

# Academic Communication

*in (Astro)Physics*

## Lecture 11: Presenting Skills I

How to give a great talk

# Step 1: your conference abstract

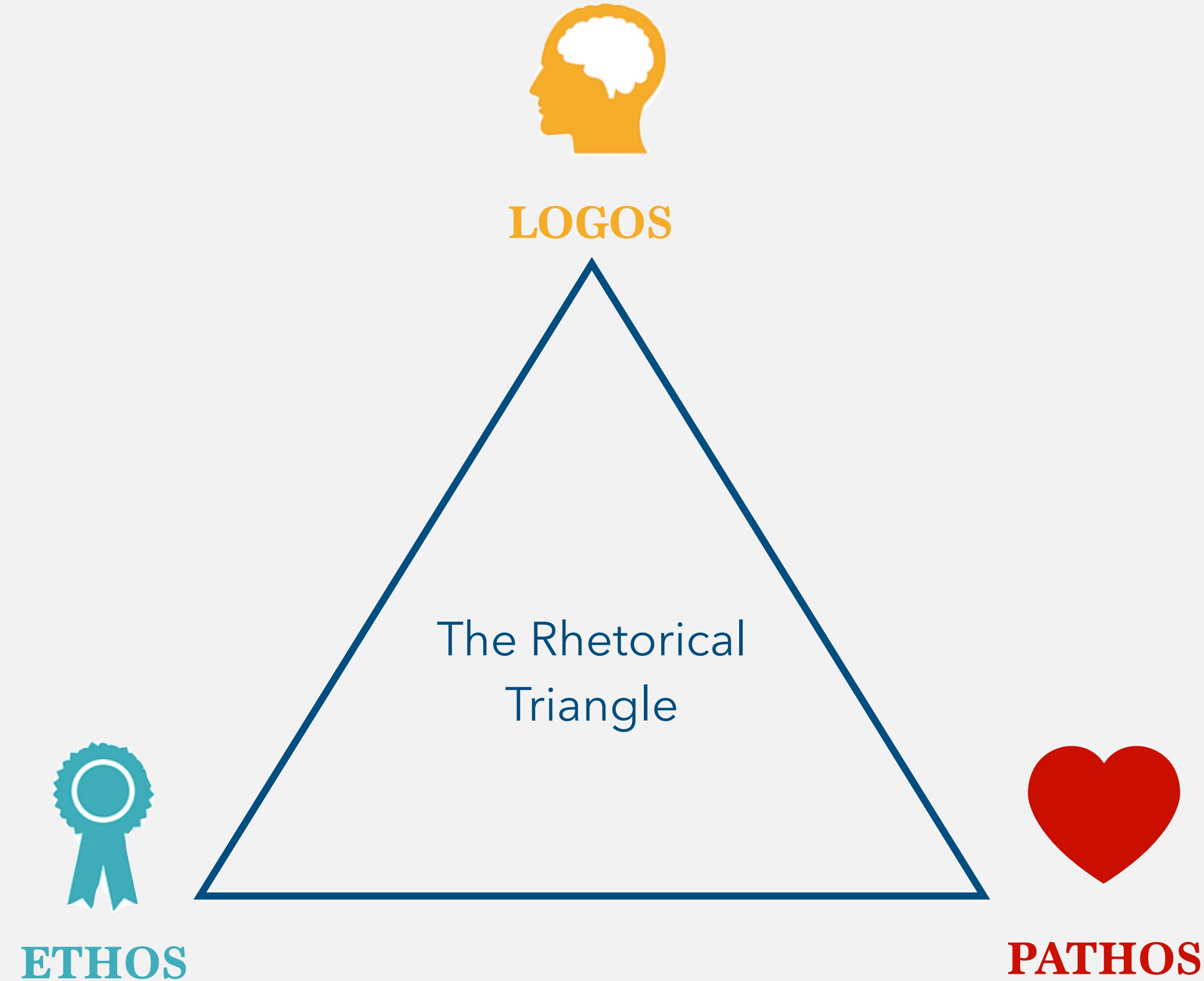
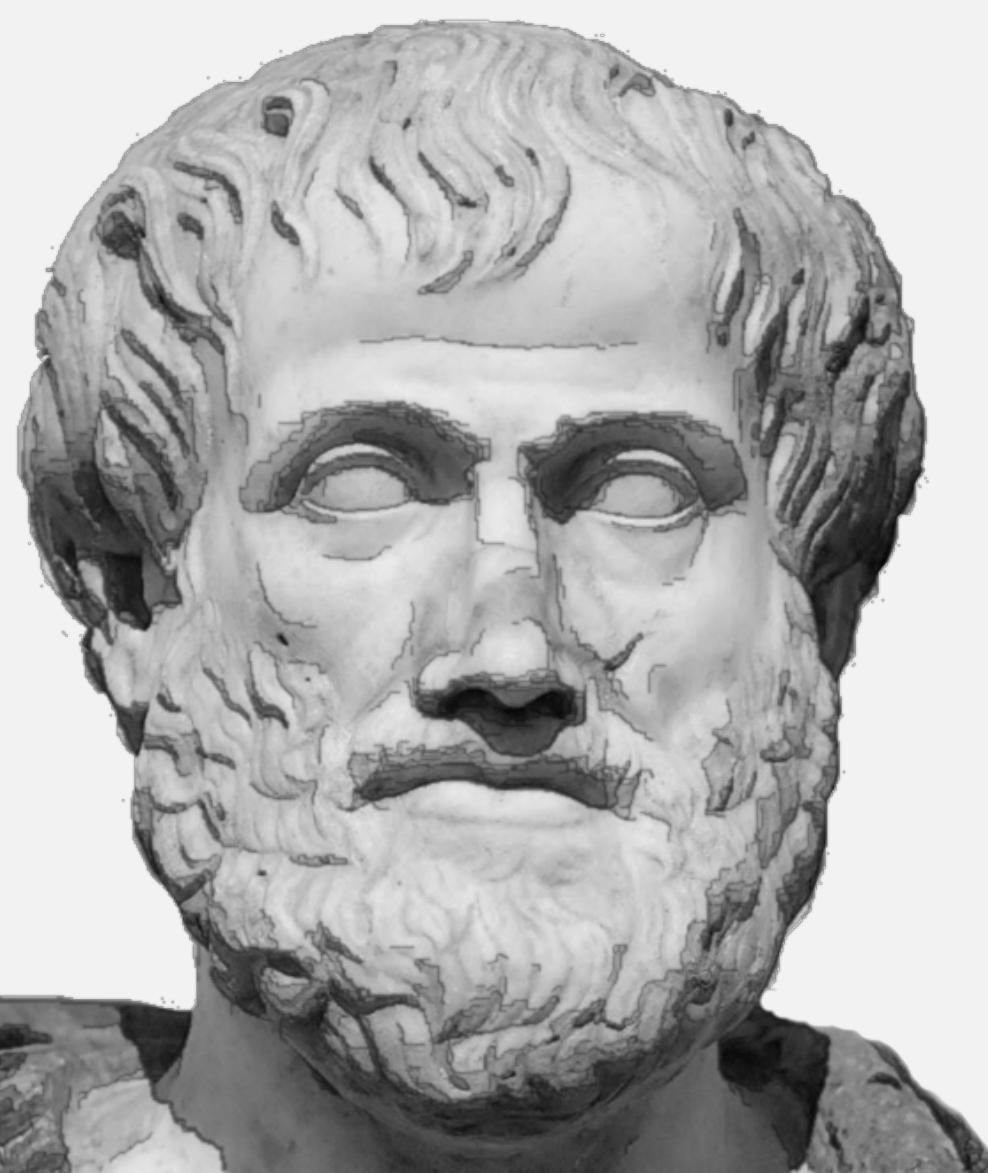
- Tailor your abstract to fit the topic of the conference/session you are submitting to.
- Make sure it summarizes your work accurately.
- Ensure the overall format consists of:
  - Background/context
  - Question/purpose
  - Experimental approach
  - Conclusion (answer)/implication
- Follow the guidelines provided (maximum number of characters, deadline etc)
- Follow the usual writing guidelines
- **Make it interesting and exciting** – you want the SOC to select you for a poster or talk!

