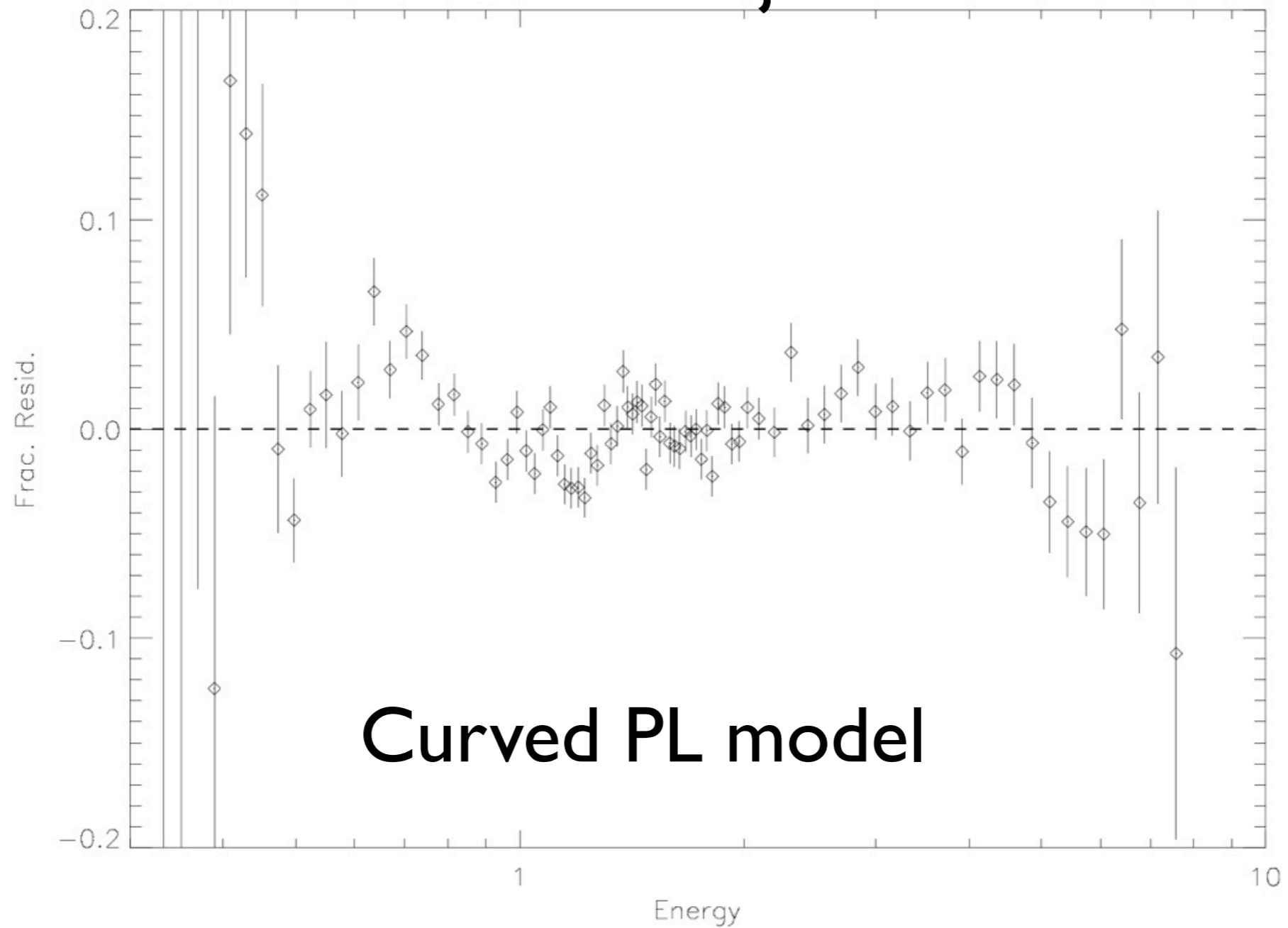

PKS2155−304, obsID 1014

3C273 , obsID 3456

BLLs fit best

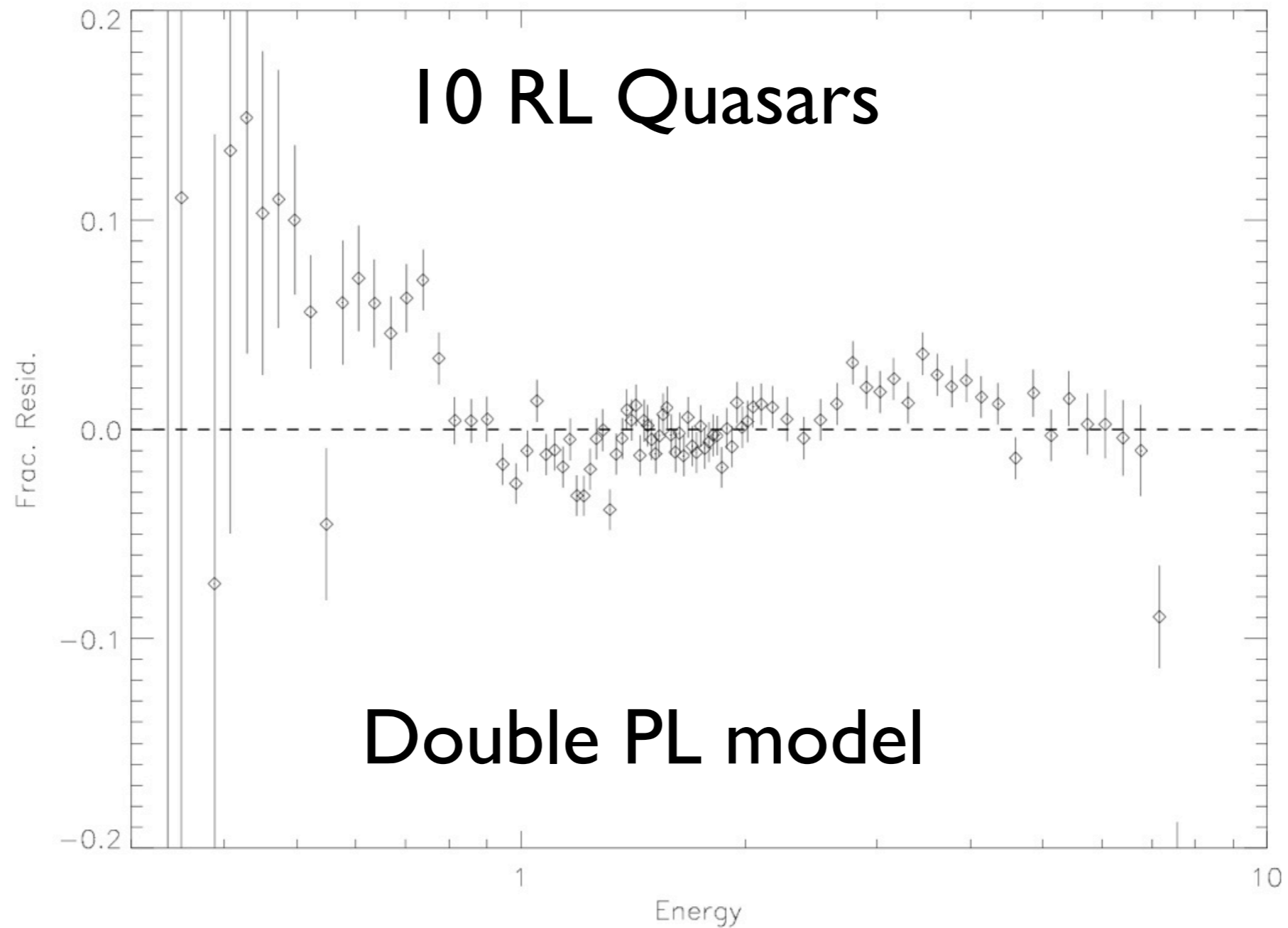# Combining Residuals

8 BL Lac objects

Curved PL model

Combining Residuals

10 RL Quasars

Double PL model

Summary

- Residuals are less than 5% across the entire band with the new correction

  - applies to several models of BL Lac objects

  - 3C 273 and 3C 382 show larger residuals that are probably real

- χ^2 discriminates apportionment methods

  - Nominal: switchover from fixing HEG to MEG at 1.2 keV

  - $<\chi^2>$ increases if MEG fixed only for E > 2.3 keV

  - $<\chi^2>$ increases if only MEG is fixed (E > 0.8 keV)