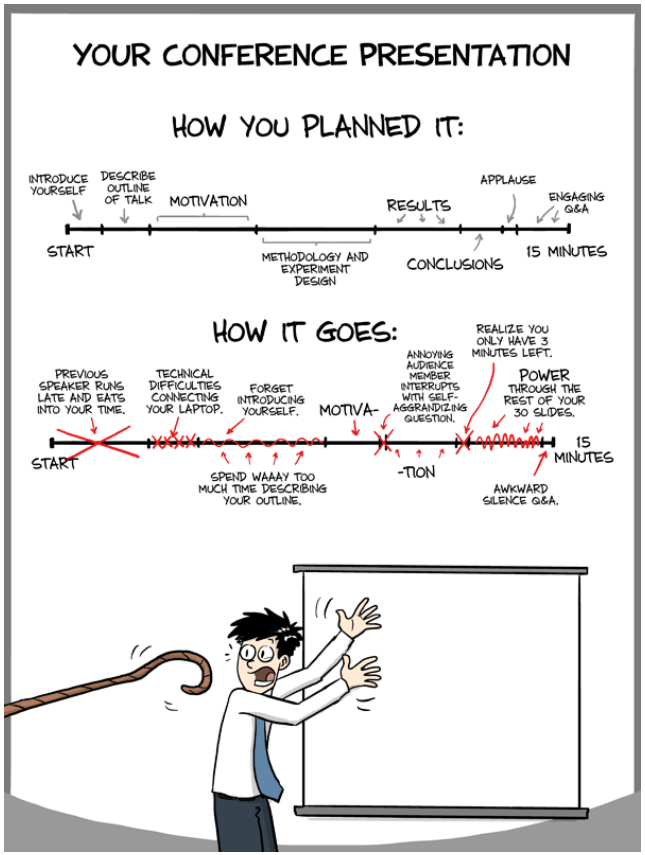
An Introduction to Presentations

Eddie Schwieterman – Pre-MAP Seminar – 11/24/2014



Why give talks?

- Succinctly communicate scientific results to a large audience
- Opportunity for critical evaluation
- Opportunity for discussion
- Advertise yourself and your science

Key Components

- Title Slide
- Introduction & Background
- Motivation → What question(s) are you trying to answer?
- Methods
- Results/Analysis
- Conclusions and/or Future Work
- Questions & Answer

Introducing a Topic

- What object or process are you studying?
- Why is it interesting?
- What was known before?
- What specifically do we want to know now? How is that related to larger scientific questions?
- E.g, “Detecting N_2 directly through spectroscopy would help us constrain surface pressure, which would allow us to better understand the habitability of Earth-like exoplanets.”

Methodology

Yeah, you spent most of your time coding. No one really wants to hear about this.

- How did you pursue your question? What models or techniques did you use?
- E.g., “In order to measure X, we used model Y and analyzed the synthetic data with technique Z”
- Use equations sparingly
- Spend only as much time as necessary to establish the credibility of your results

Presenting Results

- Should be bulk of your talk
- Use descriptive titles
- Use plots, figures, diagrams, etc. to illustrate your results
- Bring back to motivating questions

Conclusions & Future Work

- Summarize succinctly what you found and its relevance based on your motivating questions
- What does this mean for other fields?
- What is still left to know?
- What limitations does your current work have, and how will it be addressed in the future?

Avoid These Things

- Paragraphs of text
- Cluttered slides
- Unlabeled axes
- Figures that are too small, too faint, or at too low a resolution
- Painful color/text schemes
- Bullet point lists that are too long ;)

