CHASC: Do it right

Tackling Complex, High-Dim, High-Res problems

Looking to express the underlying simplicity

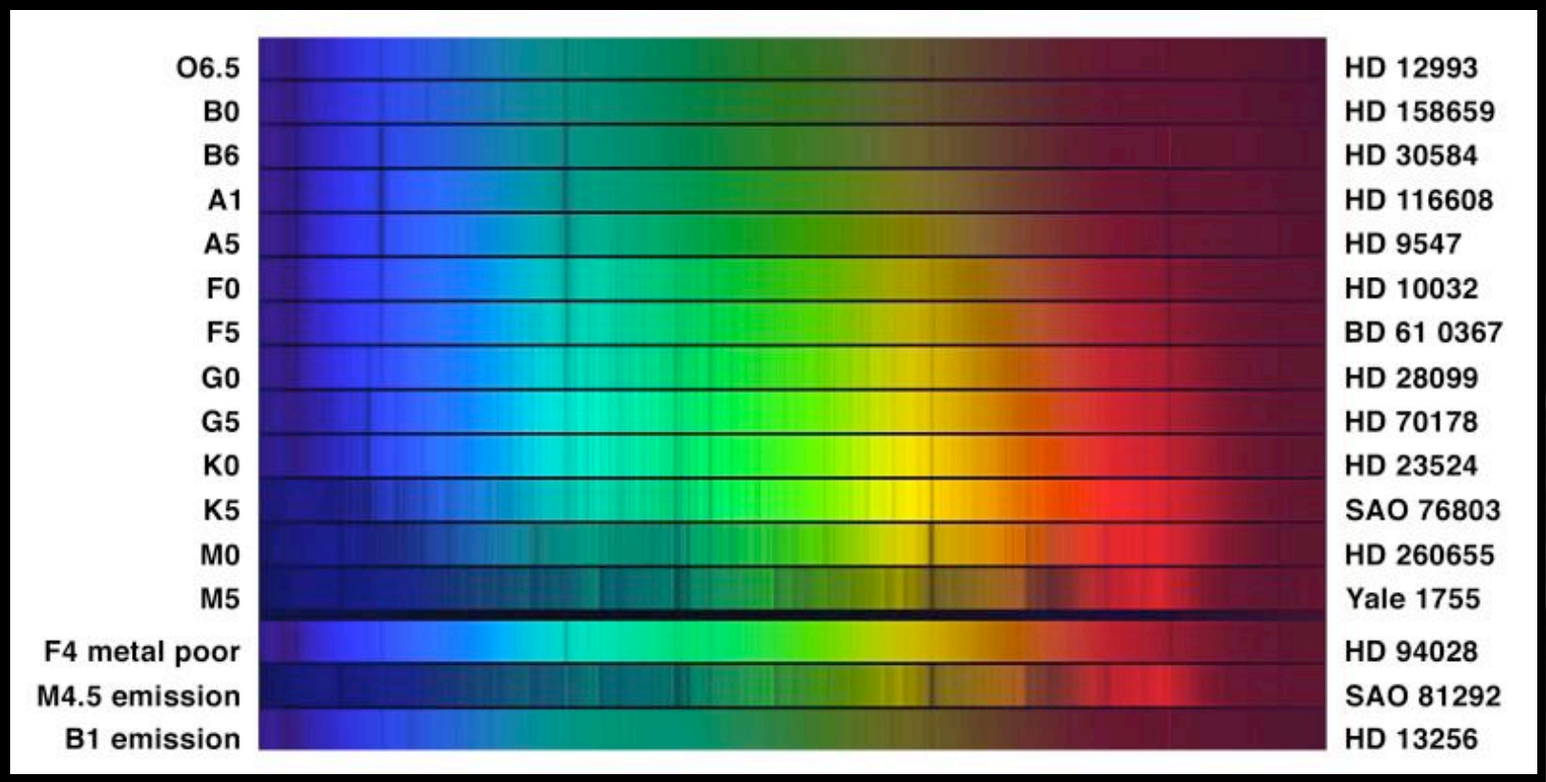
History Sketch:

1/ Hand-crafted -> individual; special cases

2/ Engineering -> Many at once; unwieldy

3/ Larger principles understood -> Simplifying

The Sky of Many Colors Meets Modern Physics



Annie Jump Cannon - Stellar Spectra By Eye and Hand

BIG PICTURE: To Understand the Sky *(or anything else)*:

Physics is about Balance

↓

Data Measurements In/Out of Balance with Model?

