

How to give a good scientific presentation and not bore your audience*

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* In my opinion, and with the help of numerous resources.

Draw from experience

Think about presentations you liked.

From time to time, analyze a presentation you are attending.

Seminar BINGO!

To play, simply print out this bingo sheet and attend a departmental seminar.

Mark over each square that occurs throughout the course of the lecture.

The first one to form a straight line (or all four corners) must yell out **BINGO!!** to win!



SEMINAR B I N G O

Speaker bashes previous work	Repeated use of "um..."	Speaker sucks up to host professor	Host Professor falls asleep	Speaker wastes 5 minutes explaining outline
Laptop malfunction	Work ties in to Cancer/HIV or War on Terror	"... et al."	You're the only one in your lab that bothered to show up	Blatant typo
Entire slide filled with equations	"The data <i>clearly</i> shows..."	FREE Speaker runs out of time	Use of Powerpoint template with blue background	References Advisor (past or present)
There's a Grad Student wearing same clothes as yesterday	Bitter Post-doc asks question	"That's an interesting question"	"Beyond the scope of this work"	Master's student bobs head fighting sleep
Speaker forgets to thank collaborators	Cell phone goes off	You've no idea what's going on	"Future work will..."	Results conveniently show improvement

JORGE CHAM © 2007

“Respect your audience.”

“Give the talk that you would like to hear.”

“Explain, convince, entertain.”

“A little bit of fun is OK, as long as 90% is serious.”

Three stages

1. Preparation
2. Making slides
3. Practice

Preparing your talk

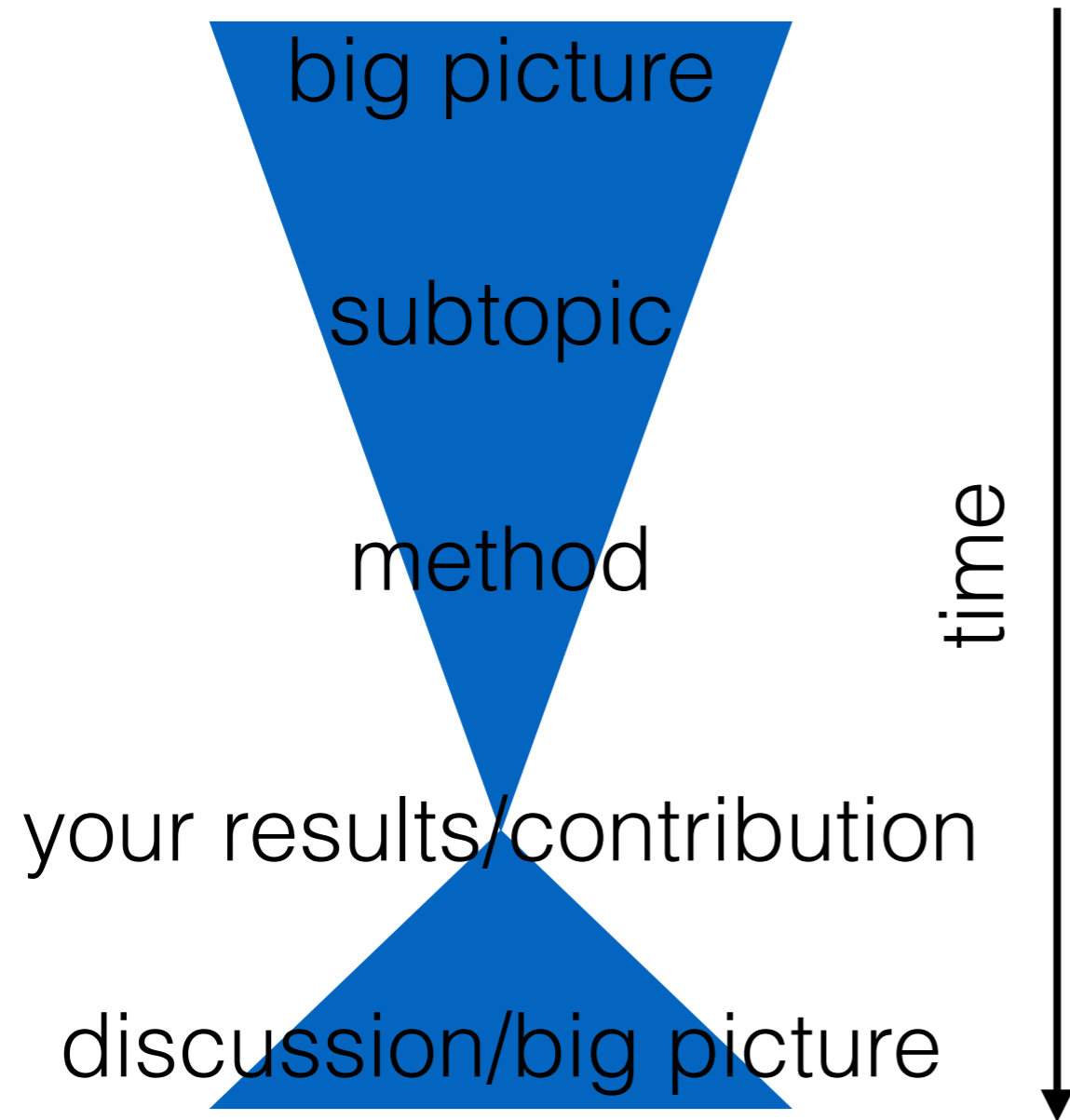
Think about the audience, and their level.