# HOW TO GIVE A GREAT TALK

“People who know what they’re talking about don’t need PowerPoint.” – Steve Jobs

# Aristotle's pillars of persuasion

Aristotélēs: “Ρητορική”, 367–322 BC



# Aristotle's pillars of persuasion

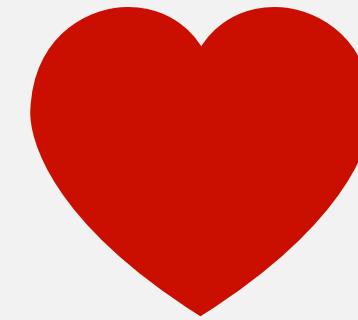
Aristotélēs: “Ρητορική”, 367–322 BC



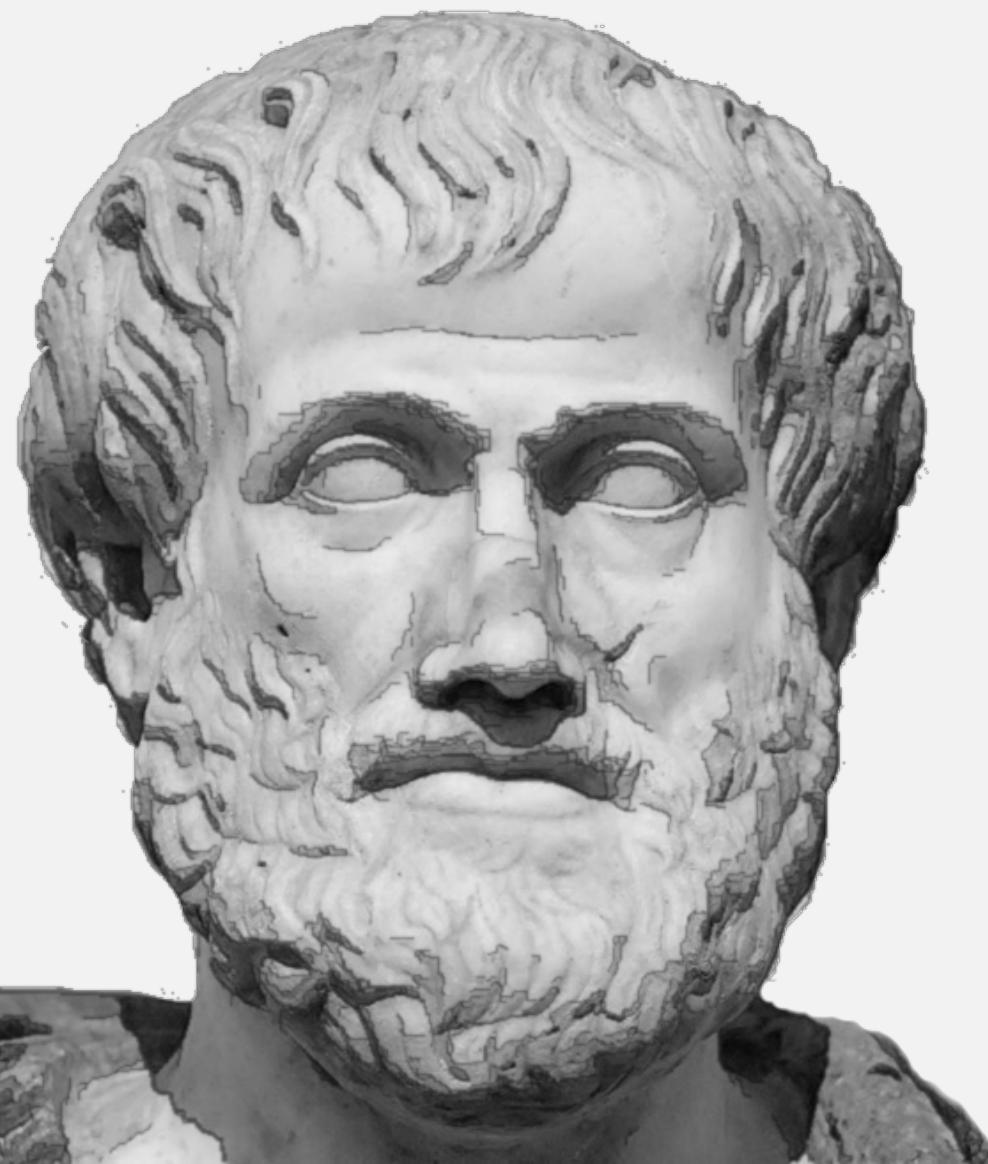
**ETHOS**



**LOGOS**



**PATHOS**



## Credibility

- Prestige
- Professional status
- Trustworthiness
- Personal integrity
- Capability
- Character
- Professionalism
- Cites credible sources
- Confidence in delivery

