

Morphologies and SEDs of HE Sources Revealed by LHAASO

Bingcheng Jin

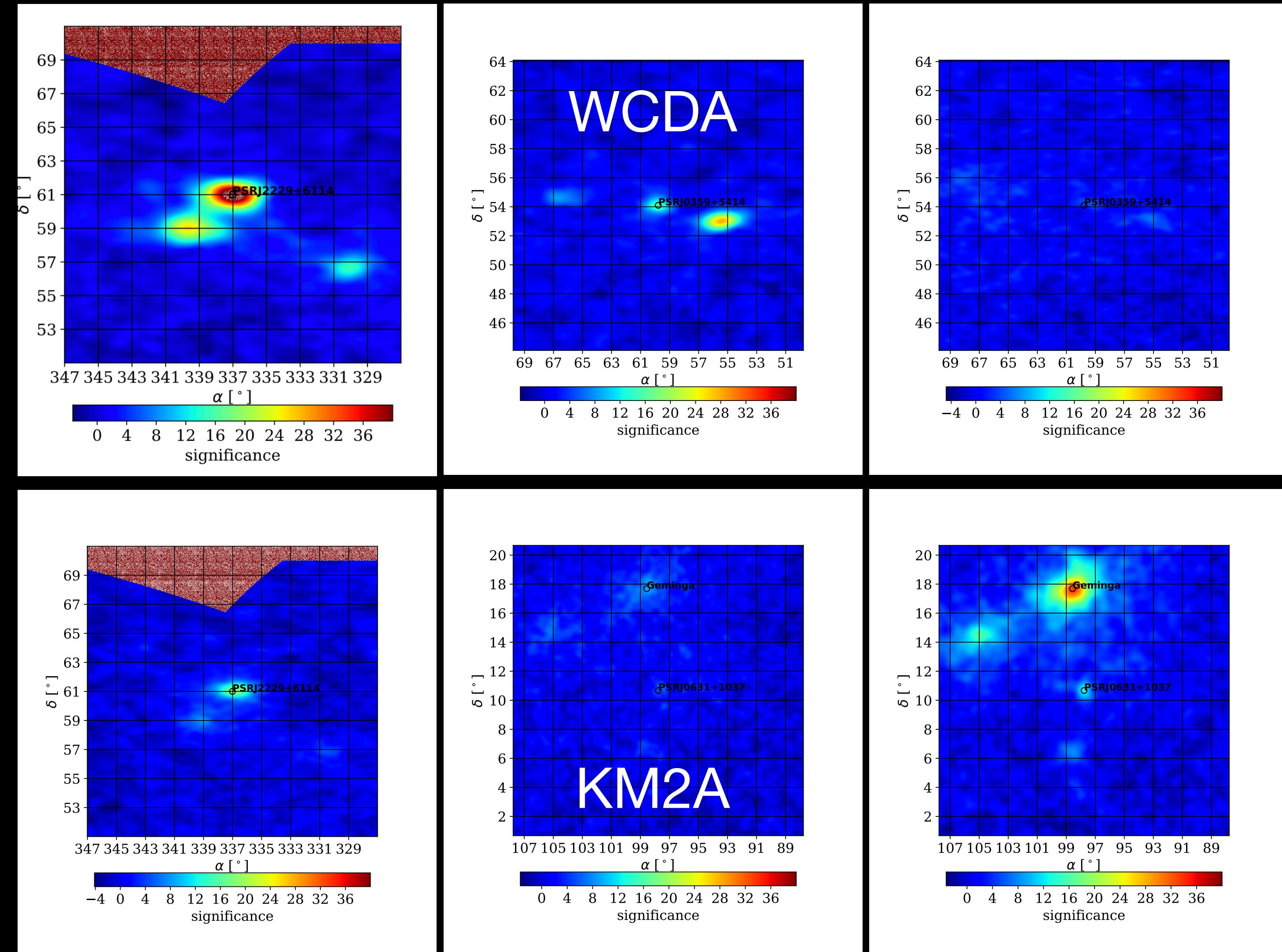
DoA, SoP, Peking University

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LHAASO Observations

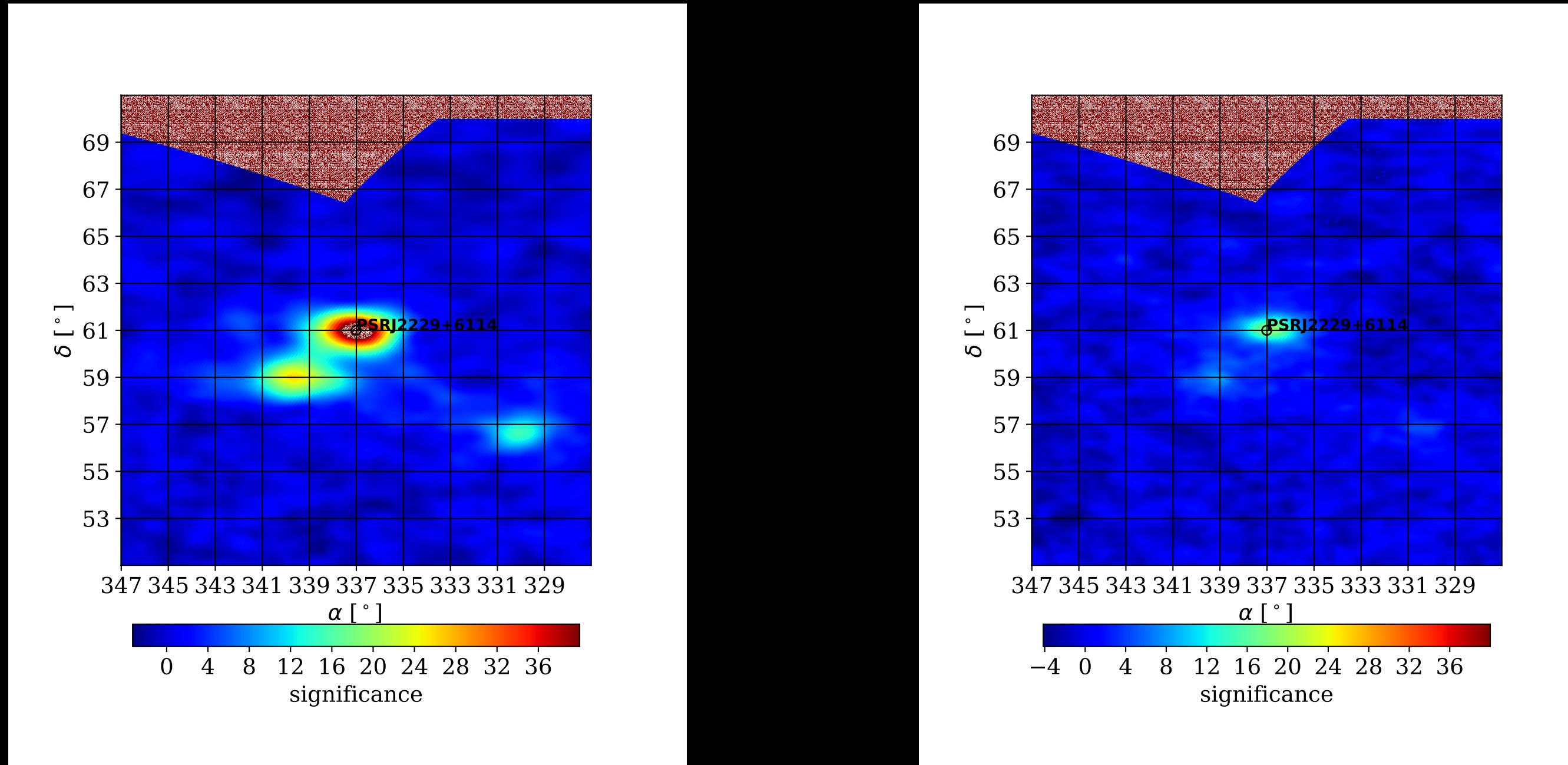
Extended
Blended
Point-like

- What is the basic strategy to find the best fit?
- For different sources:
- their intrinsic spectrum will differ
- Their morphology will differ