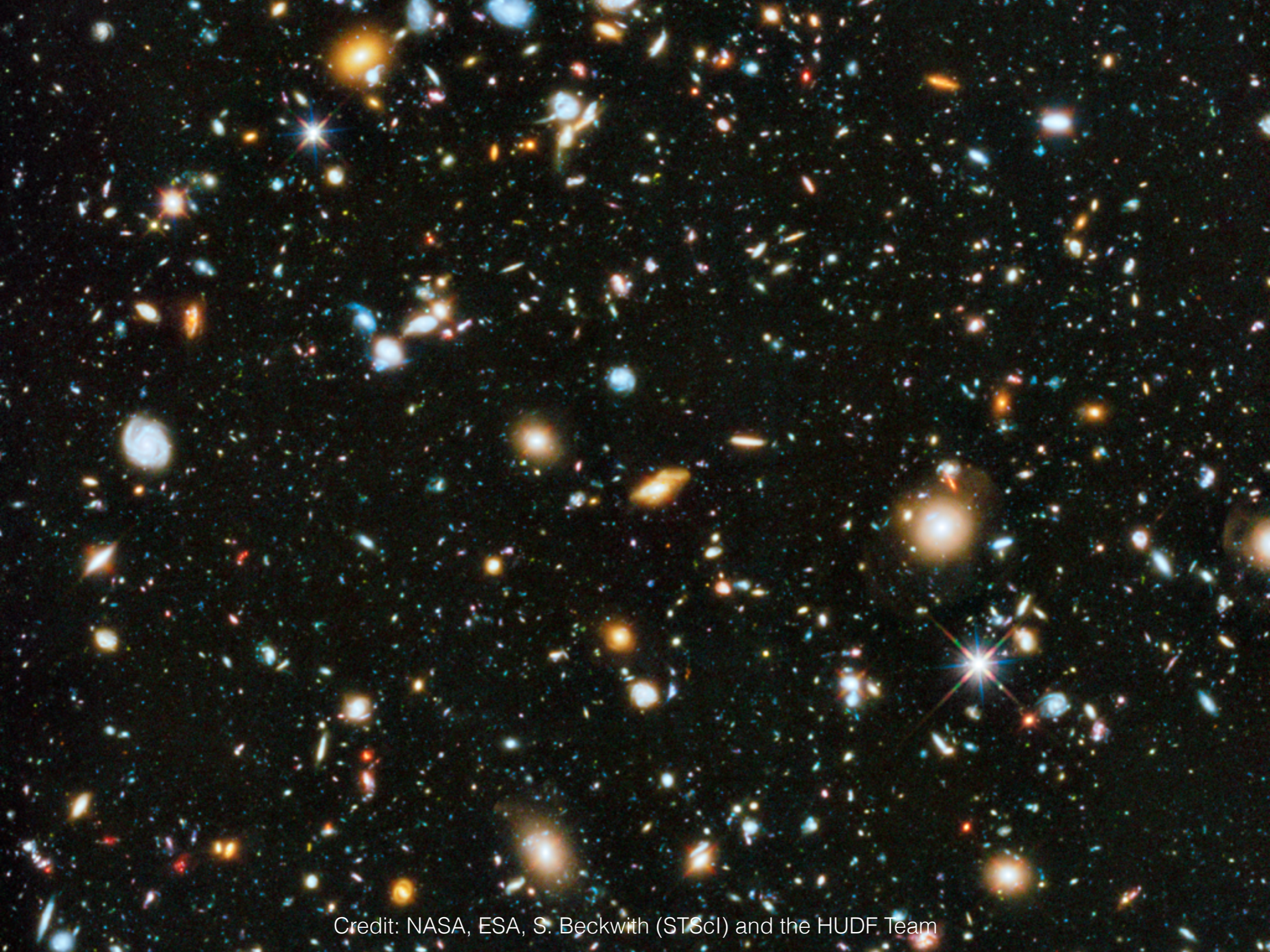
Think about point you want to get across. Think of a one-sentence summary that the audience should take home.

Think about the story you want to tell, can even go as far as writing down the one key sentence per slide!

Use a maximum of about 1 minute per slide.

Structure





Credit: NASA, ESA, S. Beckwith (STScI) and the HUDF Team

[catchy title]

[your name]

[optional: image that represents information]

[your collaborators]

[article on which the talk is based]

Introduction

Ask a question

Pose a stimulating thesis

Relate to recent events (e.g. discovery of gravitational waves)

Use a practical example

Font

- Don't switch around fonts; can use different font for title and text though. Use a sans serif font.
- I tend to write text in ~ 36 pt, and titles bigger.
- I try to never go smaller than 24 pt.
- I sometimes use 18pt for references, if it fits better on a page, but you can see that 18pt is very small already!
- But *never* use a smaller fonts (this is 14pt).
- Please don't use 12pt fonts.

Colors

Use contrasting colors for background and text. In my opinion black on white, or white on black works best.

Feel free to invert the color scheme on one slide if it suits a certain image better.

I don't like background images, because they are distracting.

Can use two or three more colors to lay emphasis, but best be consistent with the colors throughout the presentation.

Colors

Don't use **green** and **yellow**.

1/10 men are color-blind and can not distinguish:

- **Red** from **Green**
- **Blue** from **Purple**

Abbreviations

Never use abbreviations unless you are absolutely certain everyone in the audience is working in the field, or unless abbreviations are absolutely necessary to make your lay-out work.

Equations

Never use equations; unless there is an actual genius in the audience, no one will have time to comprehend the equation.