↓

New Discovery

In Larger Sense CHASC works on:

Probability ~ Data In/Out of Balance with Models?

Models: Science; Instrument; Statistical

Historically/ Today
Neutron / Dark Matter, Dark Energy:

late 10 The Seventh Solvay Council, Brussels, 1933, which was devoted to the atomic nucleus. [Names from left to right. Seated: Schrödinger, Irène Joliot-Curie,
ohr, Joffé, Marie Curie, Richardson, Langevin, Rutherford, De Donder, Maurice de Broglie, Louis de Broglie, Meitner and Chadwick. Standing: Henriot, Perrin,
rédéric Joliot-Curie, Heisenberg, Kramers, Stahel, Fermi, Walton, Dirac, Debye, Mott, Cabrera, Gamow, Bothe, Blackett, Rosenblum, Erra, Bauer, Pauli, Verschaffelt
front of Cosyns, Herzen, Cockcroft, Ellis, Peierls, Piccard, Lawrence and Rosenfeld.]

Historically/ Today
Neutron / Dark Matter, Dark Energy:

Fermi Team at launch

Instruments: Design, Calibration, Problems

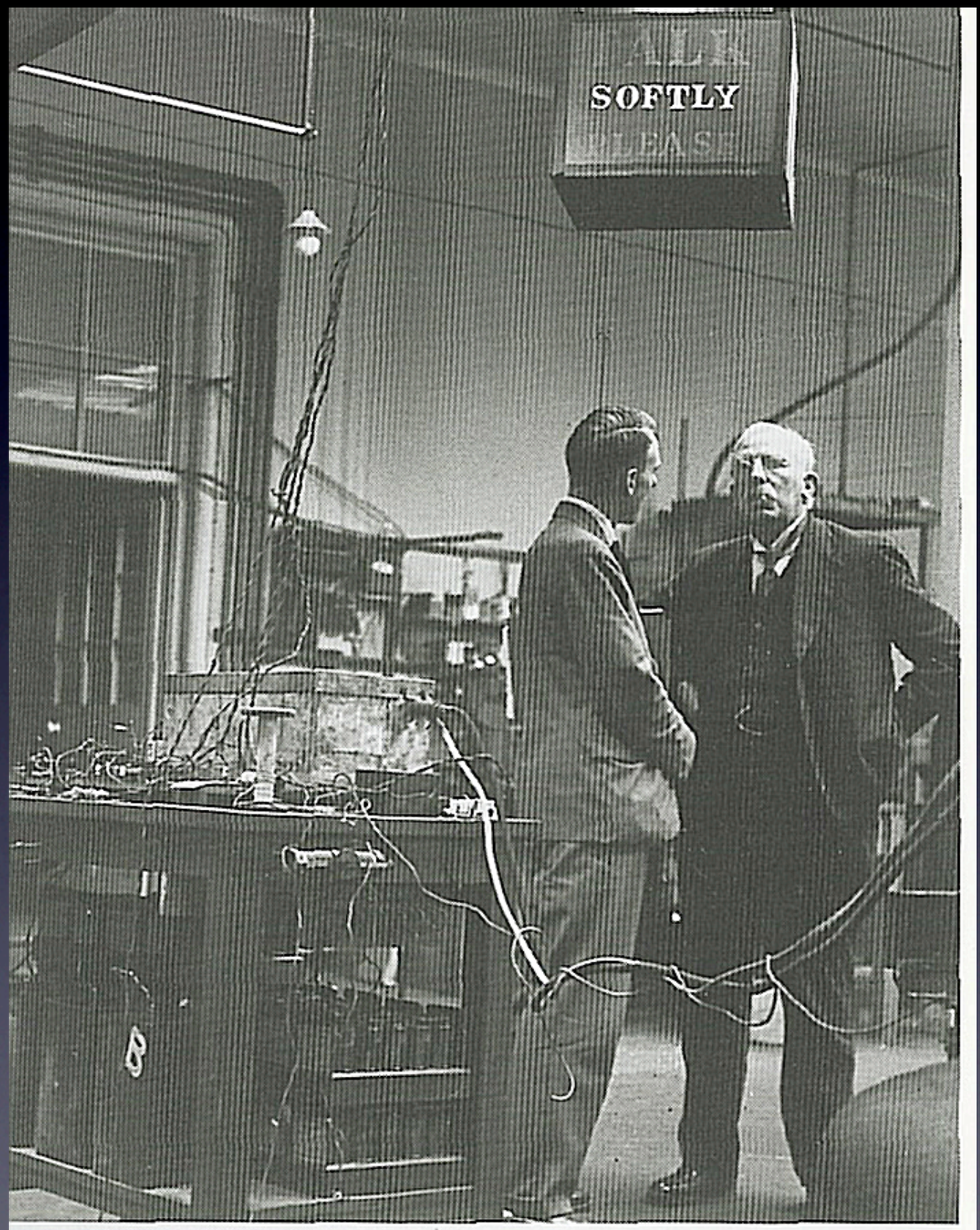
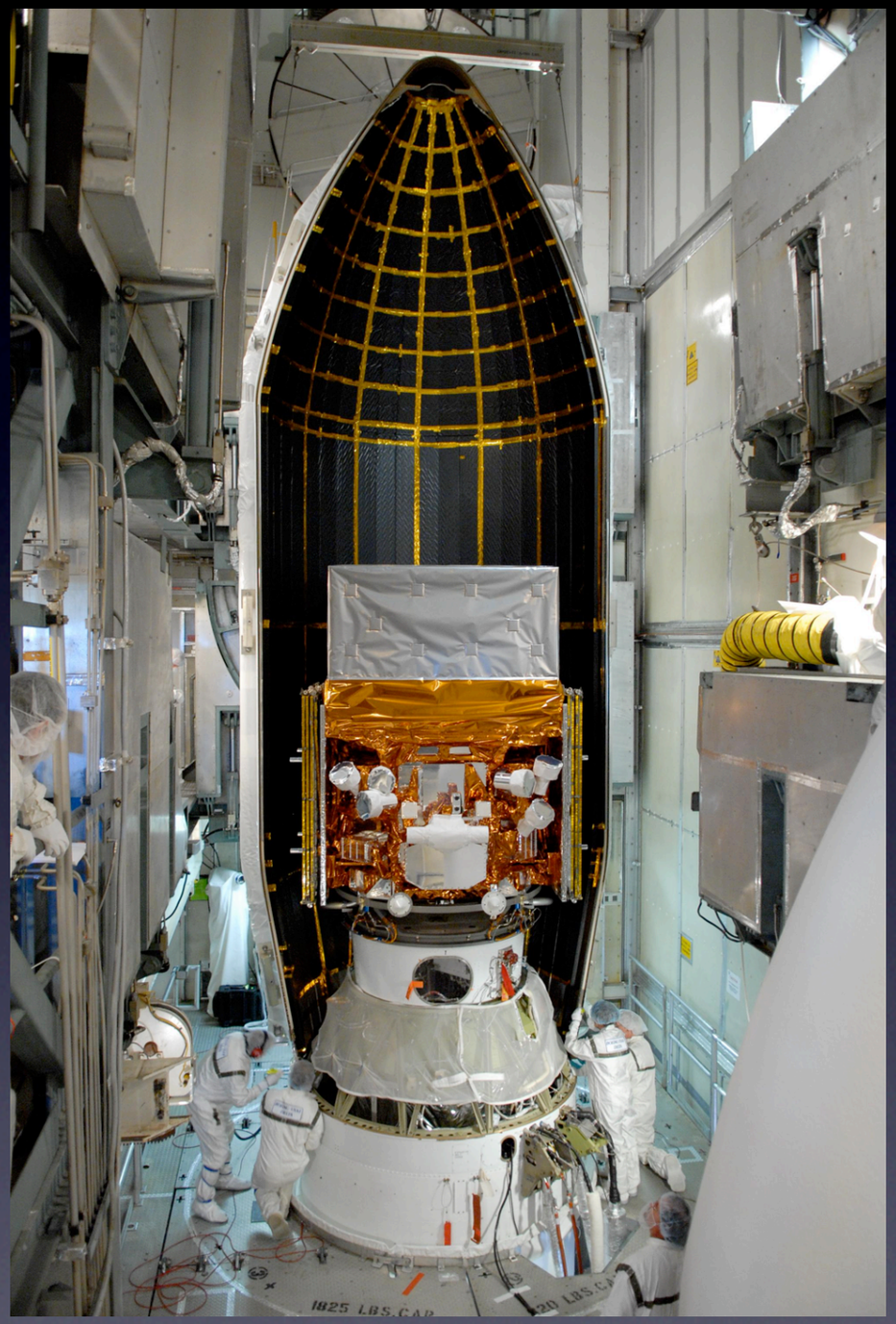
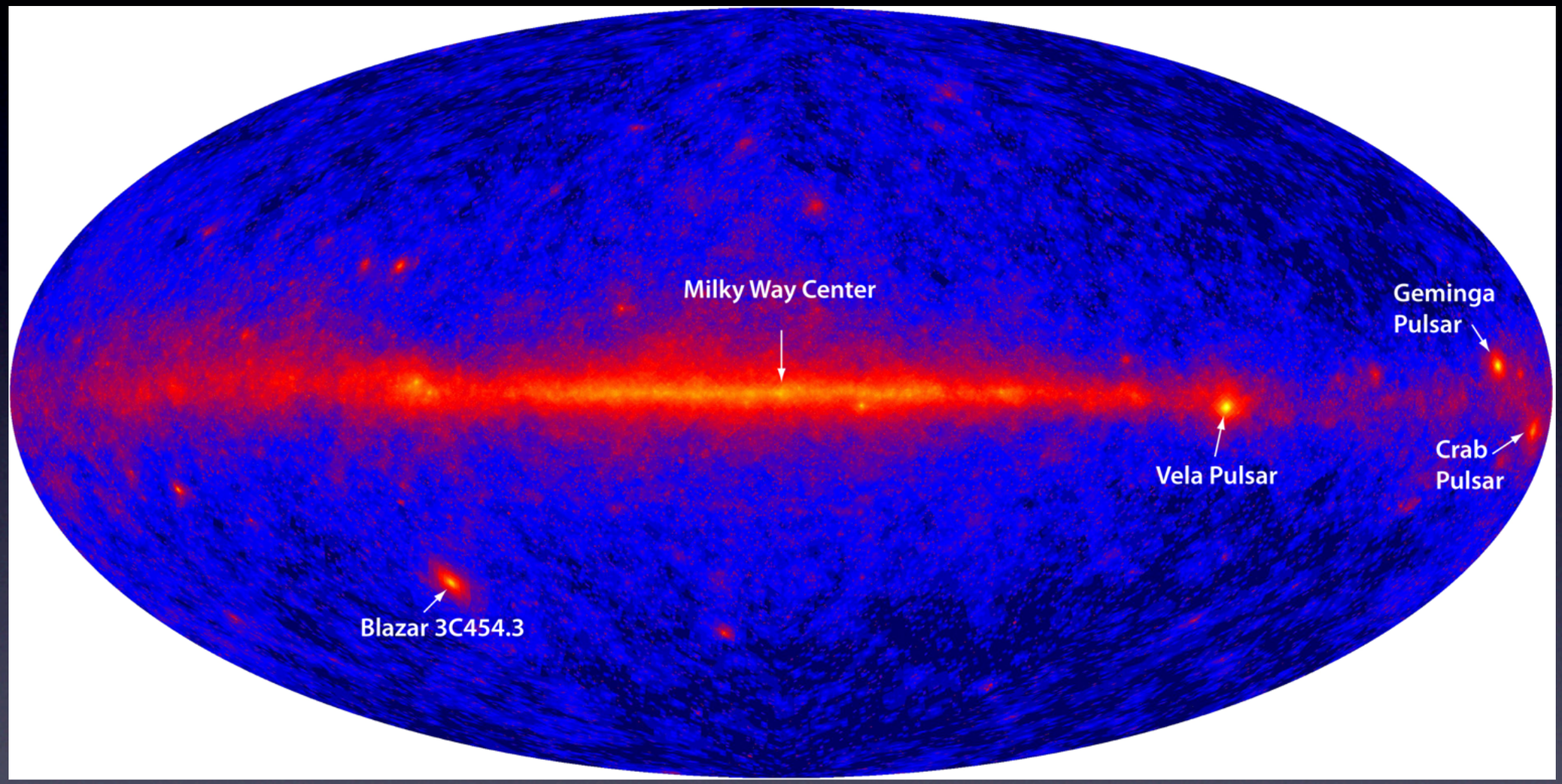