Modeling HE Sources

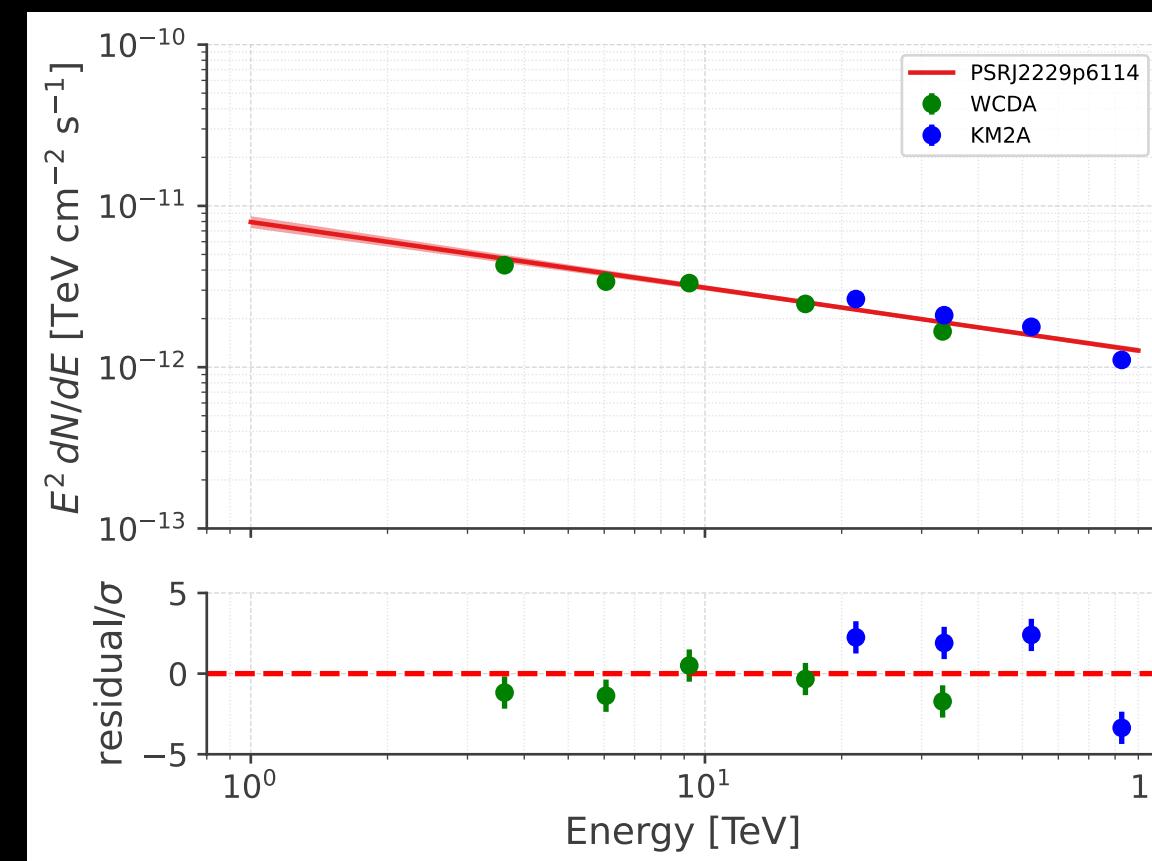
- 2-D Morphology: Disk Morphology, Gaussian Morphology
- Spectral Type: Power Law, Cutoff Power Law and Log Parabola



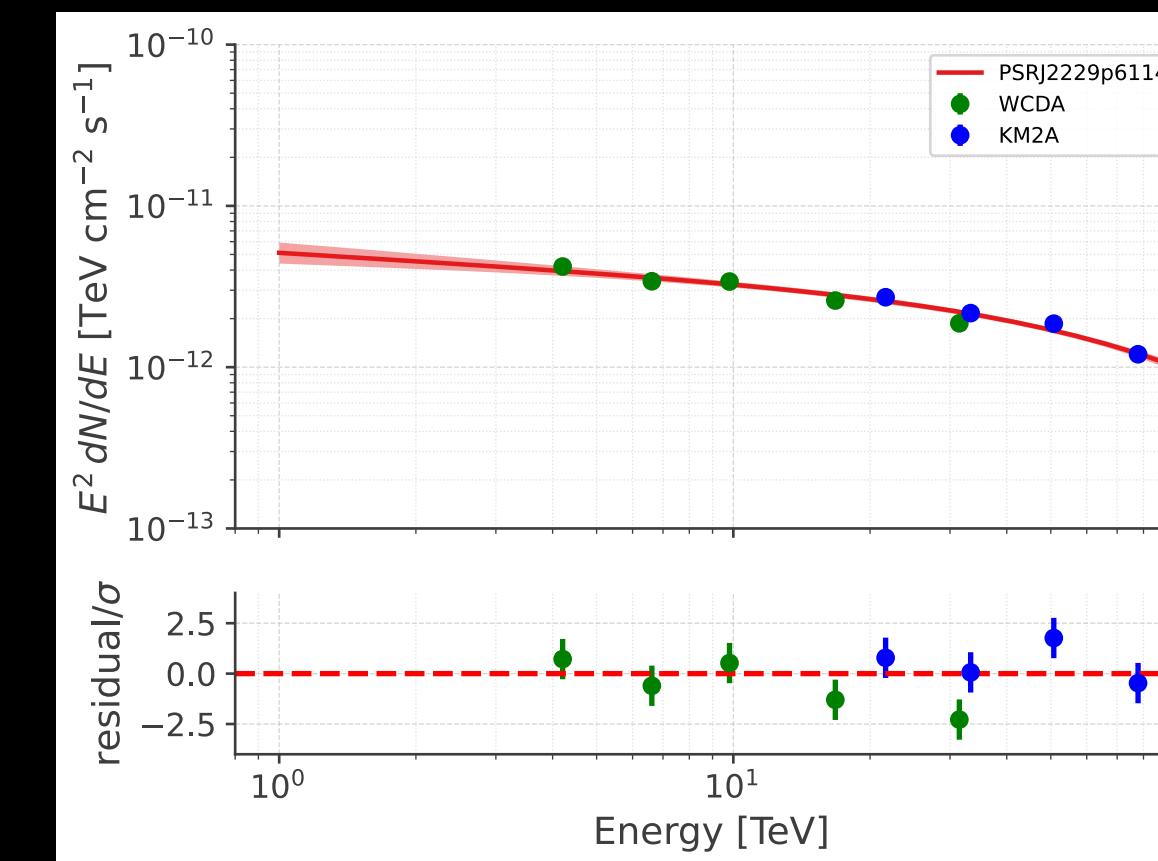
PSRJ2229+6114

How to best model the HE sources?

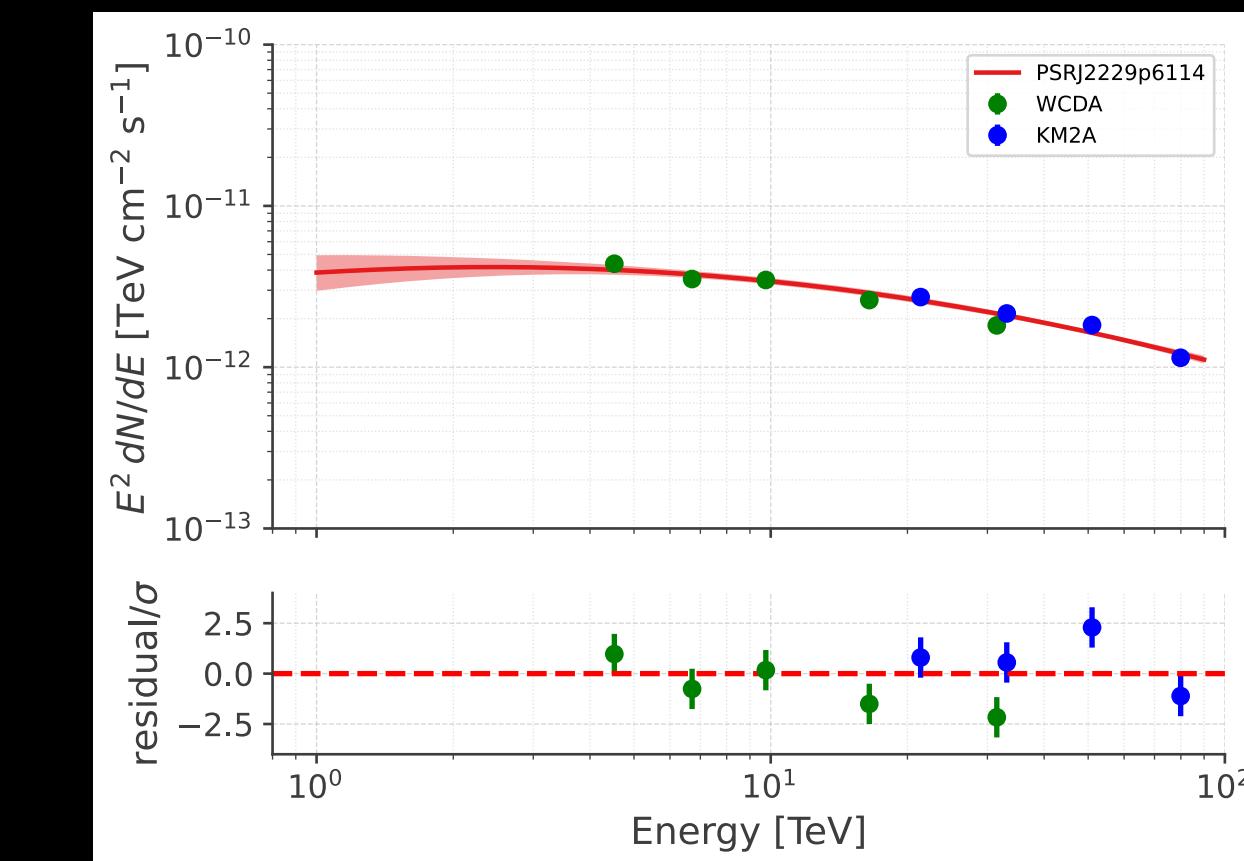
How Spectral Type Influence Flux Measurement