Using proportionality is fine, and can be useful,
e.g.:

$$A \propto B^2$$

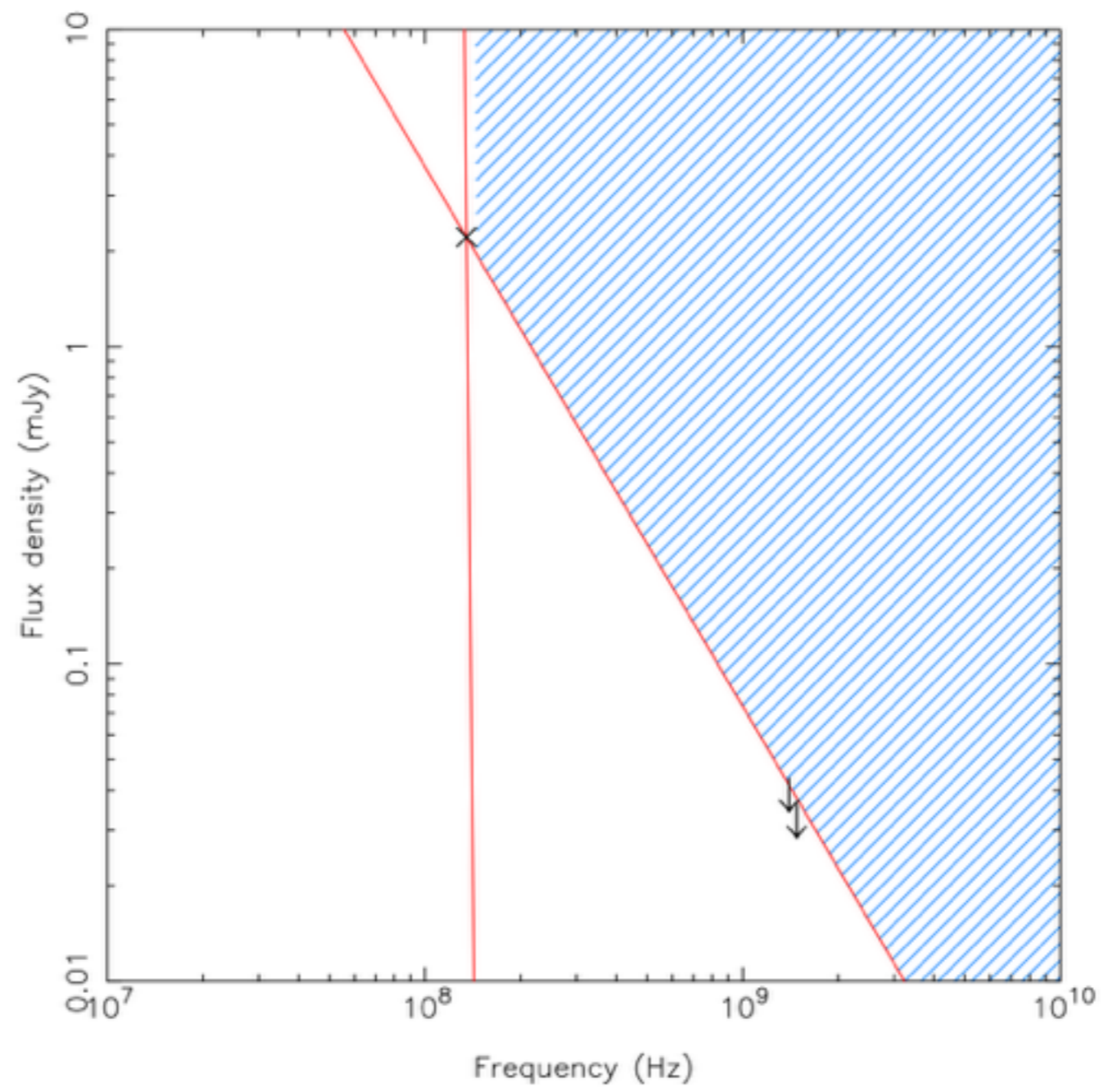
(I use 'LaTeXiT' to make equations for presentations.)

Research figures

Major pitfalls: text on axis is unreadable, there is too much information on the figure, or the feature you want to point out is hard to see.

