

Time Series Data Reduction with IRAC

Hosted by the Spitzer Science Center

Sunday June 1, 1:00 - 5:30pm

Great Republic room on the 7th floor of the
Westin Copley Place at the Boston 224th AAS

We invite interested astronomers to participate in an open discussion of instrumental and spacecraft effects and data reduction techniques for warm IRAC high precision photometry of exoplanets and brown dwarfs. The session will start with a set of short talks presenting open questions and features in obtaining the best reduction of precision light curves. Results of the first IRAC high-precision data challenge will be presented and discussed in the second half of the session.

Part I: Spitzer light curve forum (~125 minutes)

0. Introduction (5)
1. Centroiding (15+5)
2. Spacecraft motion (10+5)
3. PCRS pickup effectiveness (5+5)
4. Variable noise pixels (15+5)
5. Results of applying gain maps (10+5)
6. How to quantify how well the different data reduction techniques are working? (20+5)
7. Summary / what other questions should we be asking (15)

Break (30 minutes)

Part II: Data challenge (~90 minutes)

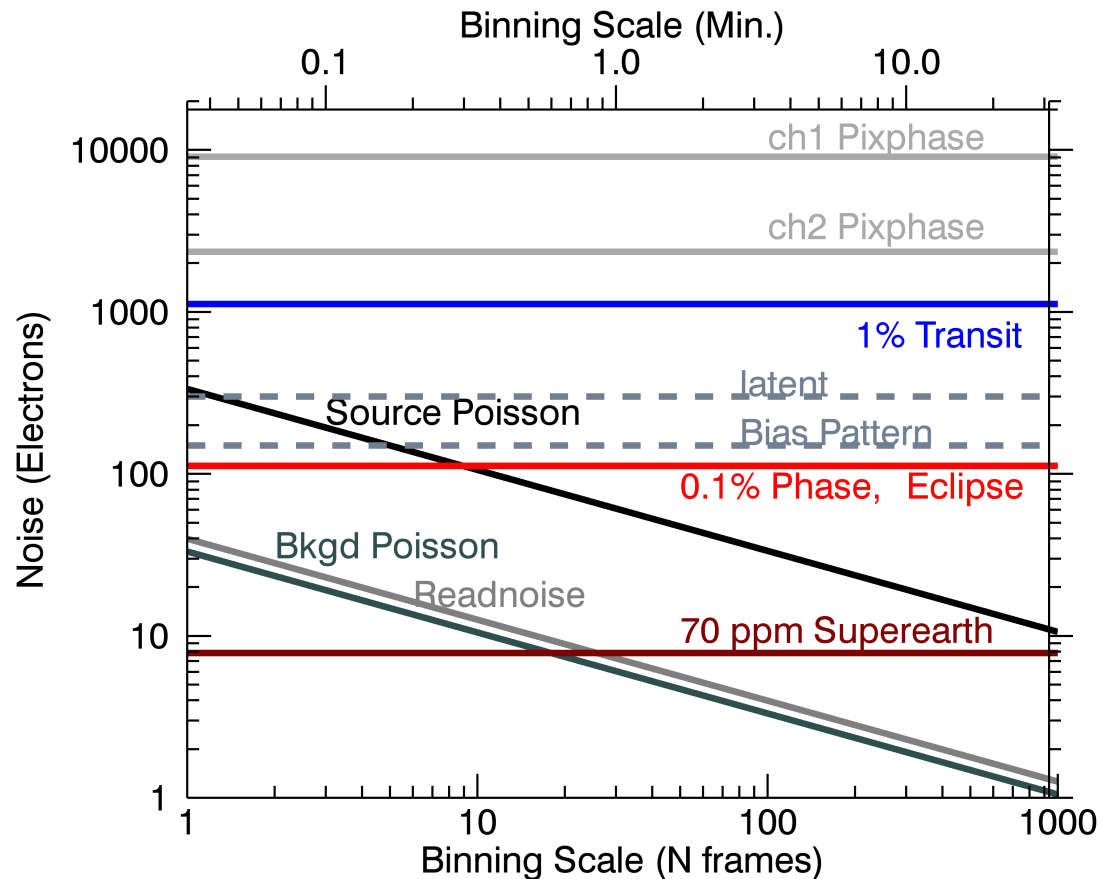
1. Description of challenge (10)
 - What we want to achieve
 - What the test cases are
2. Details of simulated data (20)
 - Model effects
 - Physical light curve parameters
3. Results of challenge (40)
 - What worked
 - What didn't
 - Is there anything optimal?
4. What should we do next? and wrap-up (20)
 - Do we do another one of these and when?



Time Series Data Reduction

- Welcome!
- Spitzer status update
- Goals of this discussion
 - Understanding of time series data
 - Future directions
 - “Best Practices” publication online and maybe PASP

The Big (little) Picture*



*Stellar variability can be anywhere on this plot