Power Law
TS=1062.63, 2717.03

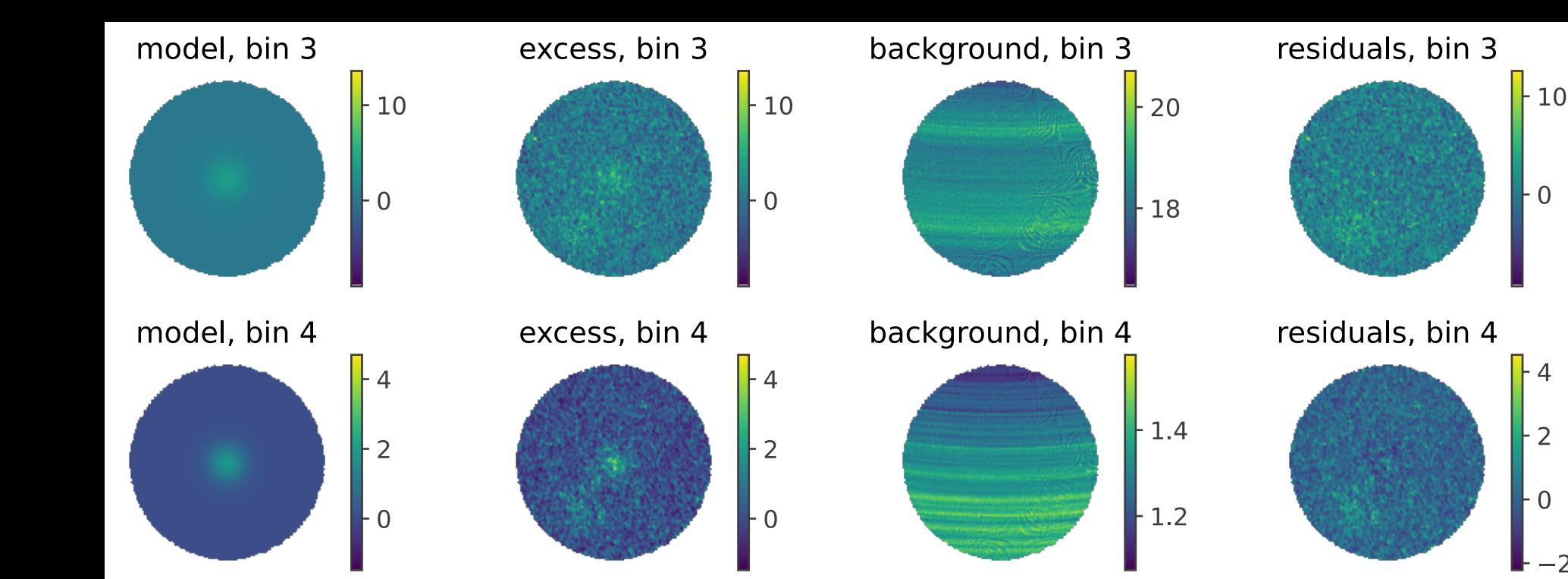
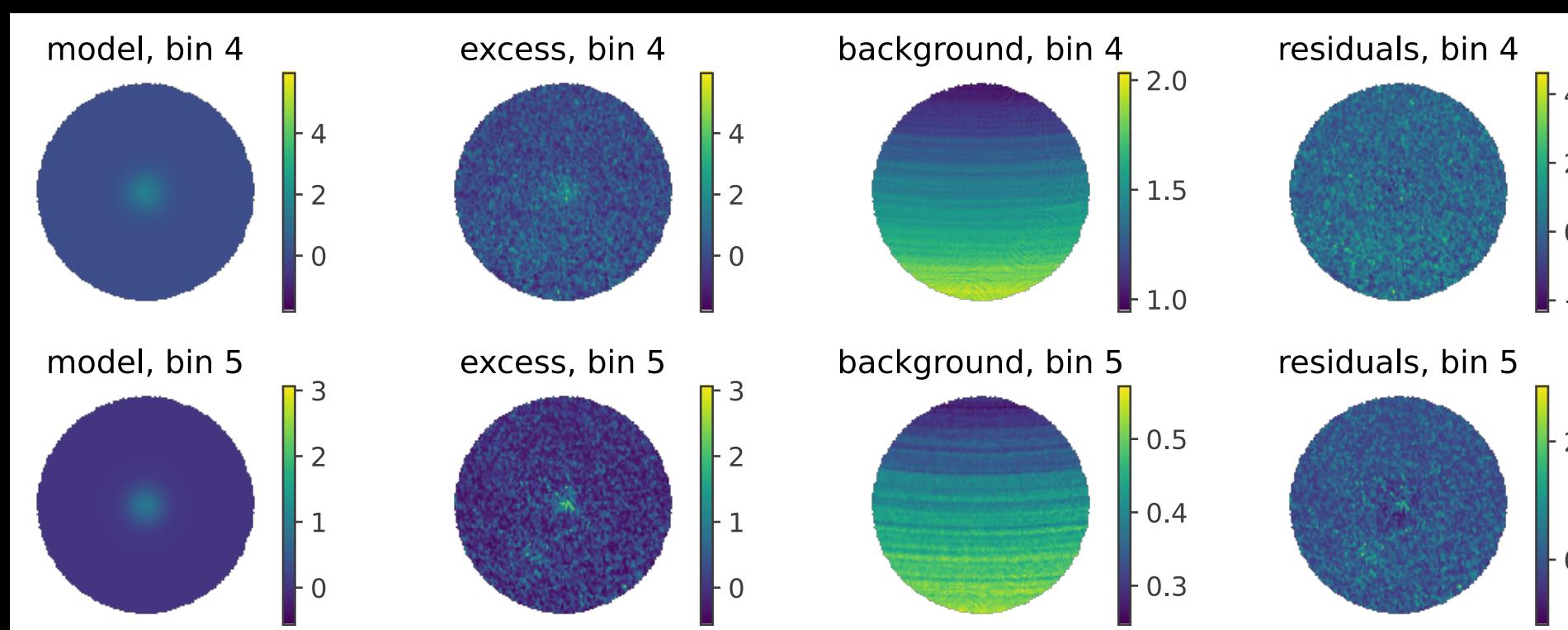