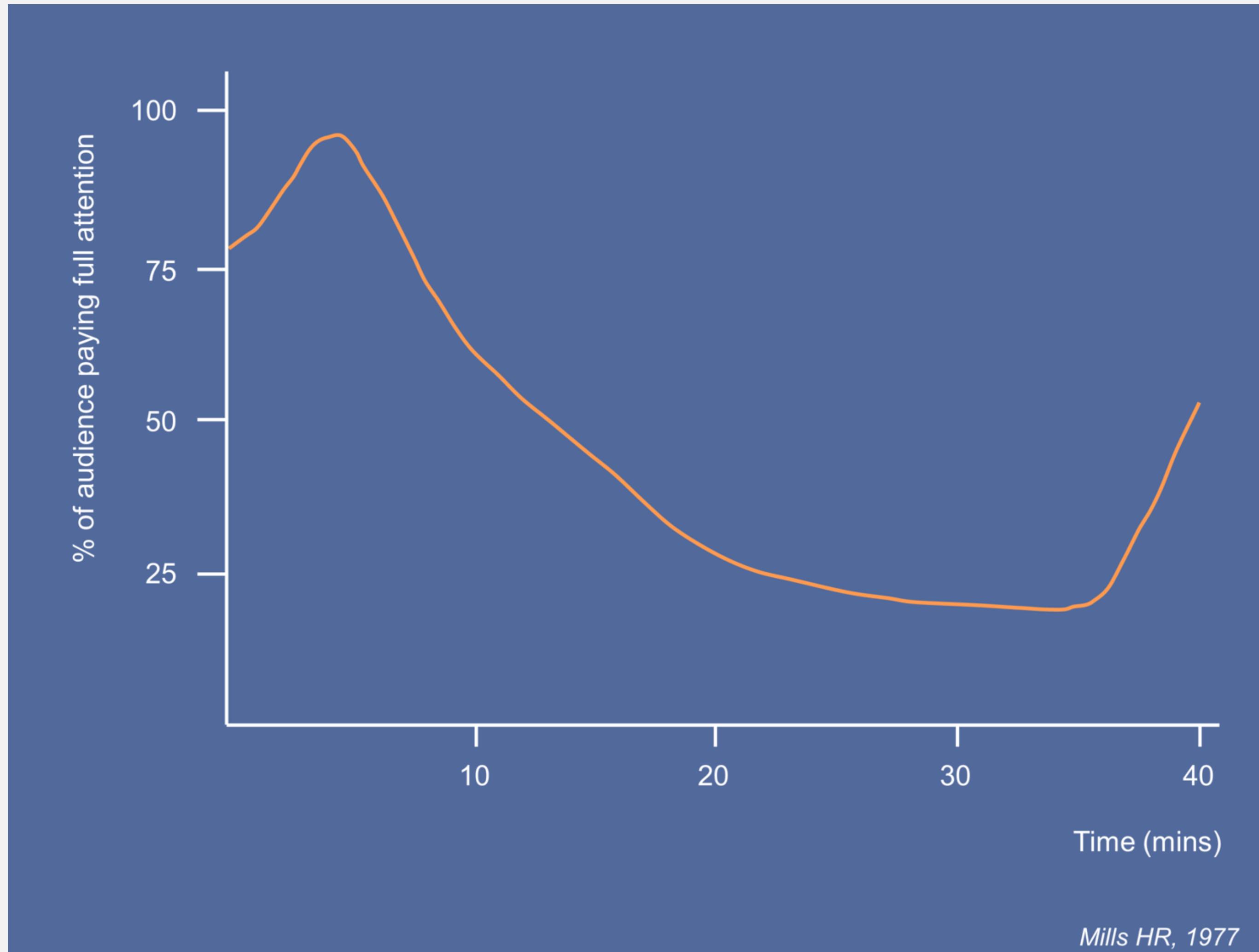
## Reasoning

- Coherence/Structure
- Logic
- Argumentation
- Data
- Evidence
- Statistics
- Research
- Idea connections

## Emotion

- Aesthetics
- Connection with audience
- Sensorial impact
- Imagination & creativity
- Humour
- Body language
- Vivid language
- Stories
- Inspirational quotes

# Attention span of an audience



- After a talk, most people remember about 10% of what they hear, 20% of what they read, and up tp 50% of what they hear and see.
- After a week, they remember about 10% of your presentation.
- No audience listens to 100% of your talk. On average, attention is high in the first 10min and in the last 5min of a 40 min talk.
- More likely to remember parts of the start and/or end.

Two days later, your audience will remember either  
0 or 1 of your points ...so,  
think about your *one take-away point*,  
and *tell a story!*

**Content**

**Delivery**

**Structure**

**Preparation**

**Slides**

**GREAT TALKS**

**Content**

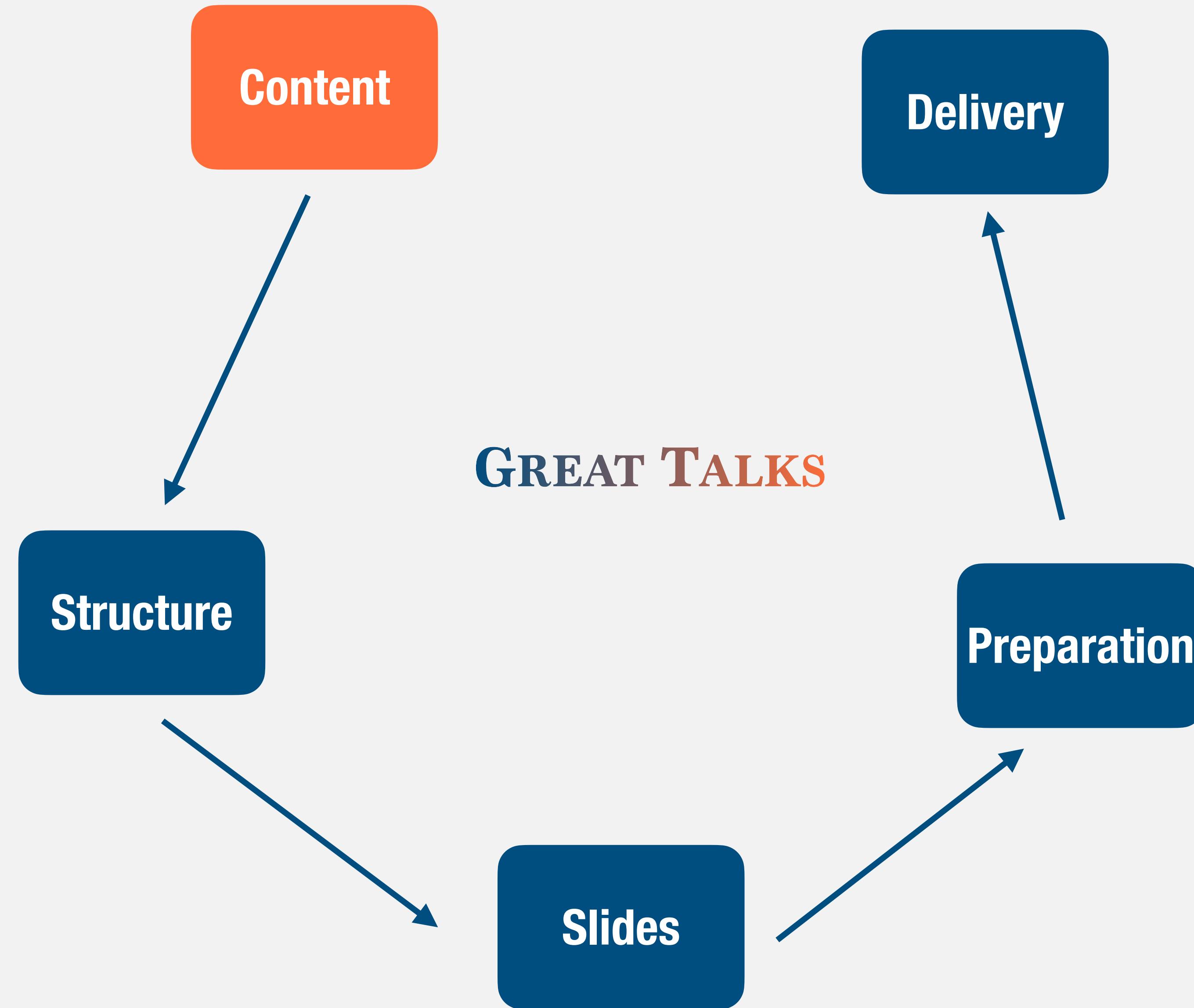
**Delivery**

**Structure**

**Preparation**

**Slides**

**GREAT TALKS**



## Content

### What is the goal of your talk?

- present a result or paper
- review a field
- get a job

### Think about your audience:

- what do they already know?
- are there many students?
- is it a very specialised audience (e.g., at a conference)?
- is it a public talk, i.e., non-scientists?
- what will get them excited about your topic?
- will the talk be recorded?
- will the slides be online?
- minimal & sufficient information to make your point

## Content

A talk can have similar content as a paper, but the information is extracted differently by listeners compared to readers.