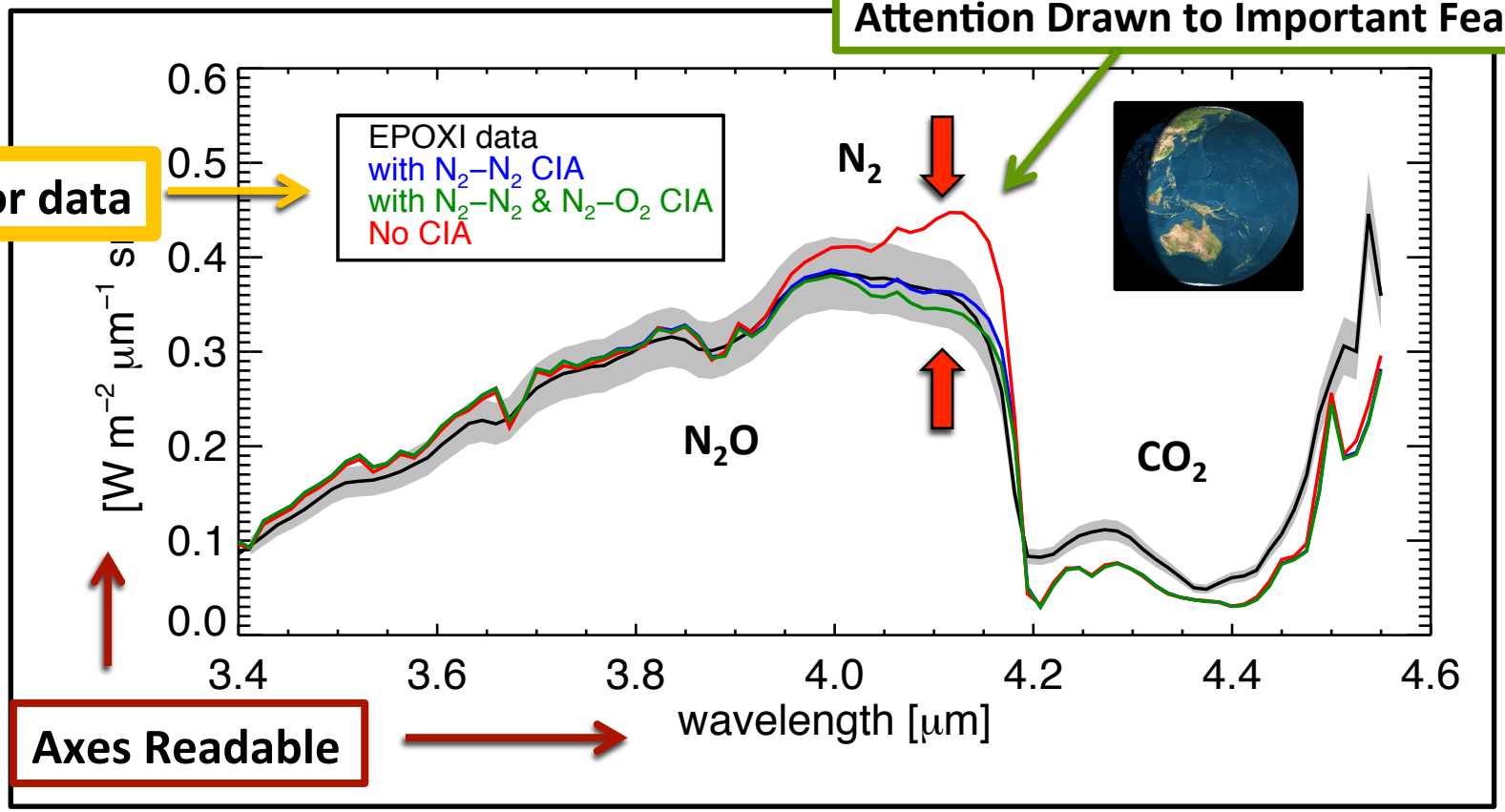
Good Slide Example

Descriptive Title

N_2 direct detection

Attention Drawn to Important Feature

Key for data



Axes Readable

Schwieterman et al., in prep

Validation: N_2 directly detected in Earth's disk-integrated spectrum

Bad Slides Example

Comet Project Steps

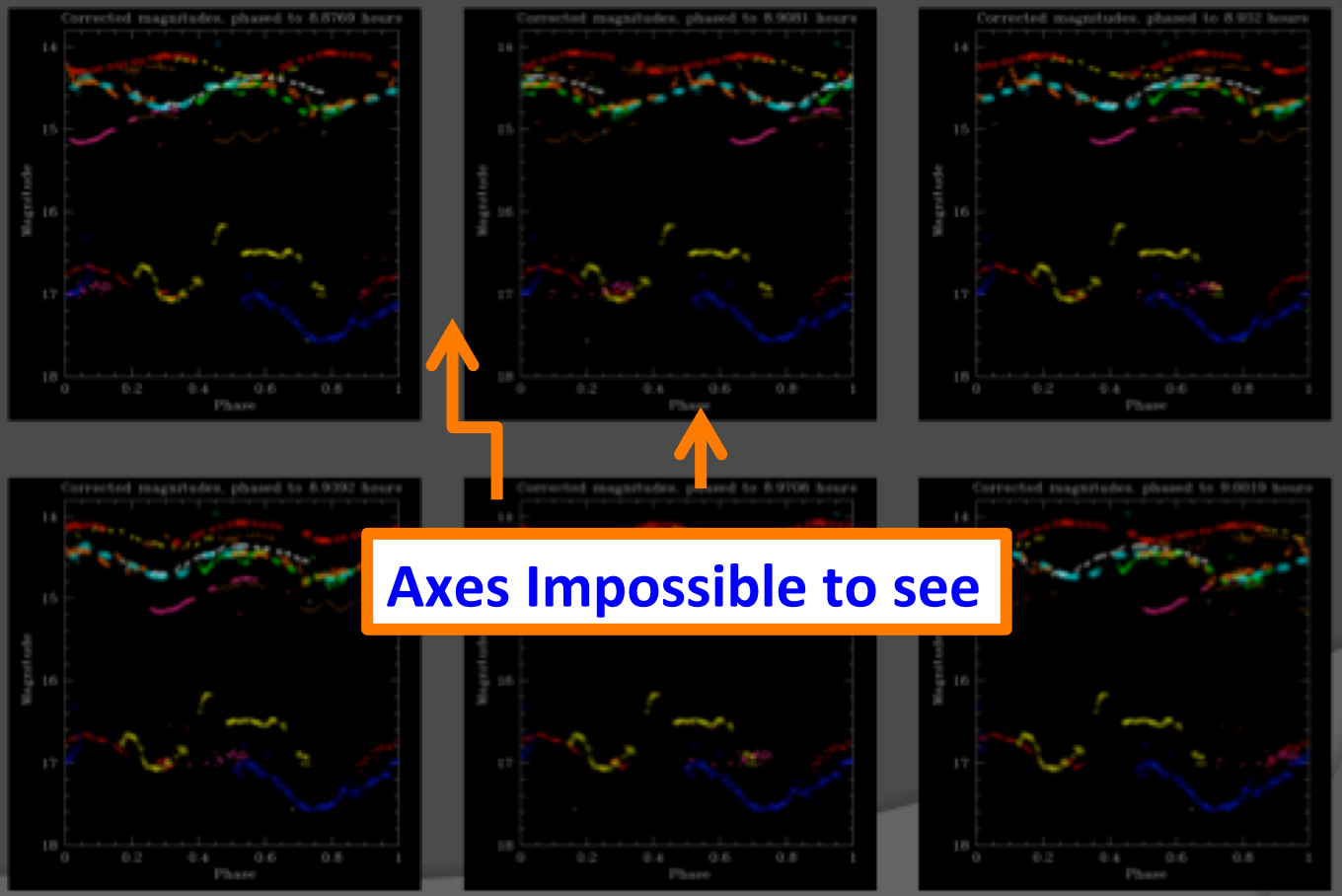
Vague Title

- Image Reduction - Bias, Flats, Processing
- Standard Star Photometry
- Extinction Calculations
- Instrumental Mag. Calculations
- Comet Photometry
- Comparison Star Photometry
- Phase Analysis
- Fourier and PDM Analyses
- Plotting
- Cometplications!

Tedious List of Steps

Bad Pun

Phasing 1988 and 1999 solutions to our data



Too many subplots

Poor color contrast

Axes Impossible to see

Common Speaking Mistakes

- Spending too much time on intro/methods
- Rushing through results/conclusion
- Speaking too fast
- Exaggerated hand motions
- “Um”, “like”, mumbling

Some Other General Tips

- Tell a story (have a narrative)
- Practice (several times with a timer)
- Plan 1 minute/slide