Cutoff Power Law
TS=1061.68, 2736.67

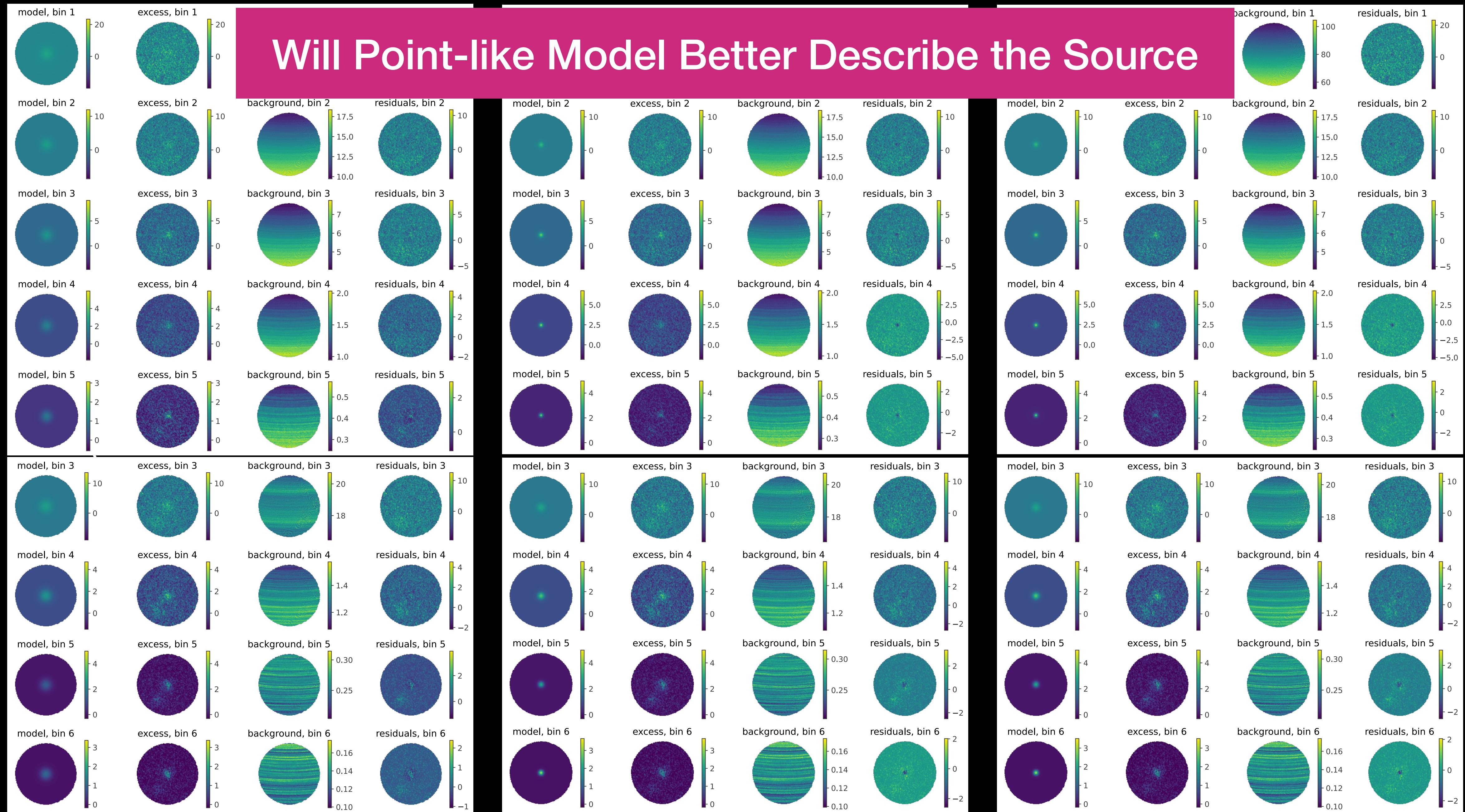


Log Parabola
TS=1060.55, 2734.26

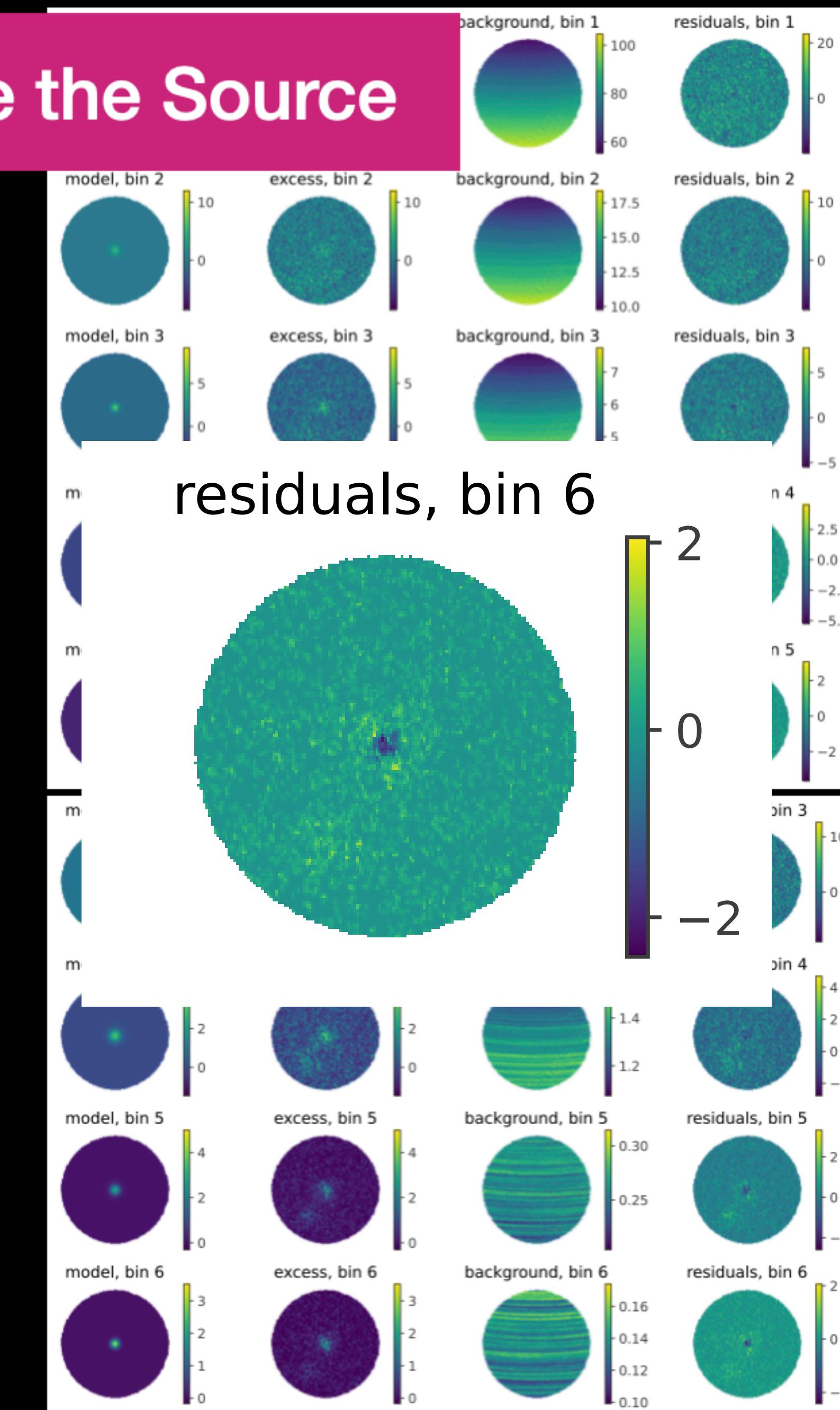
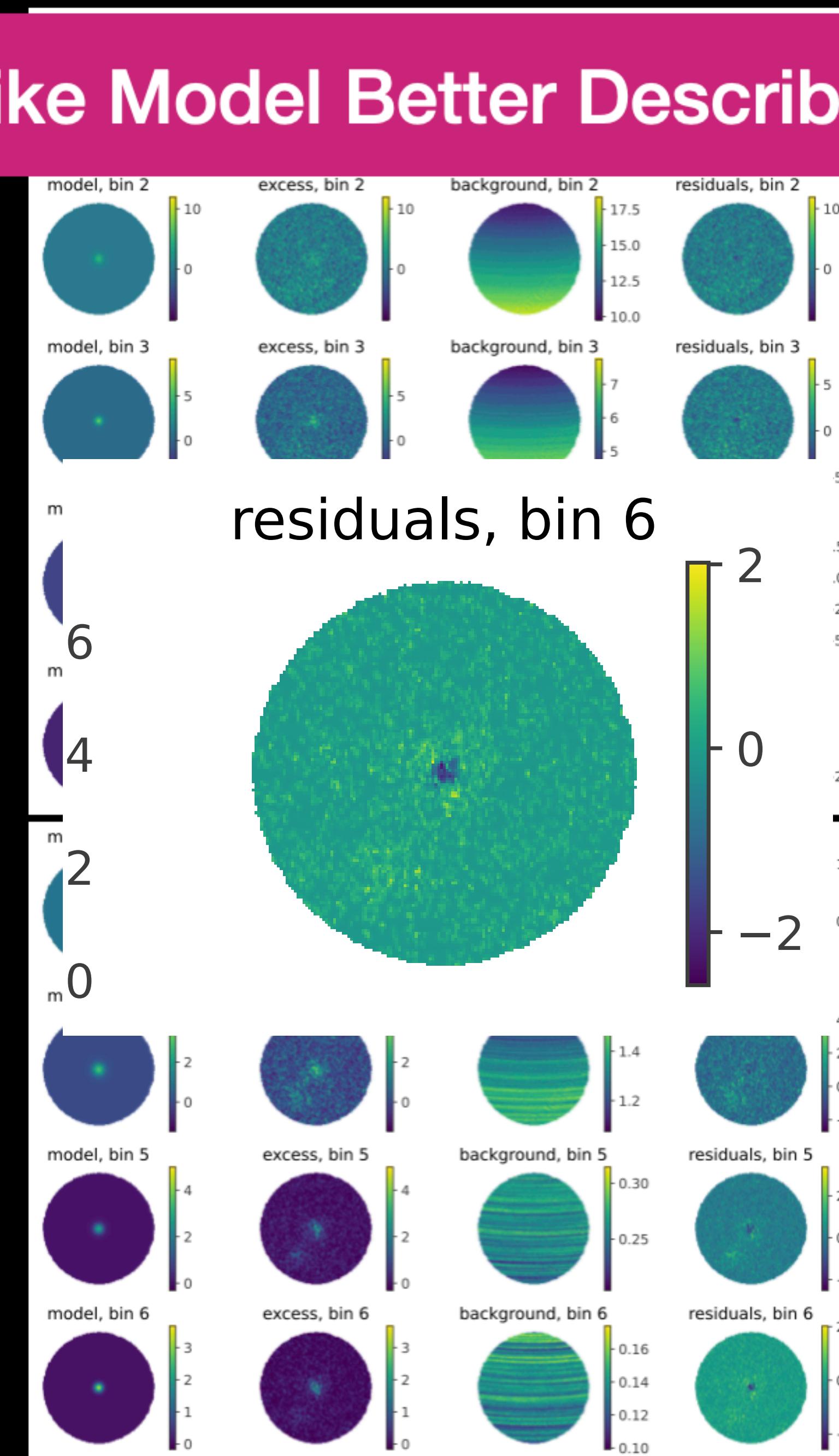
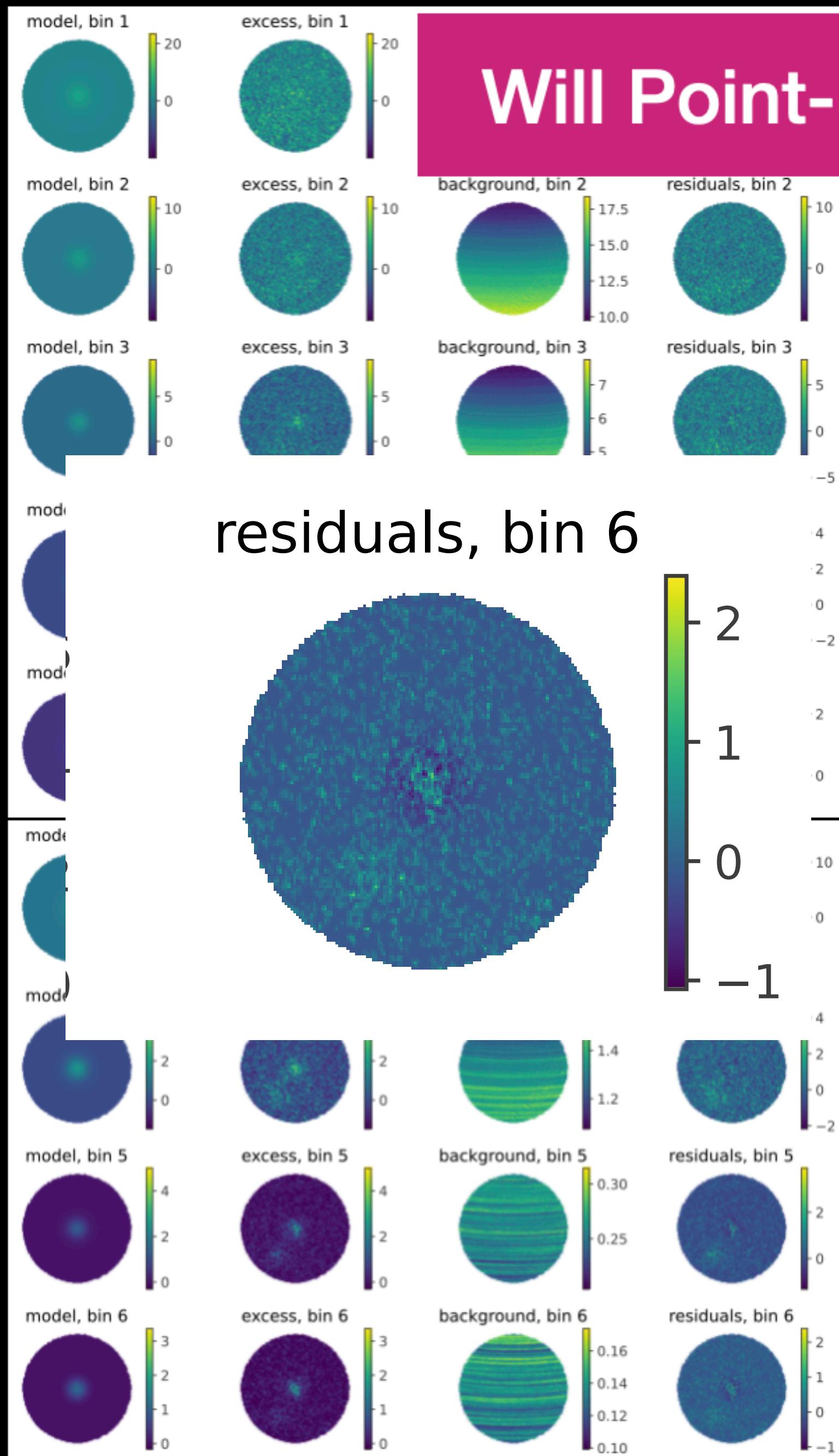
Are they good enough to model the source?