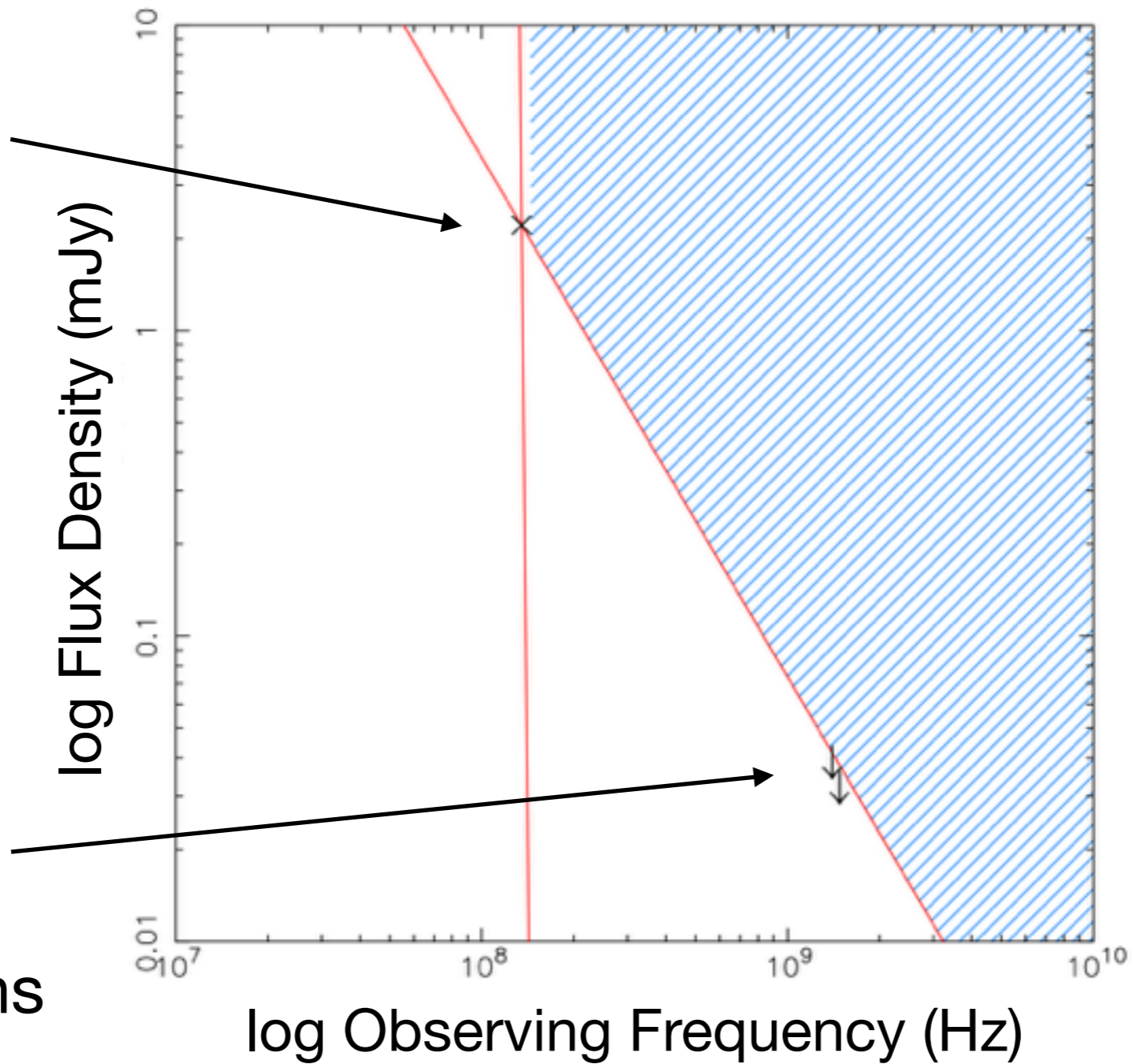
Tip: when making a figure for your thesis/paper, immediately make it for a presentation, with thicker lines, bigger font size, etc. (can do this with a settings file in pyplot).

Say what's on the axis of each plot!