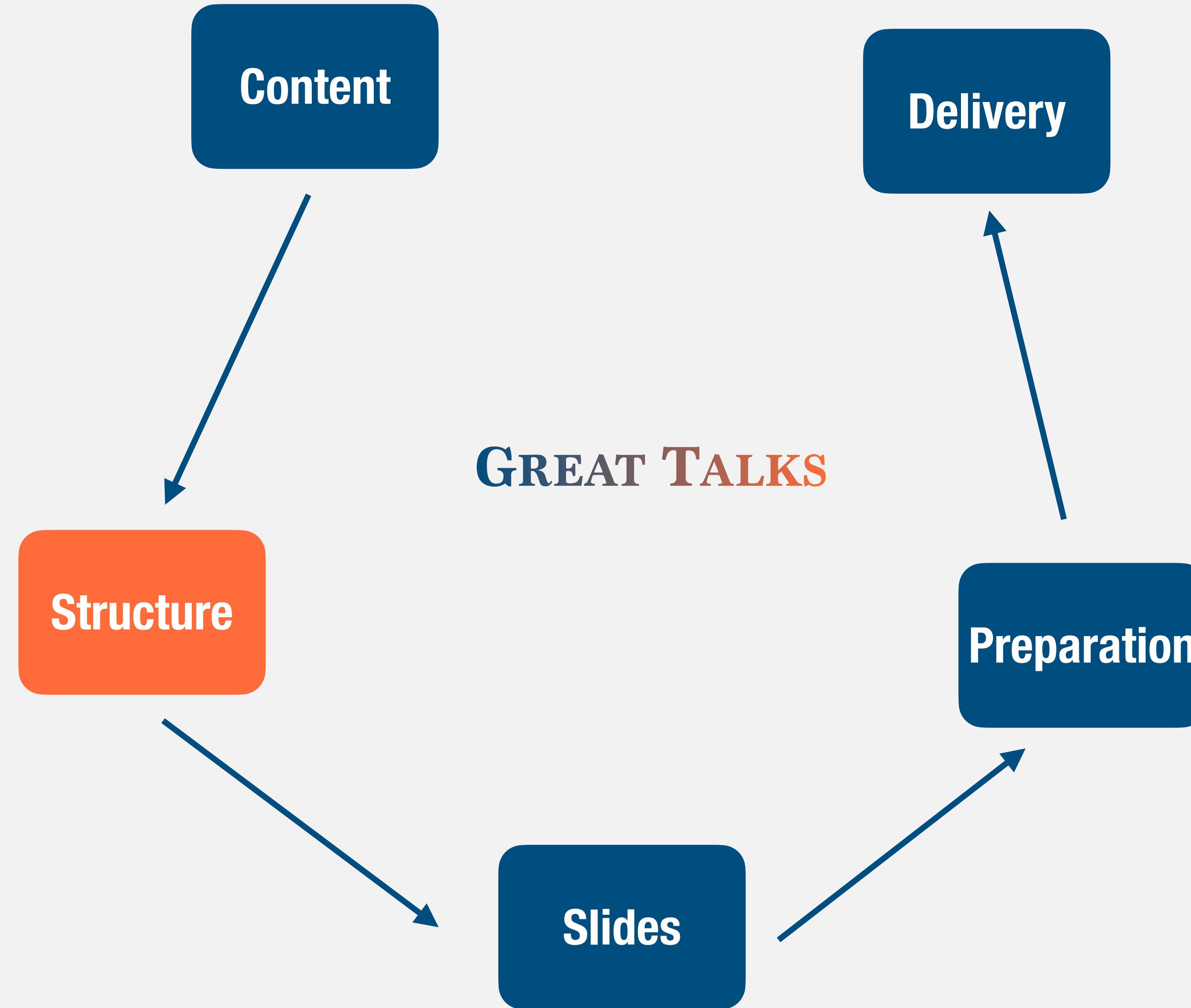


Text can be read and reread at the reader's speed.

Listeners get a chance to listen to a piece of information only once and at a speed set by the presenter.

Readers can easily scan headings and subheadings and skip ahead when they want.

Listeners have no control over the order or type of information they will see and hear.



## Structure

### Tell a story!

- logically link introduction → body → conclusions
- keep it simple but not simplistic
- **streamline**: if a slide has no bearing on your conclusions, omit it
- have one take-home message

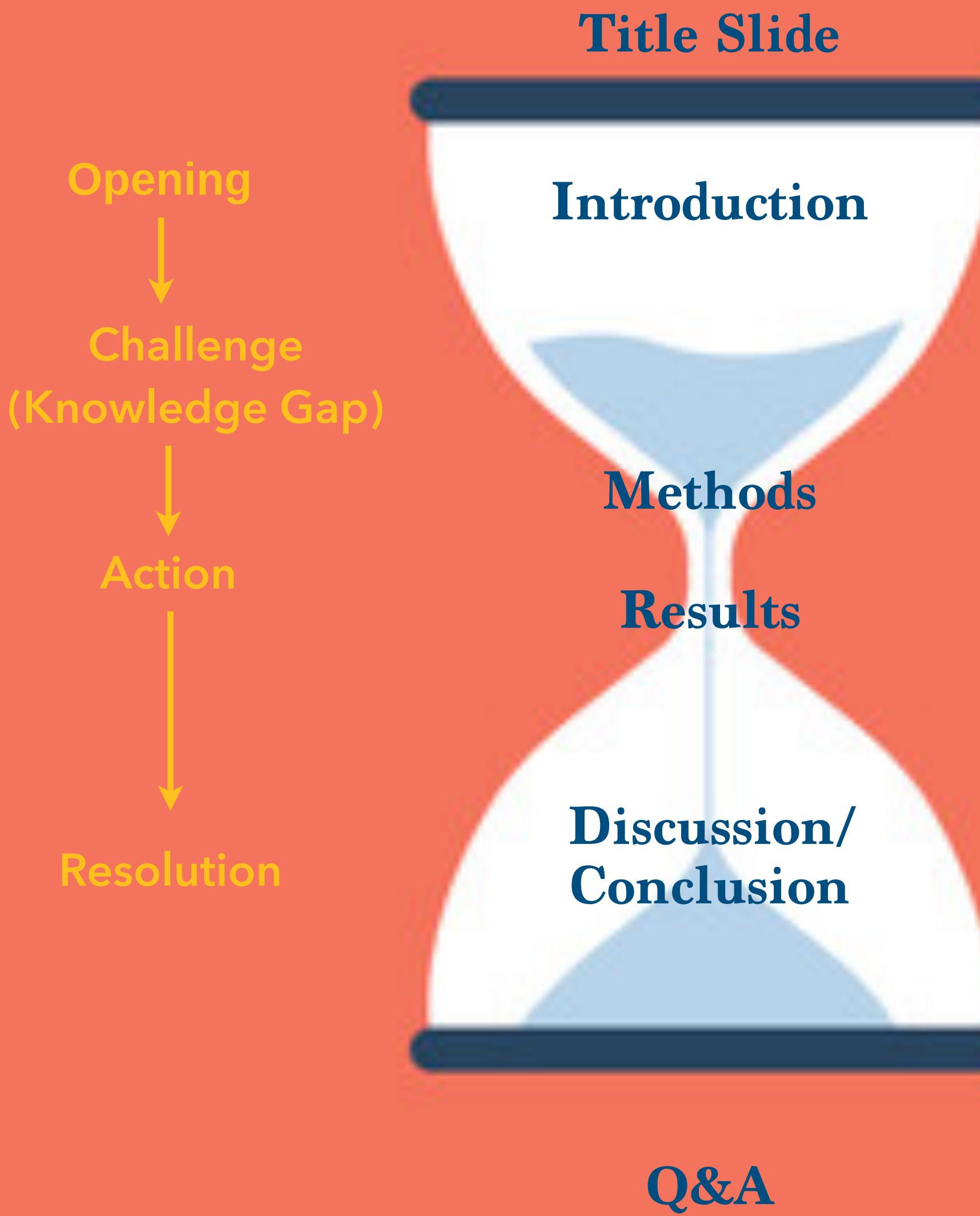
### A good introduction is crucial to engage the audience!