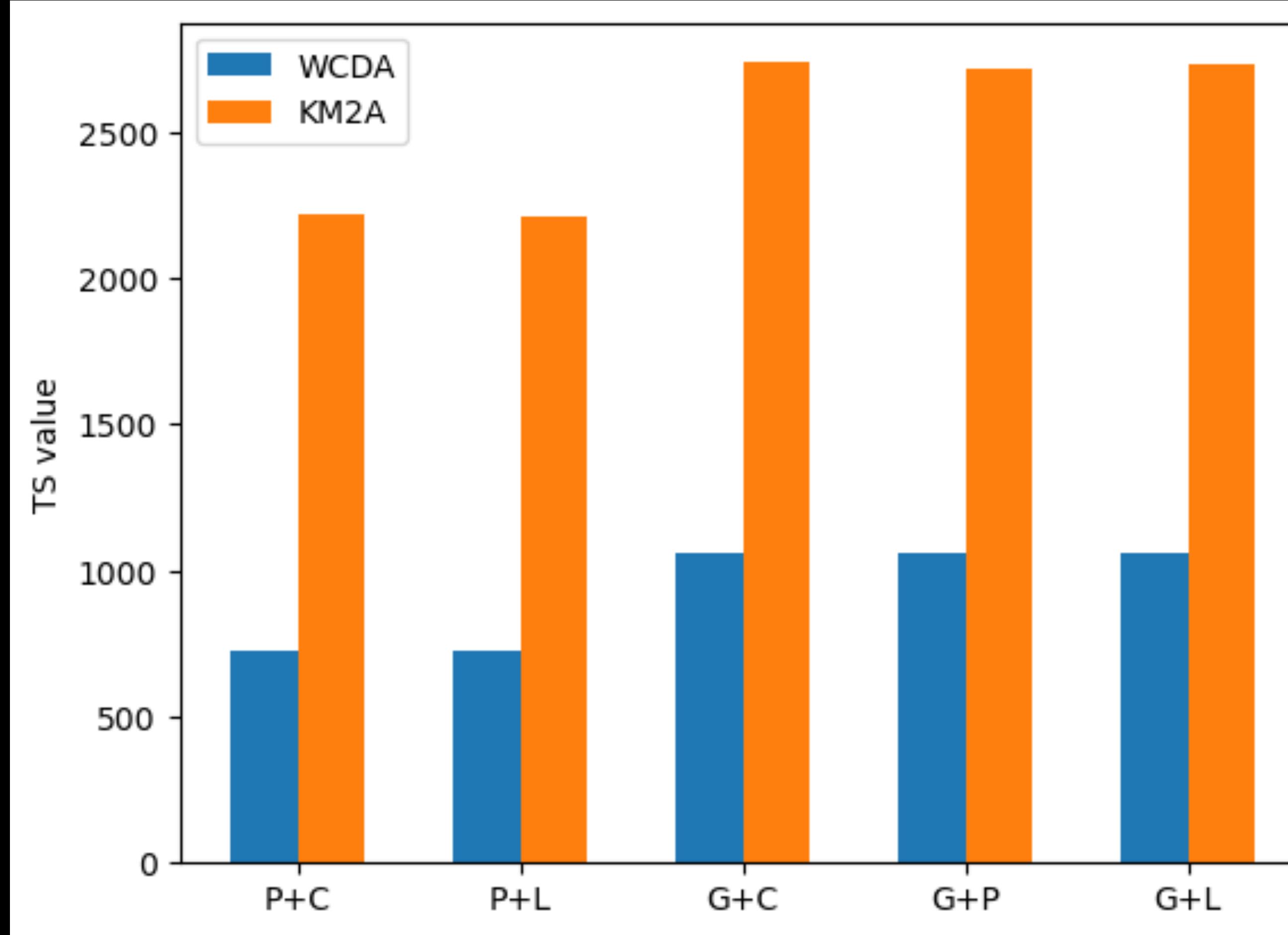
Will Point-like Model Better Describe the Source