LOFAR
135 MHz
discovery

Lovell &
Nançay
L-Band
non-detections

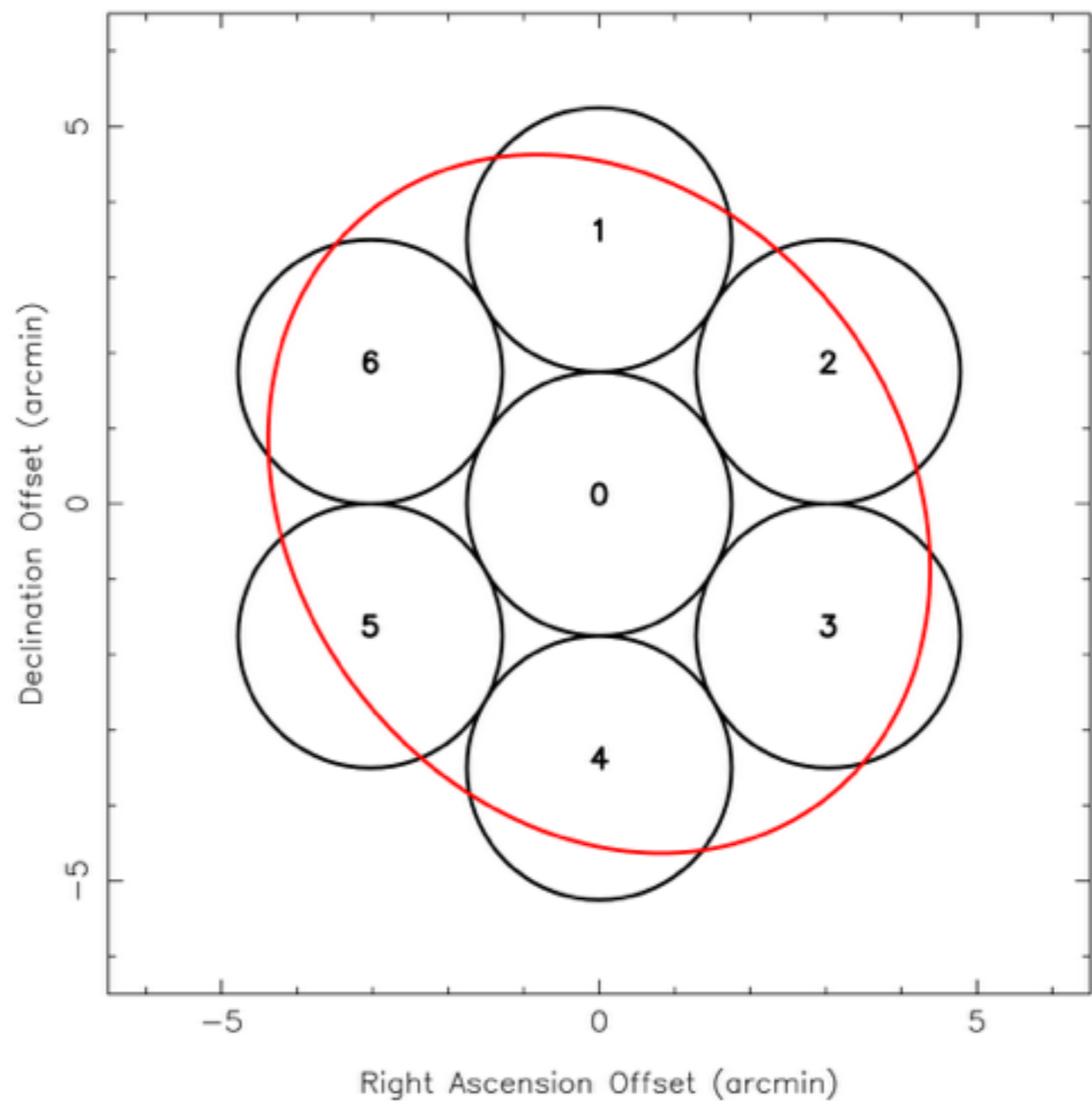


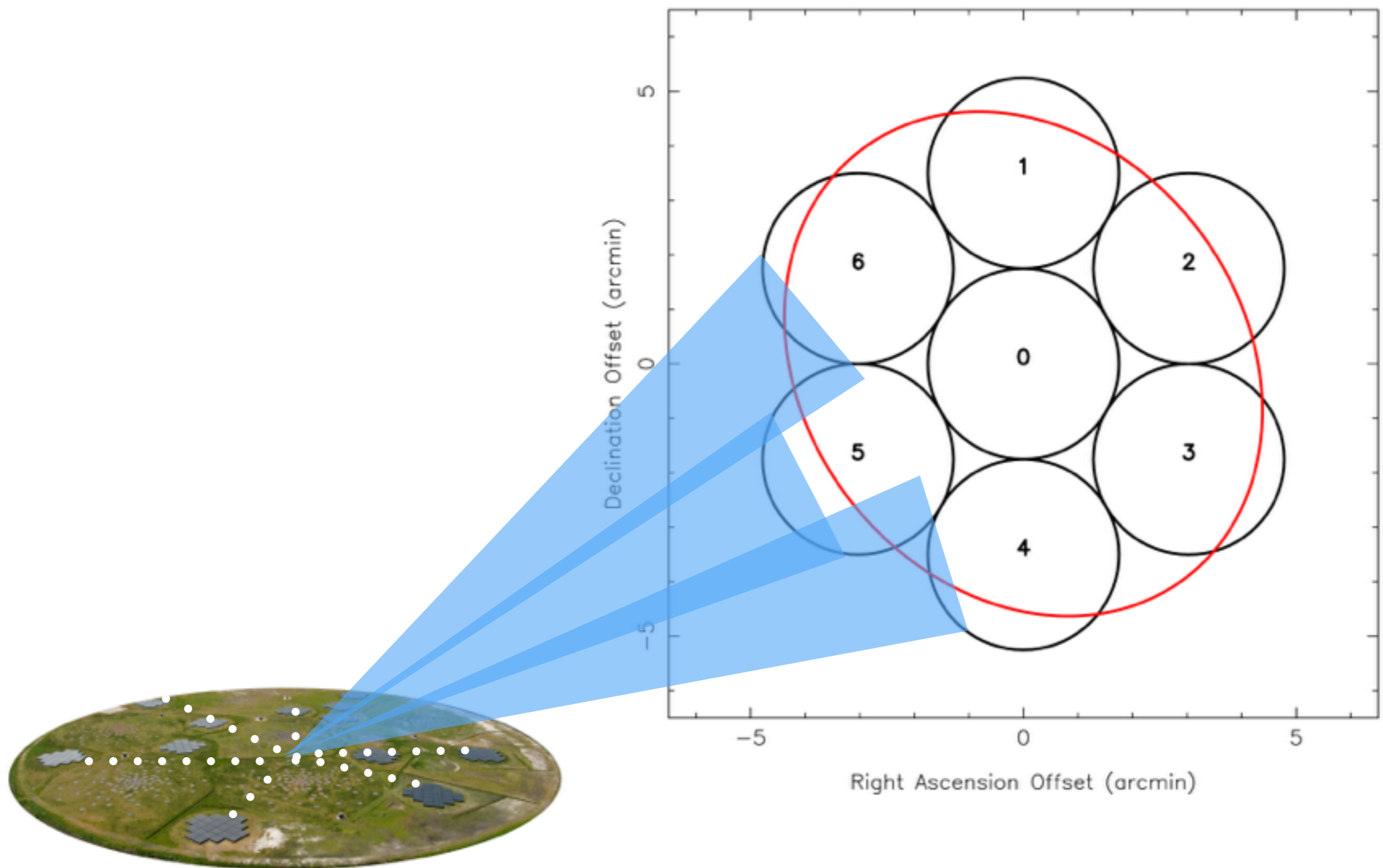
(NB This is not a good figure for a presentation, I should have used thicker lines.)

I like drawings and playing with images
if they help to get the point across!

Close to impossible if you use LaTeX beamer, but
very easy with Keynote or Powerpoint.

Remember that part of your audience thinks more
visually, and part of your audience thinks more
verbally, and you have to try to satisfy all of them!