Plate 8 Chadwick's laboratory with its vibration-sensitive equipment was through the open door. Rutherford is talking to J.A. Ratcliffe.

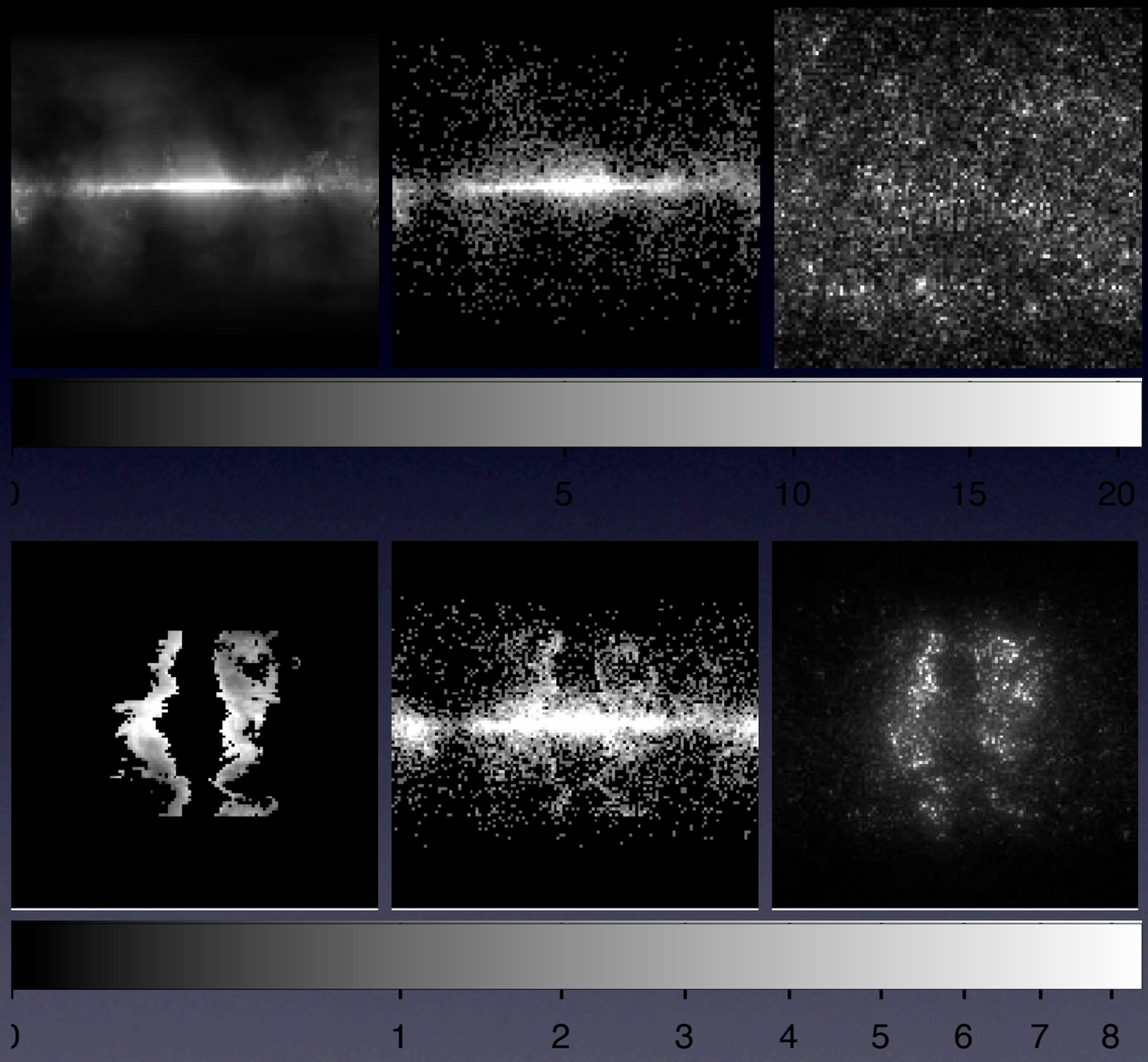
Instruments: Design, Calibration, Problems