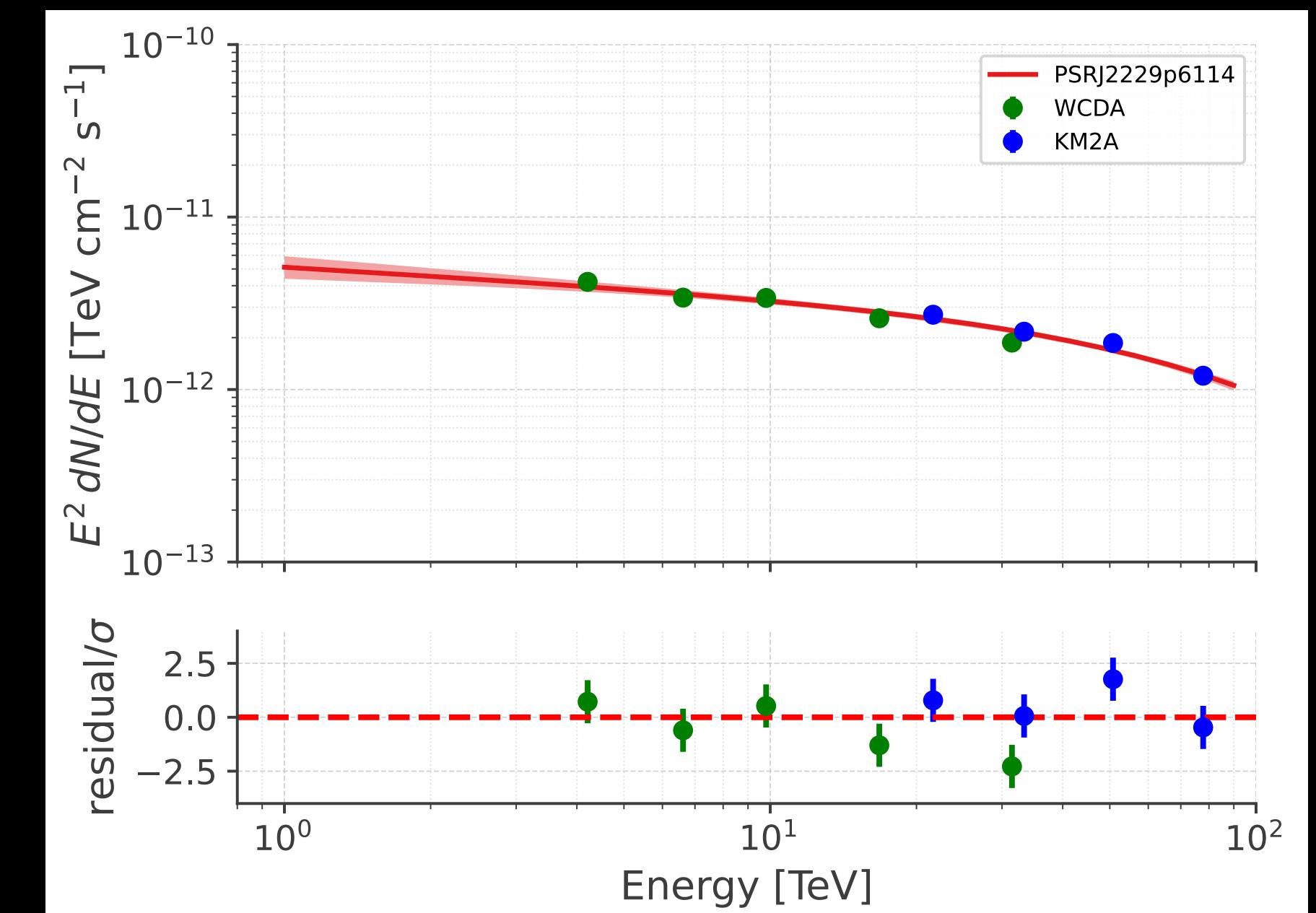
Will Point-like Model Better Describe the Source