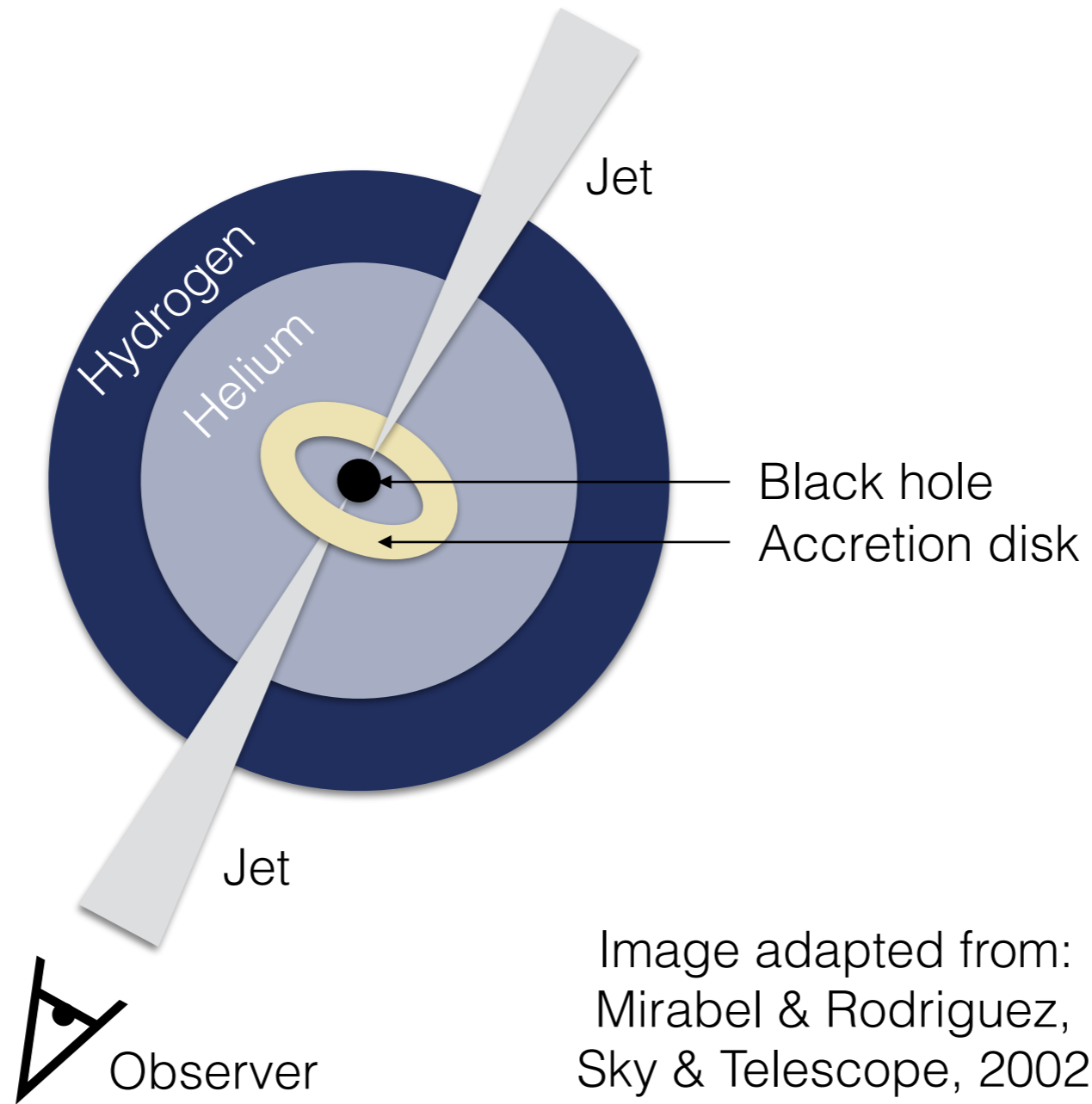
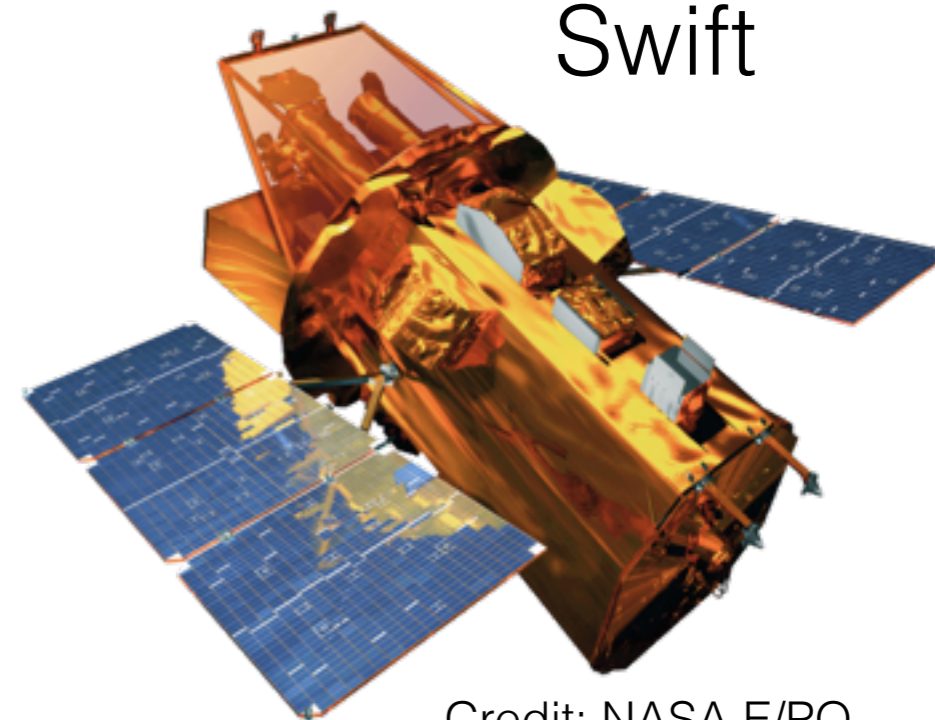


