

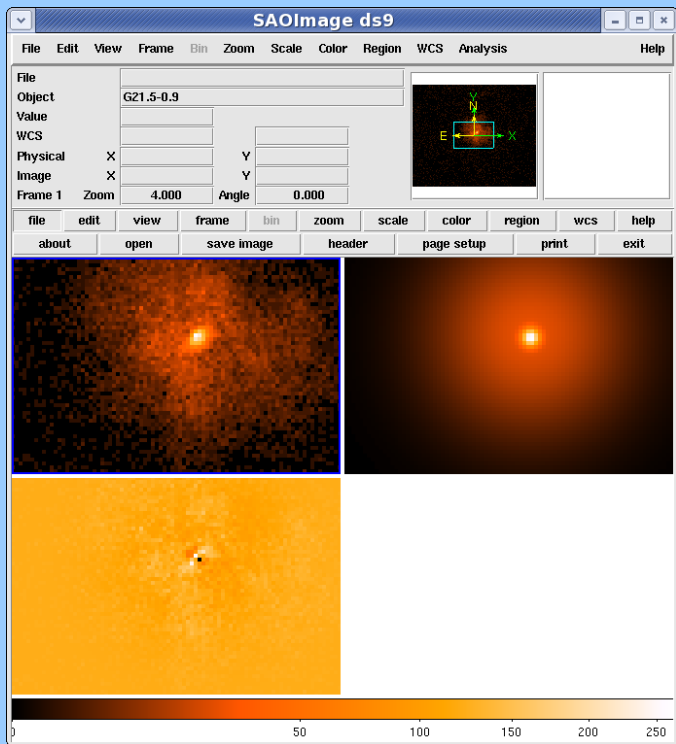
Sherpa

A General Modeling and Fitting Application

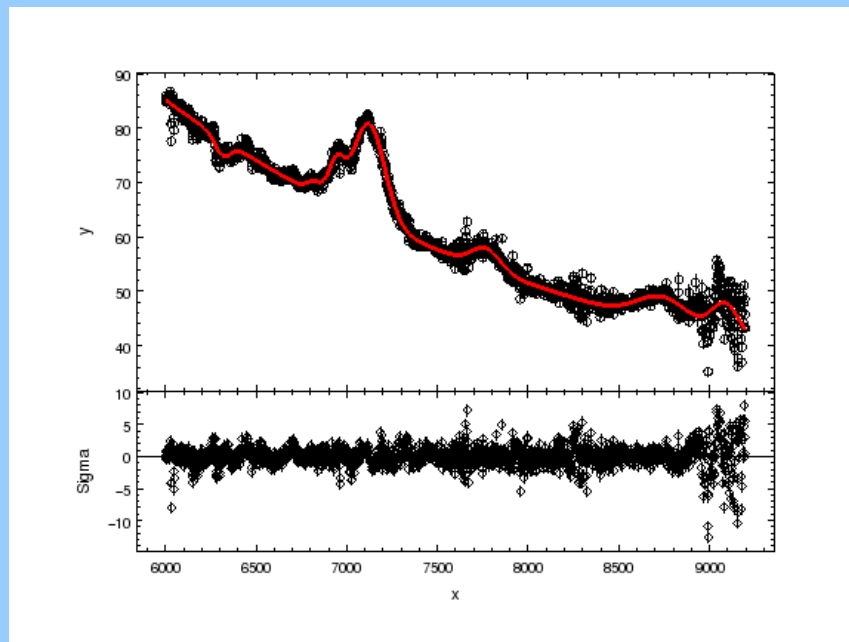
Stephen Doe

Chandra X-ray Center
Harvard-Smithsonian CfA

G21.5-0.9 (SNR)