Best Fit Model

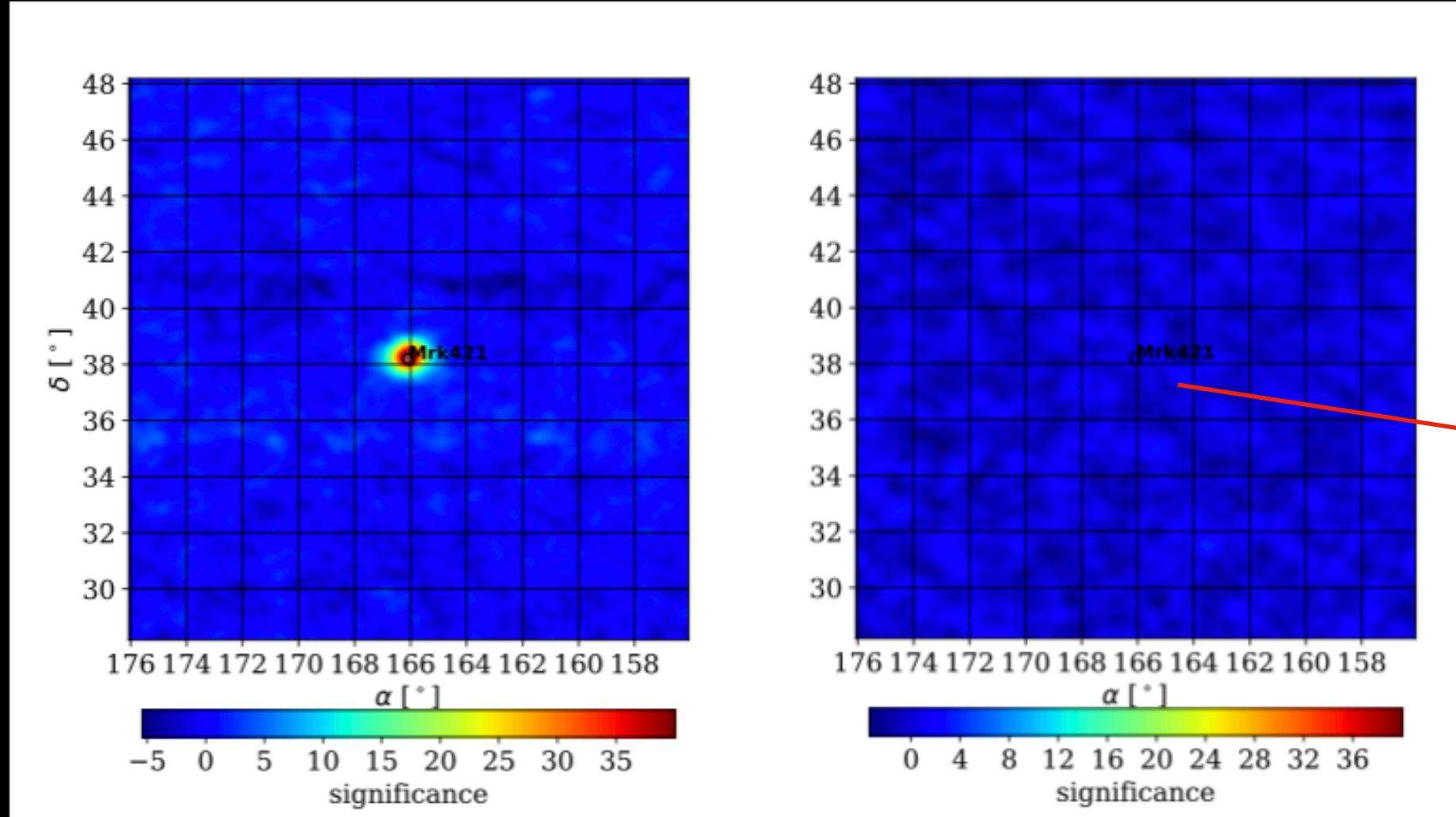


G+C gives largest TS values



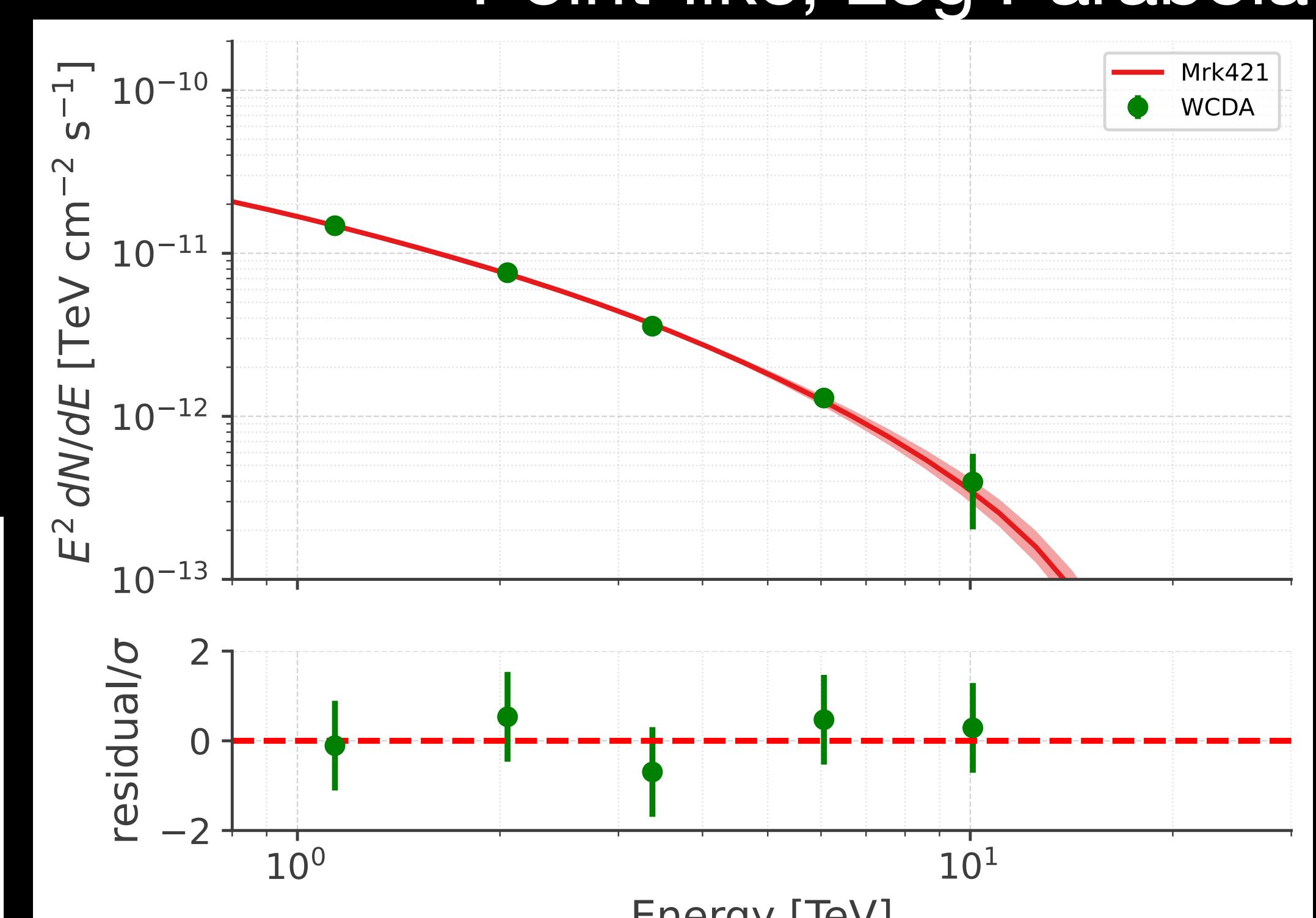
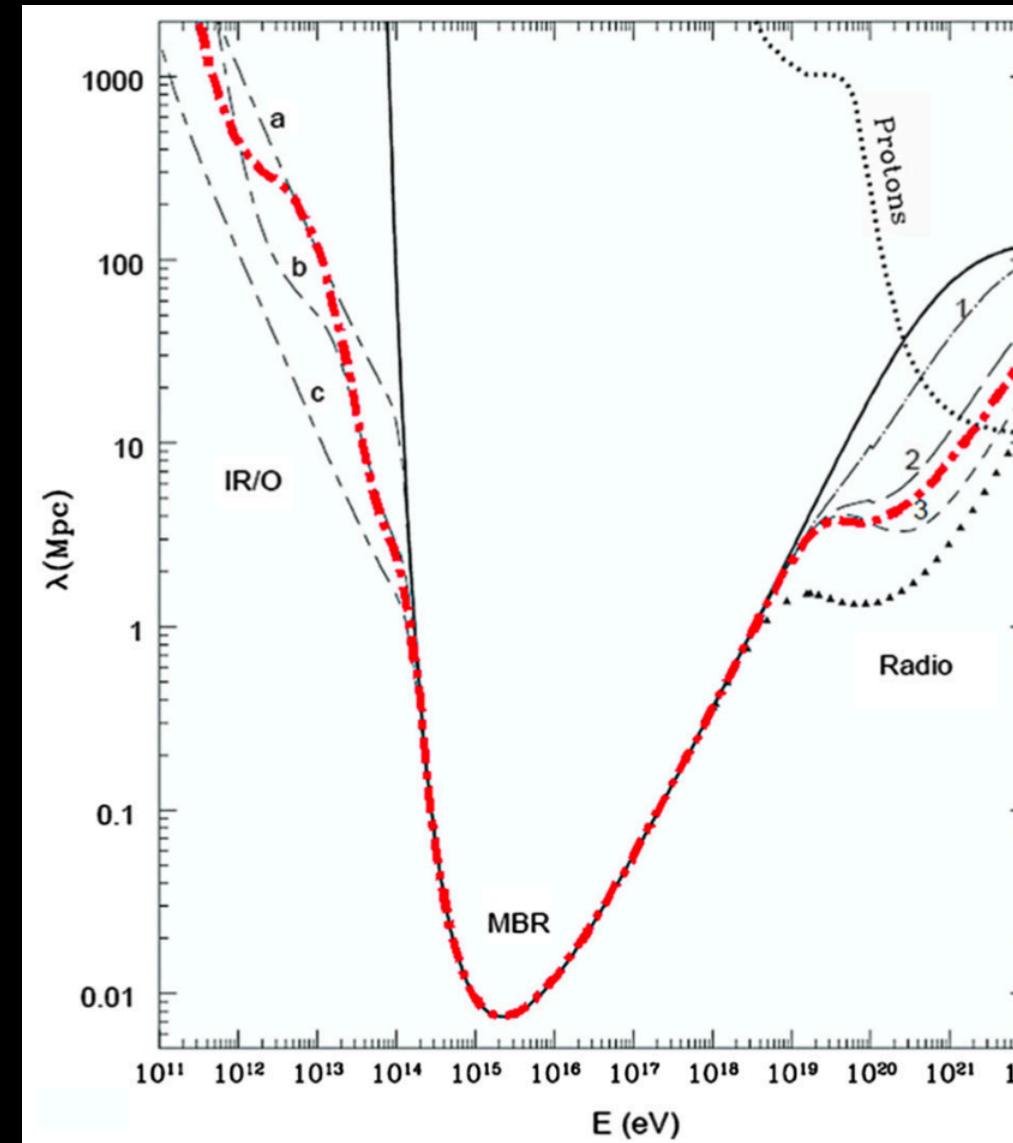
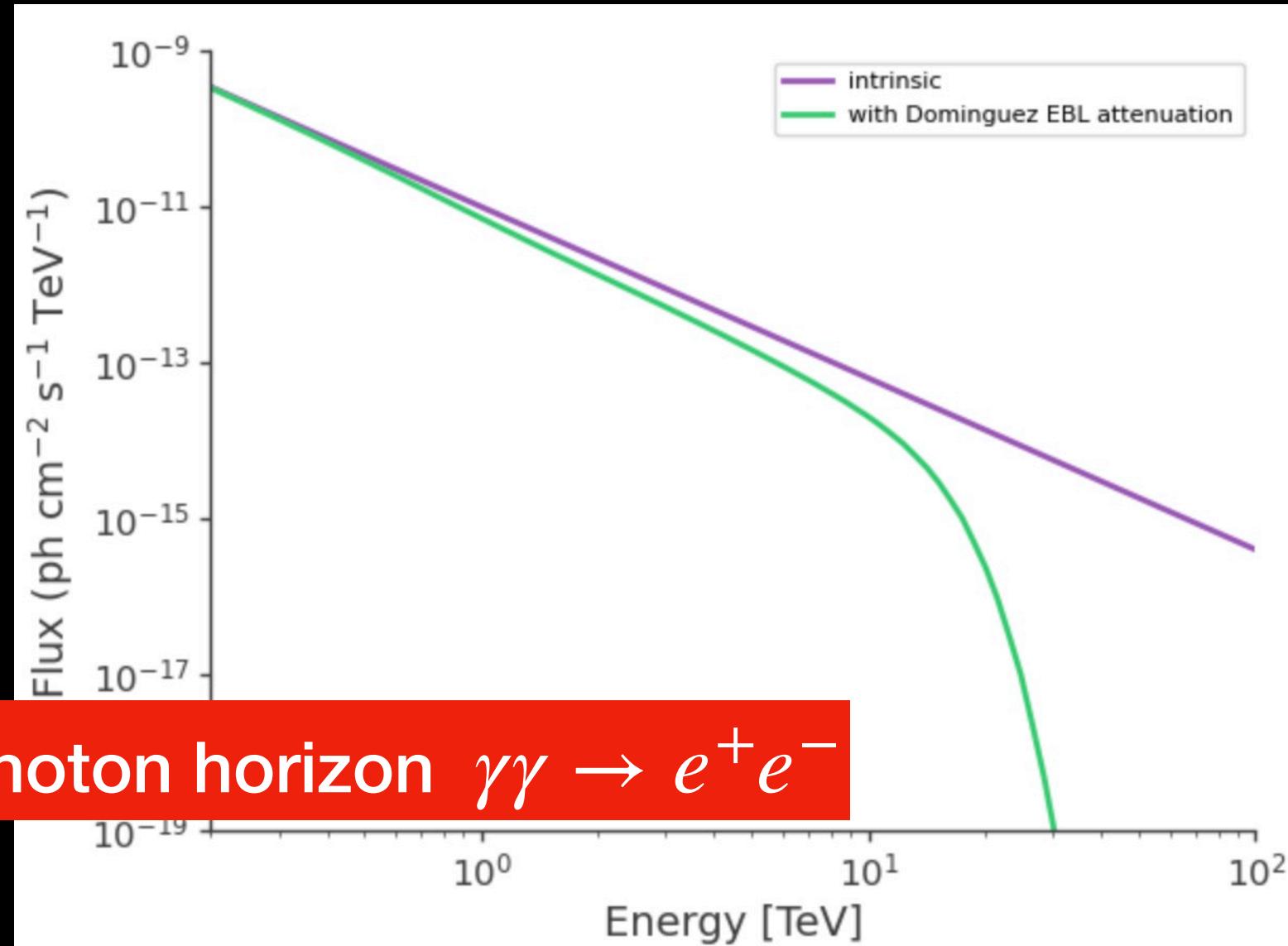
Cutoff Power Law
TS=1061.68, 2736.67