Image adapted from:
Mirabel & Rodriguez,
Sky & Telescope, 2002

Swift



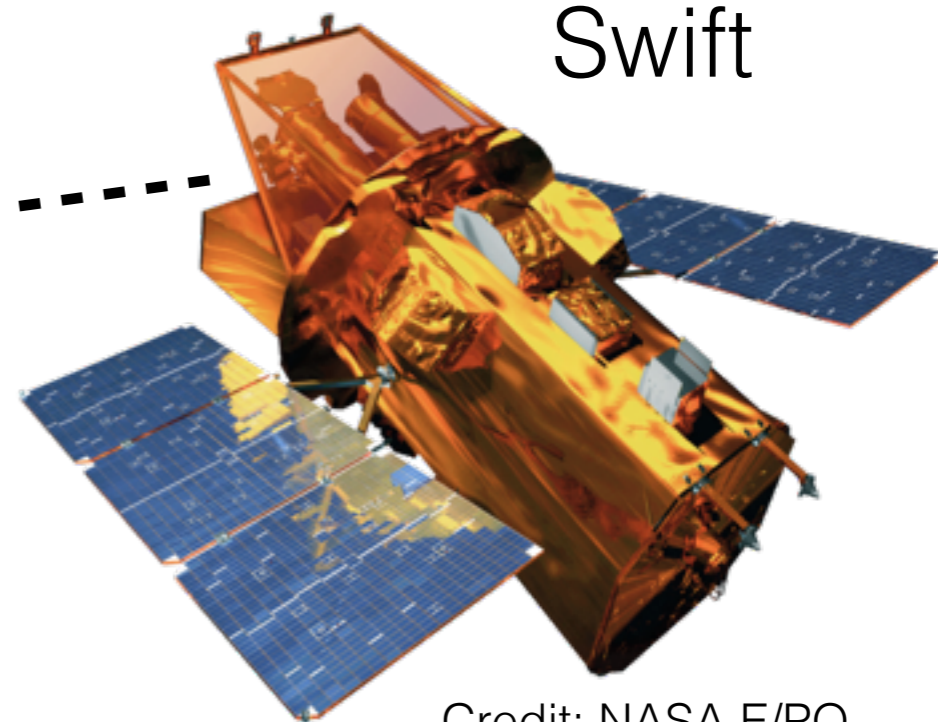
Credit: NASA E/PO,
Sonoma State University/
A. Simonnet





GRB

1.



Swift

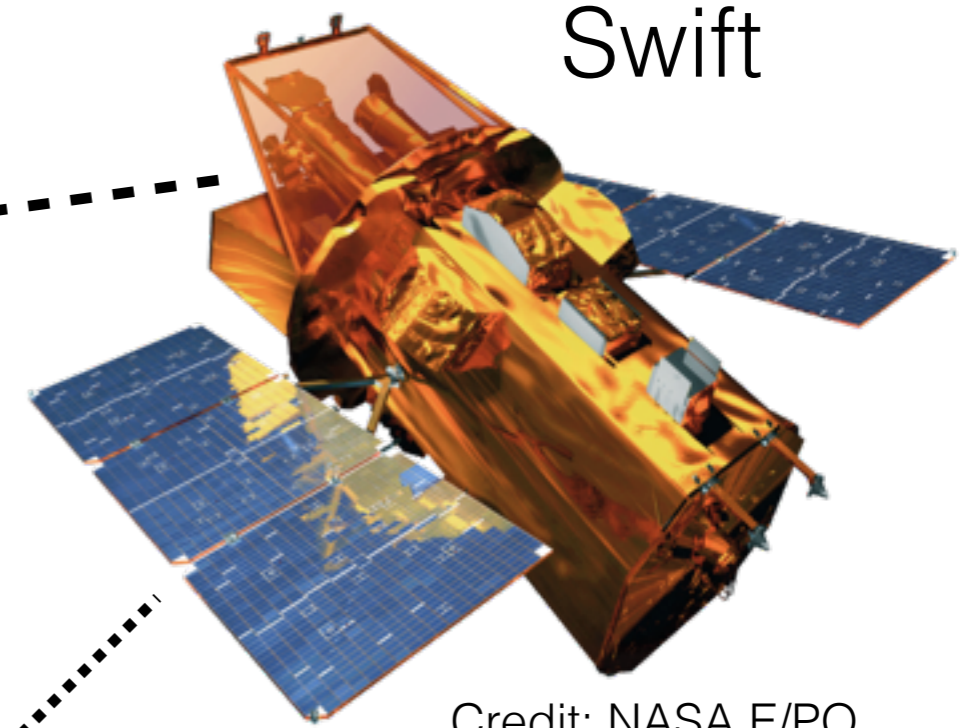
Credit: NASA E/PO,
Sonoma State University/
A. Simonnet





GRB

1.