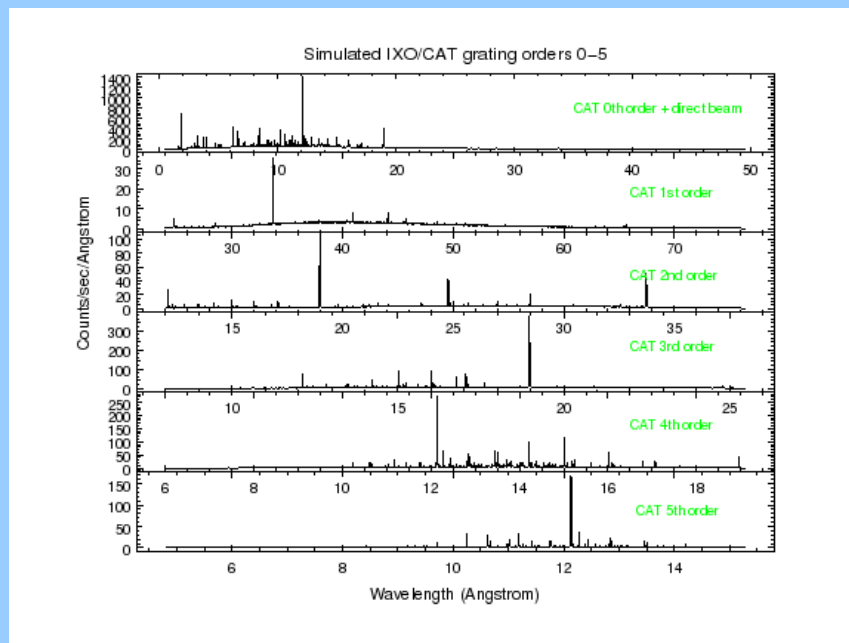
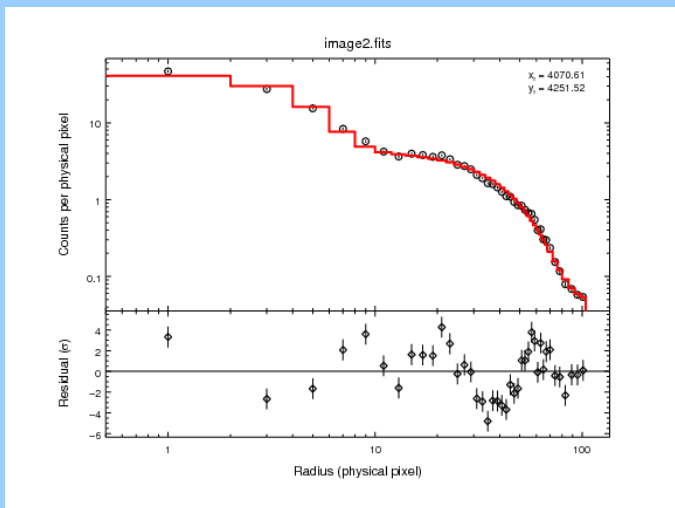
Q1701+6414 (Optical Spectrum, Quasar)



Model

Simulated Spectra (IXO/CAT)

G21.5-0.9 (Radial Profile)