- big picture: describe question and why it is interesting
- how this talk addresses the question
- **state the obvious**, but only briefly

### **Describing your research:**

- clearly separate your own work from the review of others
- always **give proper credit** to other people's work
- include crucial methods and results, **omit superfluous**

# Structure of a talk



Introduce yourself and the topic of your talk, acknowledge co-authors.  
Set the tone, make the audience interested.  
Start strong!

What is the context/background for this project?  
How does it fit with the other research in the topic?  
What is the research question the paper addresses?

**WHY?**

What did you do to answer the question?

**HOW?**

What did you find?  
Show figures. Keep text to a minimum.

**WHAT?**

Did you answer the question?  
What is the significance of your results?  
How does this fit in with what is known about the topic?  
Are there any limitations/remaining open questions?  
Reinforce your take-away message!

**SO WHAT?**

Stay calm, polite, and professional!

# Make an outline of your talk

Structure your talk as a narrative building toward your conclusion.

**Find your main point/take-away message/snappy conclusion, then work backwards to determine what you need to say to get to that point.**

You can also think of it as similar to a legal argument.

Build an outline of what needs to be included to support your conclusion.

You will have casually interested people at the talk – give them a story or theme to follow!



# Make an outline of your talk

## A broad introduction (tailored to the audience) is crucial (1/3 or even 1/2 of the talk):

Explain the big picture and motivate the question you are trying to answer

Work from broad to specific

Tell people why this is important!

Can be much shorter in a specialized conference

## The main narrative (almost all the rest):

Identify key figures and (maybe) equations you need to include to support your conclusion

## A conclusion:

You won't read it, but a summary slide is useful to leave up

You can ease into the conclusion by describing some implications of your work

Take it back to the big picture at the end!!!

For a job talk: spend more time on the future of this research!

# Transitions

Transitioning between ideas is often the hardest part.

It is easier if you are telling a story with a logical flow and if all the ideas relate to your central question/take-away message. But sometimes you still need a segue\*...

\*definition: (in music and film) move smoothly without interruption from one piece of music or scene to another [or one idea to another]

**Big segue?** Have an overview slide.

**Smaller segue?** Find a hook to motivate it.



***GRACEFUL SEGWAY.***

# Words to say

## Smothers and transitions

...and, yes, the...

...actually...

...well, ...

...anyhow...

...okay...

...let's see— ...

...once again...

...all right...

...so...

...for example...

...just as an  
aside...

...now...

...please...

...sorry...

## Overview words and phrases

I am going to present...

I would like to...

What I am going to talk  
about is...

To start, ...

This talk is about...

My presentation deals  
with...

Then I am going to  
discuss...

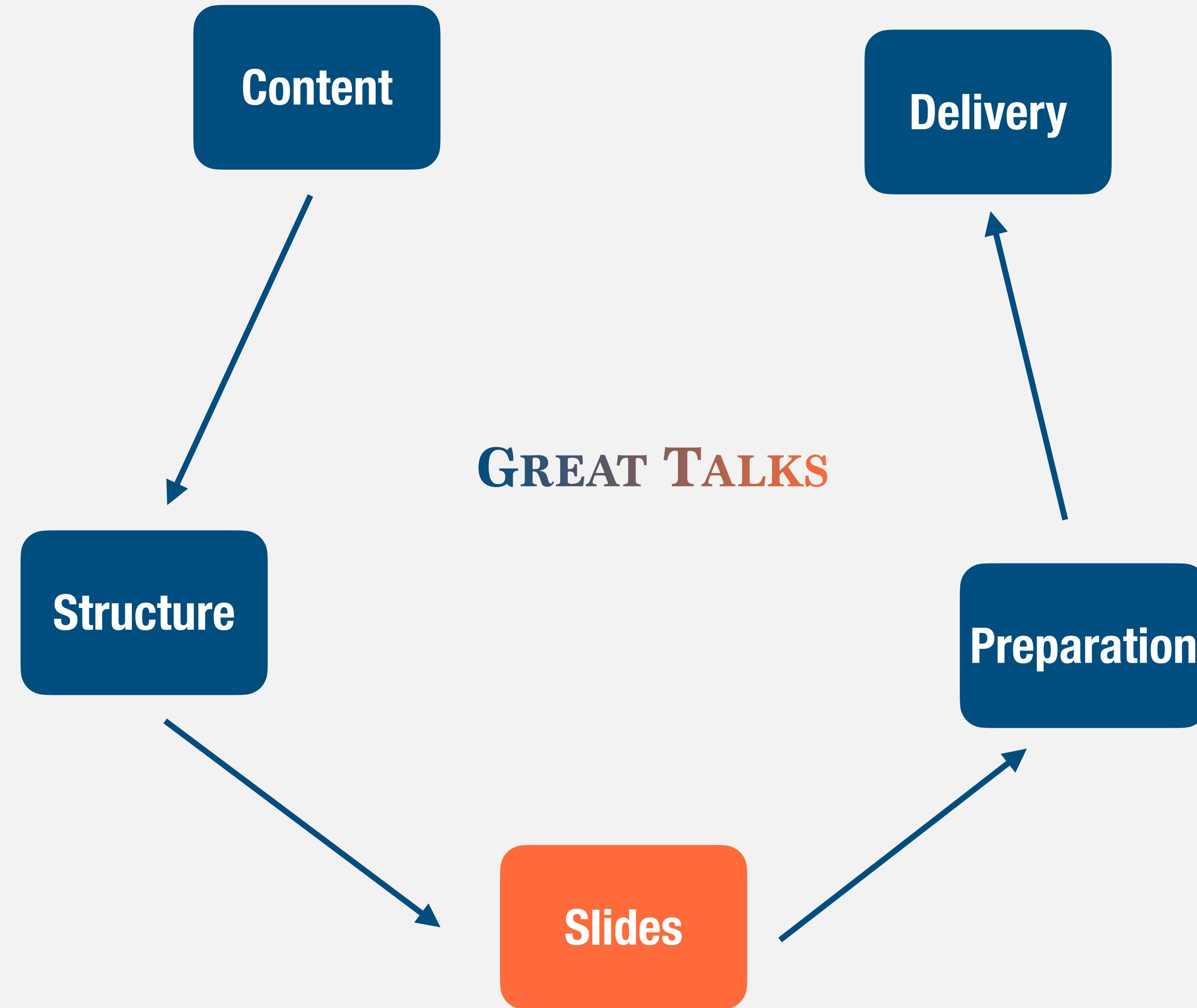
At last, I would like to...