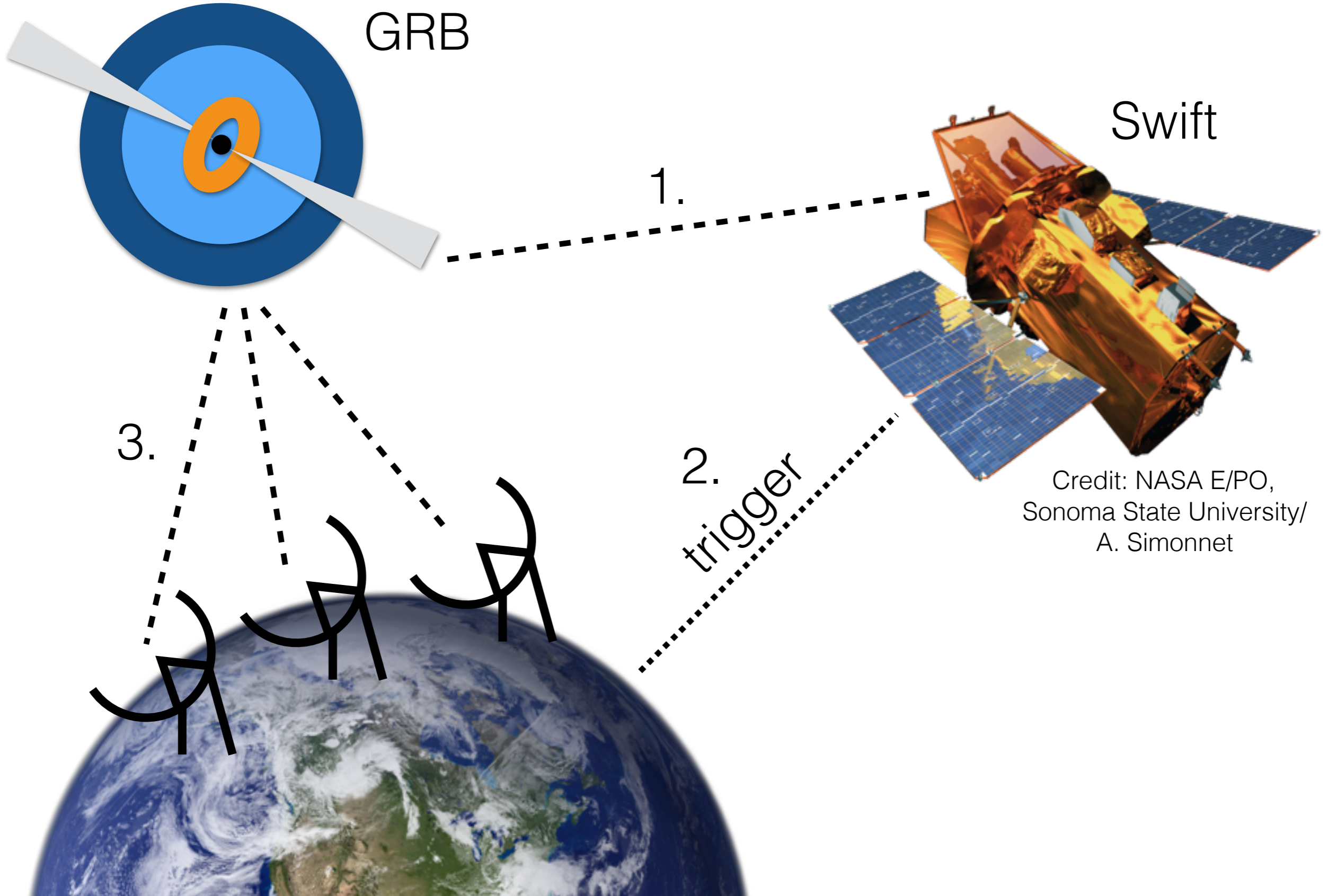


Swift

2.
trigger

Credit: NASA E/PO,
Sonoma State University/
A. Simonnet





GRB

Swift

Credit: NASA E/PO,
Sonoma State University/
A. Simonnet

References

My preference: on slides, in a format that the audience is able to write down quickly.

E.g., Einstein et al. (1915), Einstein+ (1915), Einstein,
Nature (2011),

Final slide

Finish on summary; easy for questions.

One tweetable sentence.

Prepare a final sentence, so you don't end on "well, ehm, I guess that's it..".

Making a circle with your introduction always works!
Can even go so far as reusing your introduction slide and explaining how your research added to the understanding of the major problem in astrophysics.

Practice, practice, practice...

Practice your talk a couple of times, you'll see what works and what doesn't.

If possible, practice with someone in the audience.

Run through the slides on a projector to see if everything looks as intended.

Giving the talk

Have a backup .pdf somewhere online, so you can show the presentation on someone else's laptop worst case scenario.

Arrive on time.

If you use a remote or laser pointer, check how it works *before* the talk!

People will likely see your desktop when you plug your laptop in: remove personal images from the background, disable the screen-saver, remove music downloads and other personal files.

I always try to turn my wi-fi off.

Avoid wearing distracting clothes!

Giving the talk

Use signalling language:

“This is an important point...”

“This plot is the bottom line...”

“What I hope you can see from this slide is...”

Questions

Try to think of obvious questions ahead of time.

You can say that you don't know something! "That's interesting! Let me think about it and get back to you!"

Can gracefully refer to an expert in the audience. :)

References

<https://fys.kuleuven.be/ster/meetings/francqui/kurtz-2006-aspc-349-435k.pdf>

http://neutrino.physics.wisc.edu/teaching/PHYS736_2010Spring/Conrad_slides.pdf

http://www.cgd.ucar.edu/cms/agu/scientific_talk.html

<http://crosstalk.cell.com/blog/tips-for-giving-a-successful-scientific-presentation>

<http://www.planetary.org/blogs/emily-lakdawalla/2013/04040850-better-conference-talks.html>