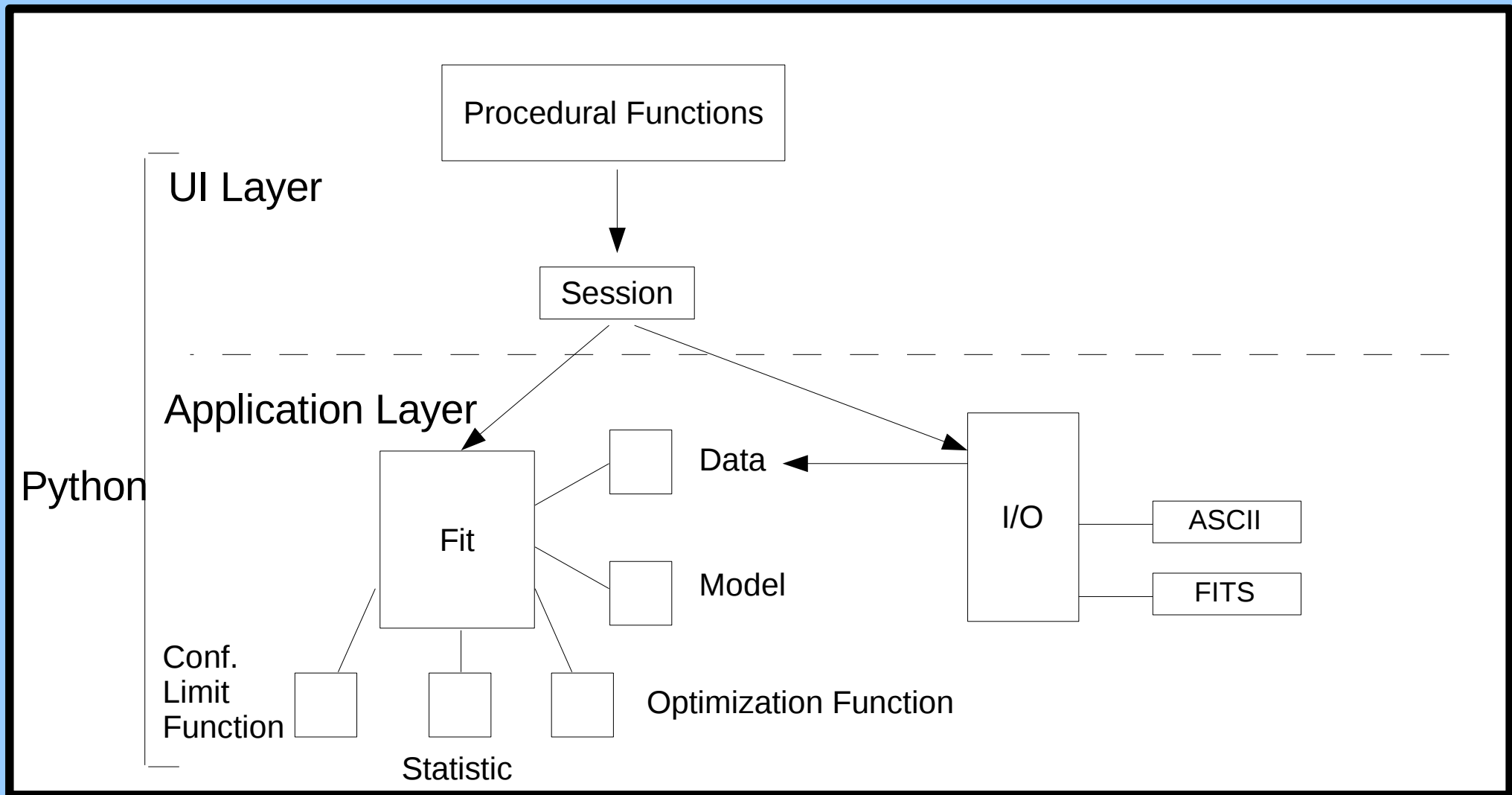


Data

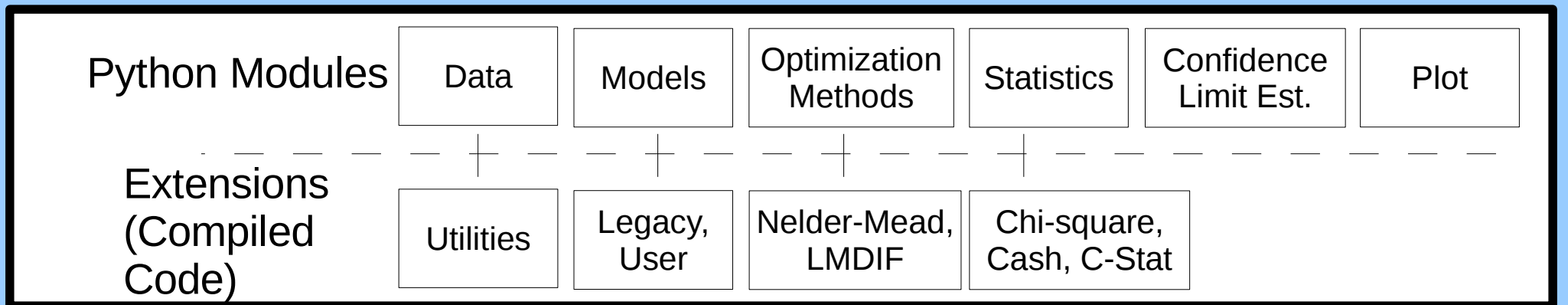
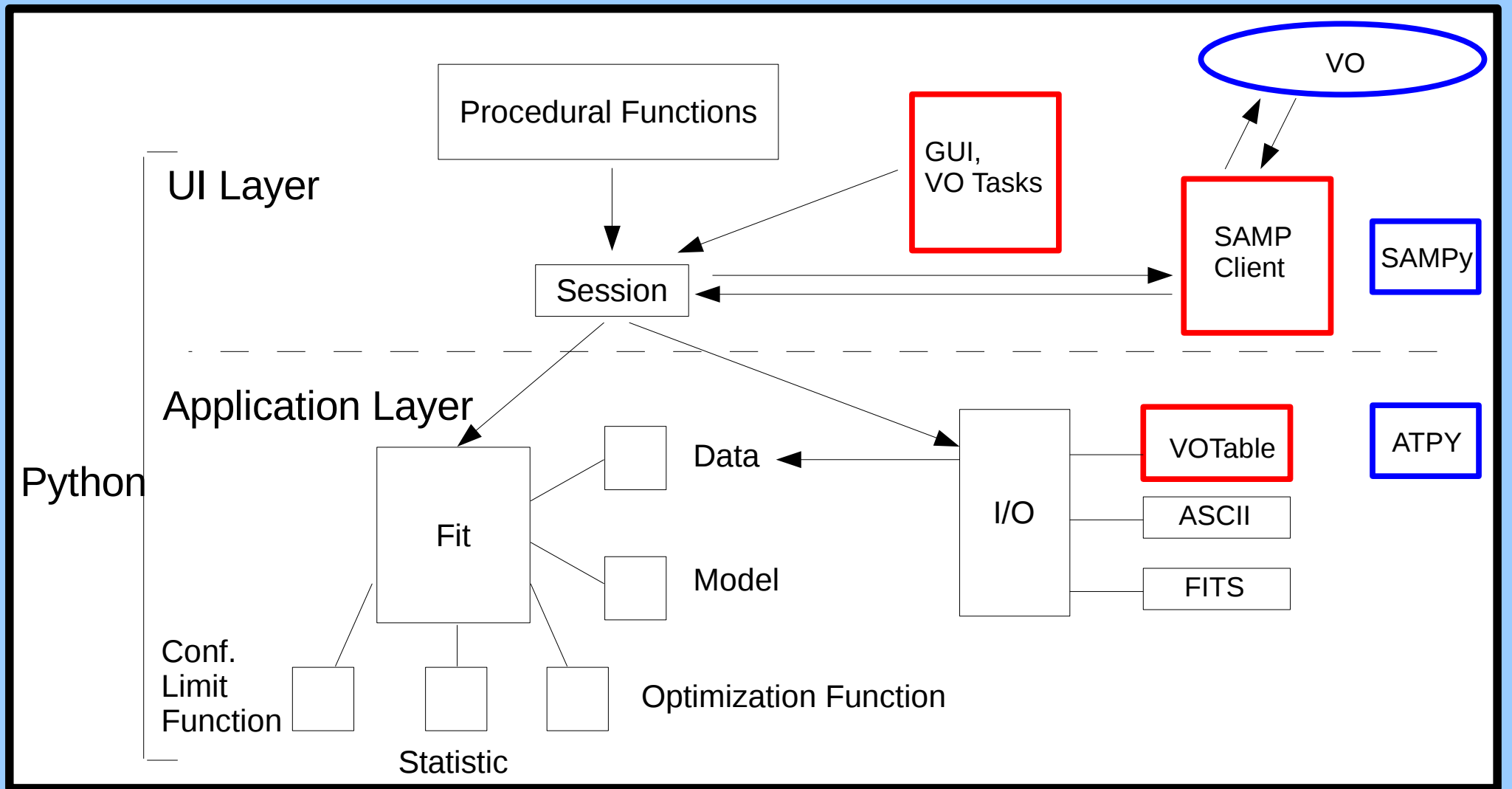
Resid.

Sherpa Analysis Usage:

- Chandra Source Catalog
- COSMOS, CHAMP Surveys
- HST Spectra (Emission Line Project)
- Quasar SEDs
- Surface Brightness Profiles
- Luminosity Functions
- Simulations
- Engineering (Chandra thermal trends)



Python Modules	Data	Models	Optimization Methods	Statistics	Confidence Limit Est.	Plot
Extensions (Compiled Code)	Utilities	Legacy, User	Nelder-Mead, LMDIF	Chi-square, Cash, C-Stat		



VO: Sherpa Feasibility Study

- Use of SAMP
 - SAMP Client (talk to TOPCAT, VOQuery ...)
- VOTable
 - New Sherpa I/O “backend”
- Sample Sherpa Session (click icon to view)

VO: What Sherpa Offers

- Complete, Extensible Environment
- Data in Any Waveband
- Robust Fitting, Confidence Limits
- Simulations
- Instrument Models
- Theoretical Models
- TBD: More Optical Models, SED

VO: Sherpa Developments

- SAMP, VOTable Feasibility Study
- Patch (Summer 2010) for SAMP usage
- TBD: GUI for VO Use
- TBD: Web Interface
- TBD: Client Functions for Workflows

<http://cxc.harvard.edu/sherpa>