AGN Energy Spectrum



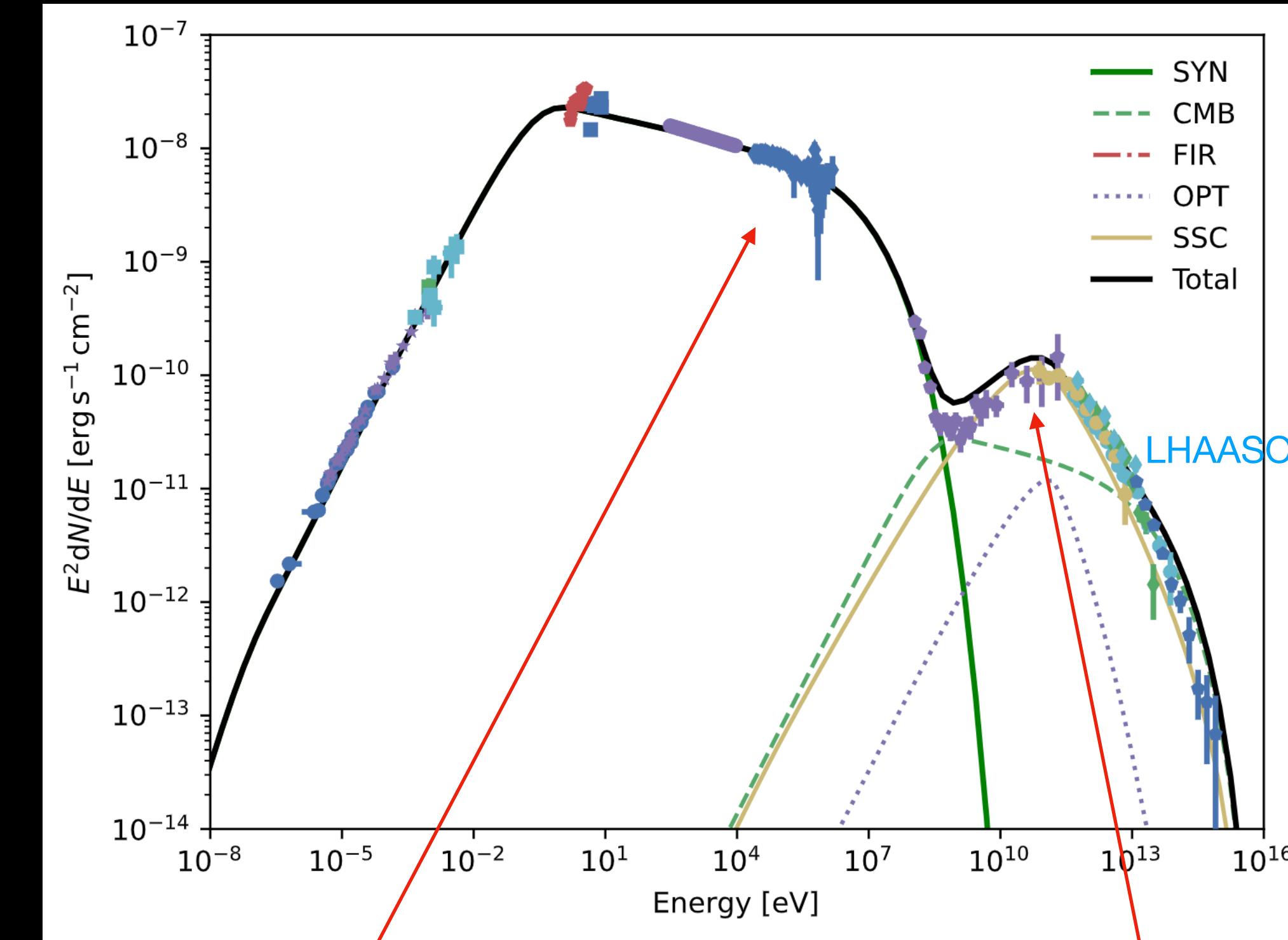
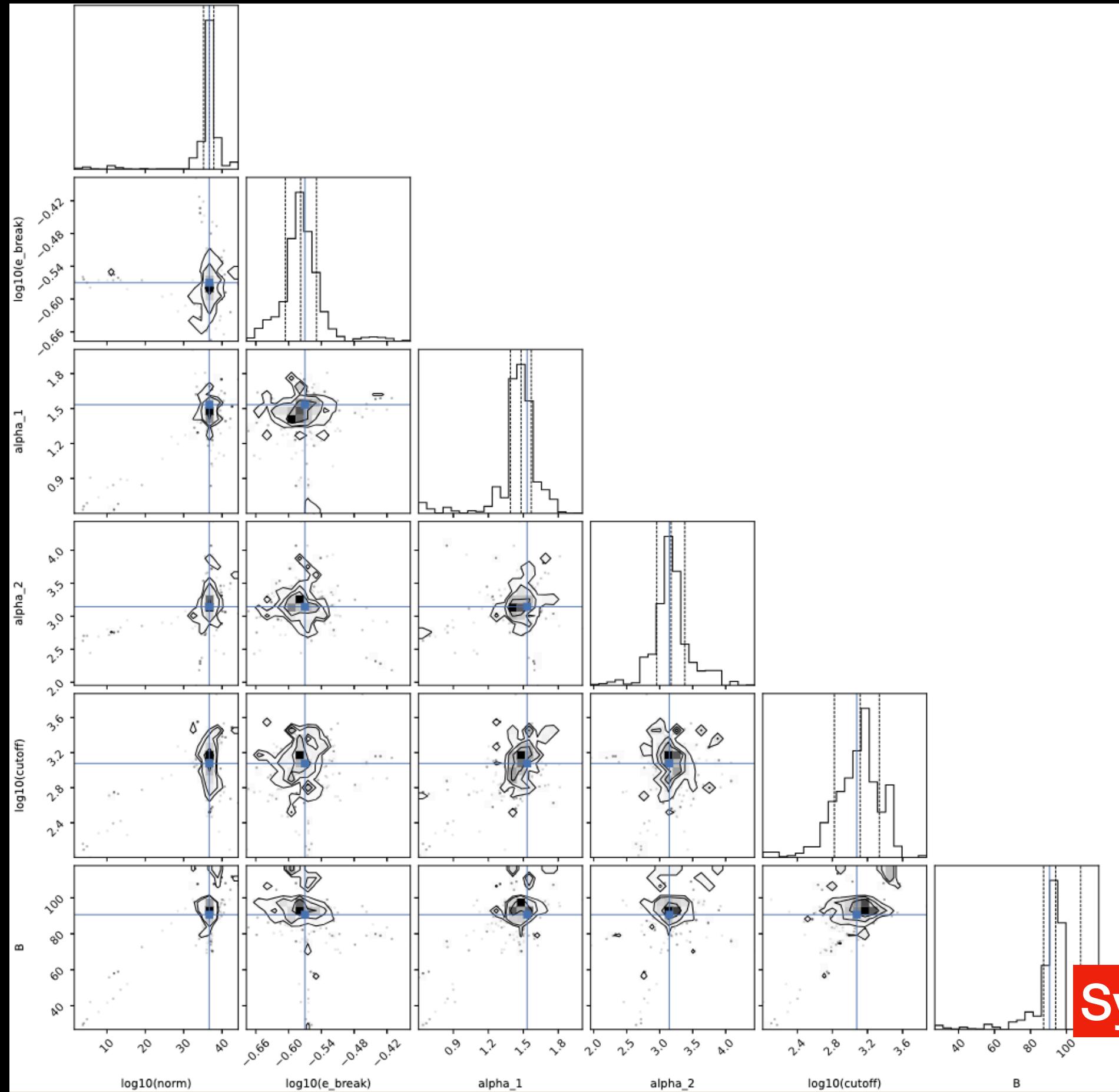
Non-Detection in KM2A

Significance Map of Mrk421, BL Lac, $z=0.031$



TS=5280.8

SED Fitting For Crab Nebula

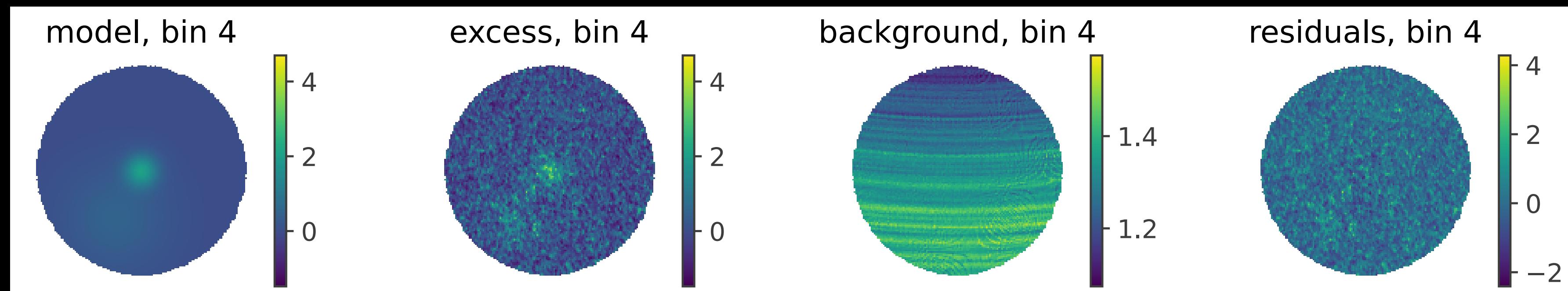


Synchrotron (Ginzburg & Syrovatskii 1964)

Inverse Compton (Blumenthal & Gould 1970)

Further Analysis

- Solve Blending Problem



- Multi-wavelength observations of AGN: From X-ray to TeV
- Correlation between HE emission and AGN activity