Now we move on to...

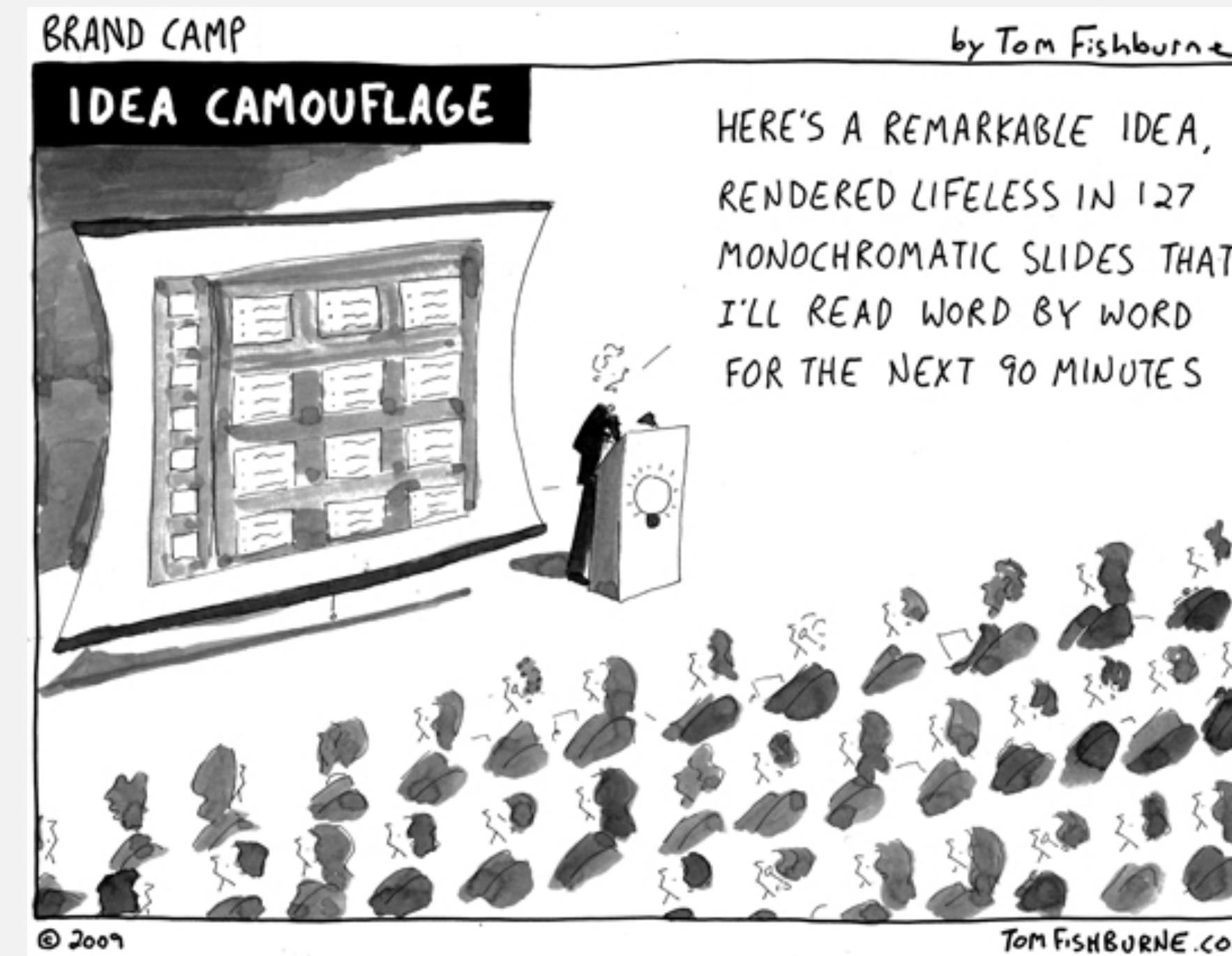
I would like to spend  
some time on...

For the rest of the time...

On the next slide...



## Slides



- Use slides to **guide** the audience & **complement** what is being said, not replace the speaker!
- **Design** the slides purposefully: think about how each slide will help you convey information.
- Don't put text on slides just to remind yourself!
- **Explain everything** on the slide... or don't put it on the slide.