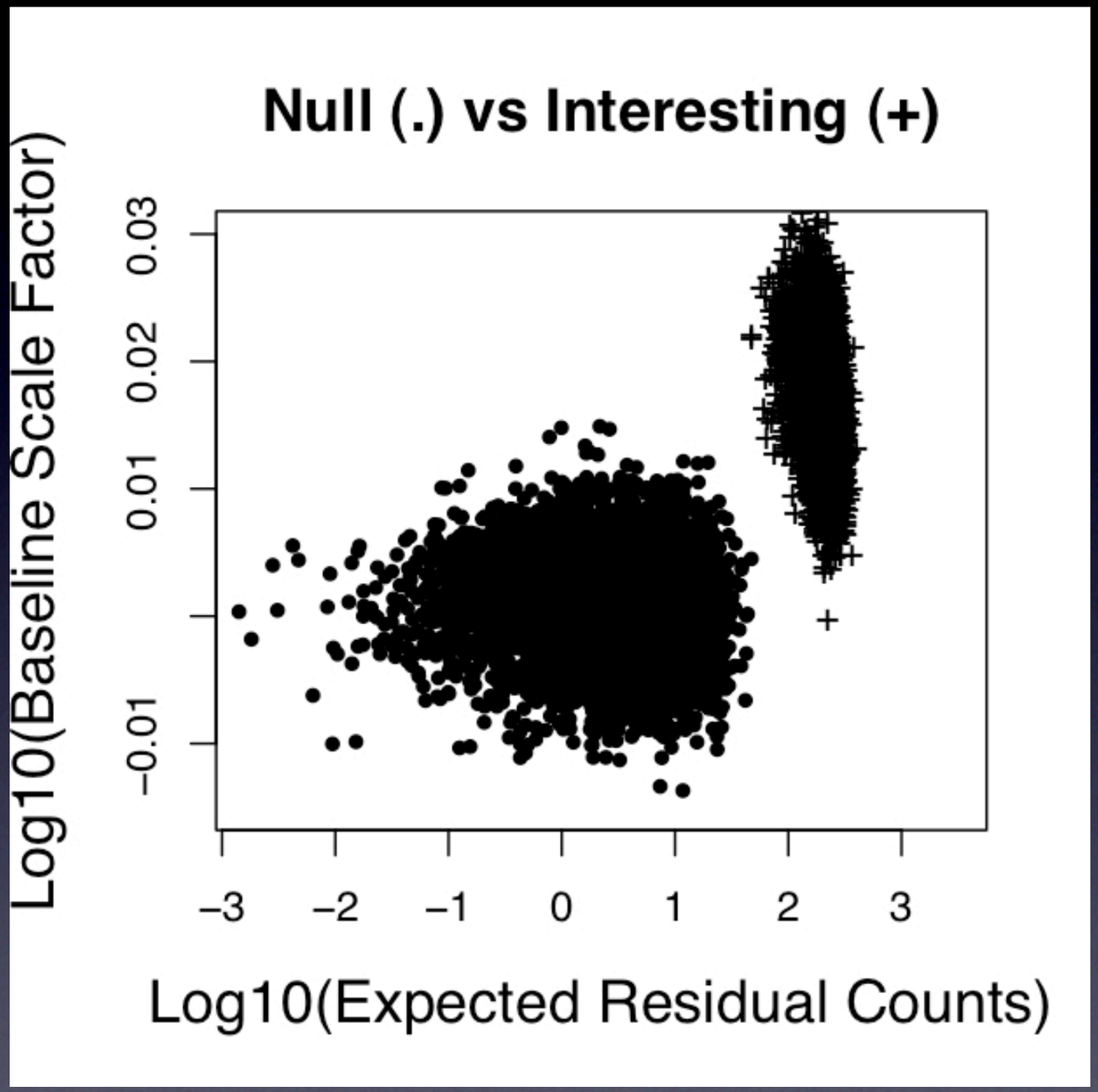
New Data:


Milky Way Center
Geminga Pulsar
Vela Pulsar
Crab Pulsar
Blazar 3C454.3

Model Vs Data ?



Model Vs Data ?



Model Vs Data ?