**Content**

**Structure**

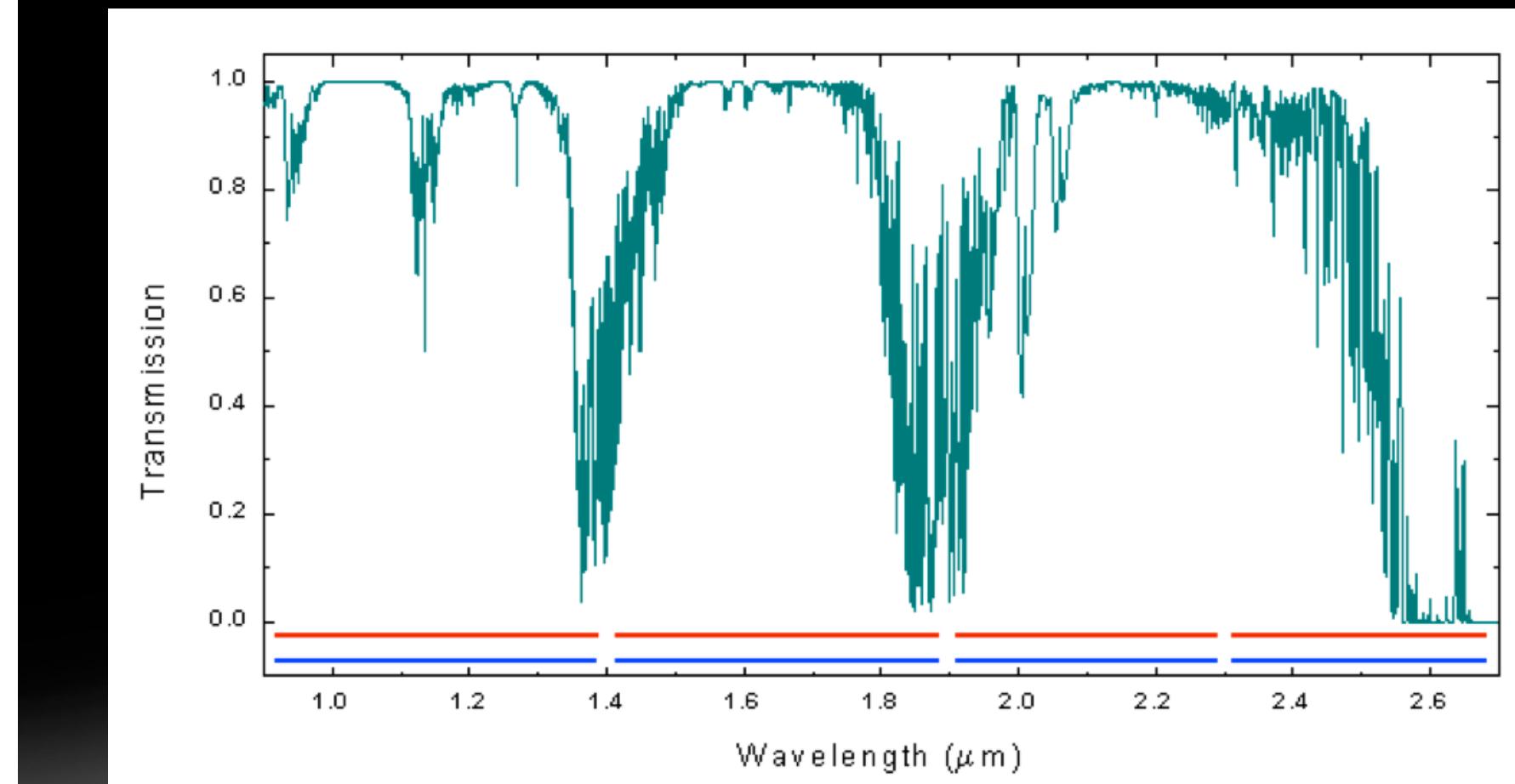
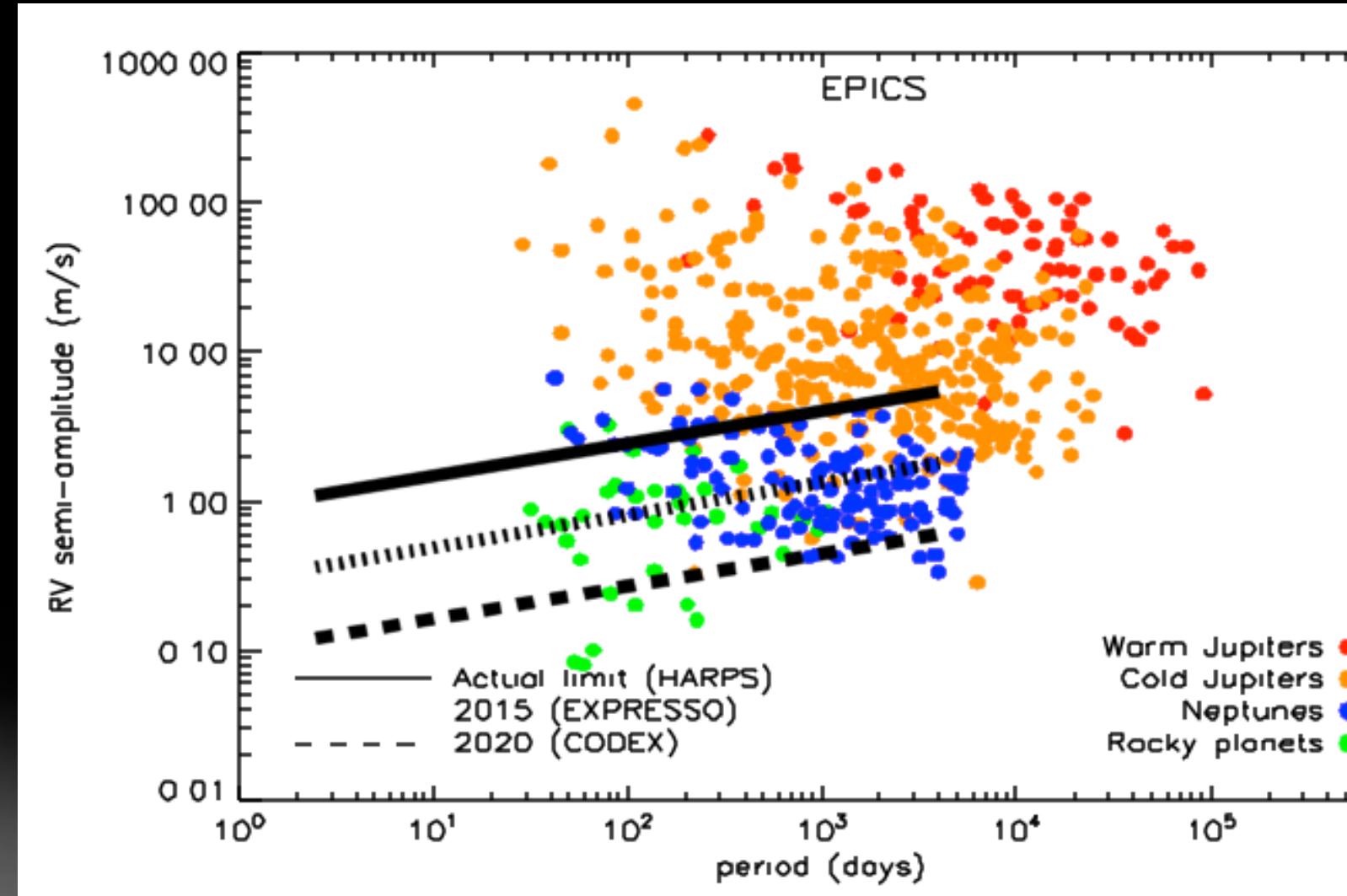
**Slides**

## General tips:

- keep the design and content simple
- aim for about 1-2 minutes per slide
- trim words to the absolute minimum
- bullet points: consistent length, tone, and style
- avoid equations
- light backgrounds work
- avoid harsh contrast
- use colours deliberately
- use animations sparingly
- choose font types and sizes strategically
- all axes & labels in figures must be legible
- give figures and tables titles (but no captions)
- attention to detail: double check typos etc.

# Lorem Ipsum

- **Magnis aute volupti scimus dolupta tiusdam, ommodioris exceperepe vit autatem porio.**
- **Tem fugit mi, sum rerumet landam, qui vel eaque ullqui derovit entum nis doluptusae niendit volupta tincide ssende**
- **Voluptas aliberf errumet possin et es minis dolecab iunt ressint a cuptas alieni hilicaborrum recturem ra quia simo**
- **Tem quis rectur modis quatios quia aut fuga es cuscium**



# Equations (if you must)

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Point Sources:

$$\text{S / N Ratio} \sim \sqrt{\frac{A_{\text{tel}} \cdot T \cdot \Delta\lambda}{A_{\text{img}} \cdot B}}$$

(BLIP)

$A_{\text{tel}}$  = telescope area

$T$  = overall transmission

$\Delta\lambda$  = filter bandwidth

$A_{\text{img}}$  = area of image PSF

$B$  = thermal background

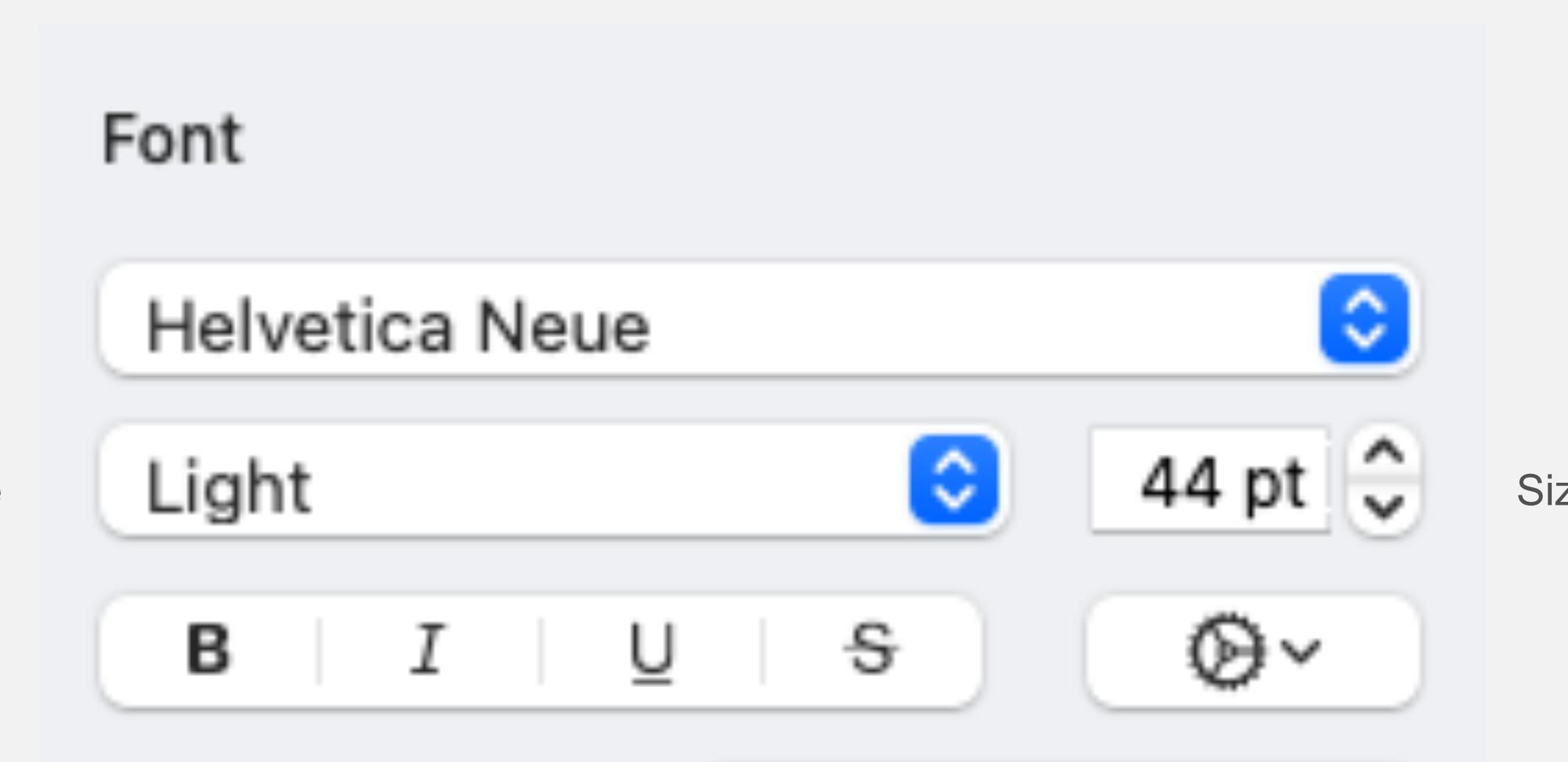
# Fonts

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Family

Typeface

Size



# Fonts

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Family     • serif vs sans-serif - jury is still out

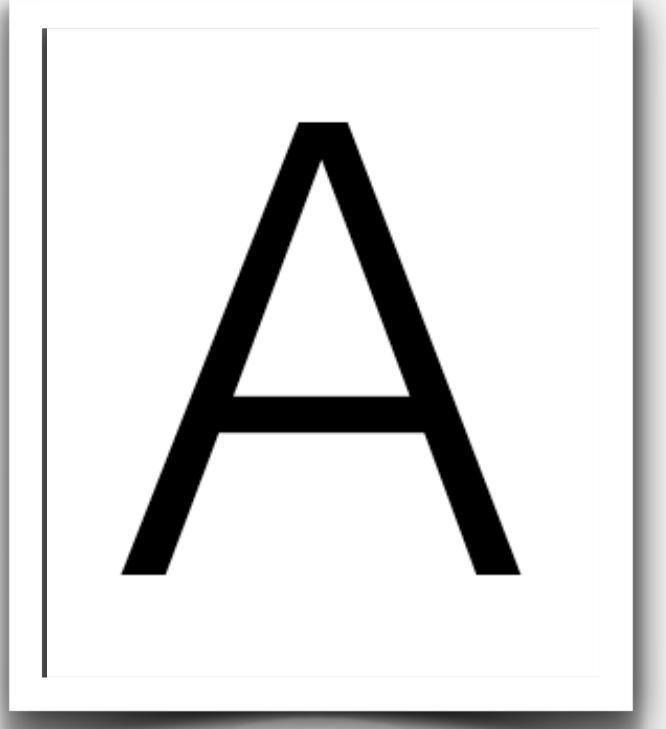
• novelty fonts

• **Comic Sans must die!**

Typeface    Lucida Blackletter

Braggadocio

Size



# Fonts

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Family     • serif vs sans-serif

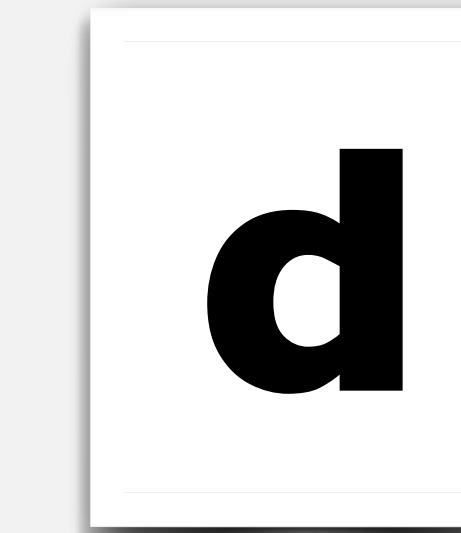
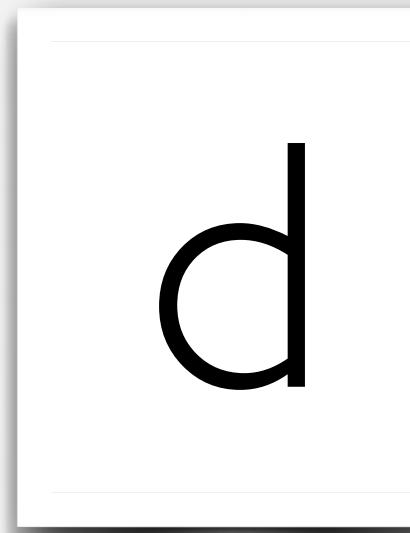
• novelty fonts

• Comic Sans must die!

Typeface    • use *sparingly*, especially **bold**

• lighter is better?

Size       This is 36 point



This is 28 point

This is 24 point

This is 20 point

This is 16 point

This is 12 point

Absolute Minimum

# Fonts: choose wisely

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Classic, Formal.

Clean, Modern.

Stylish, Thoughtful.

Ugly, Unprofessional.

*Kitschy, silly. Distracting, hard to read. Just don't.*

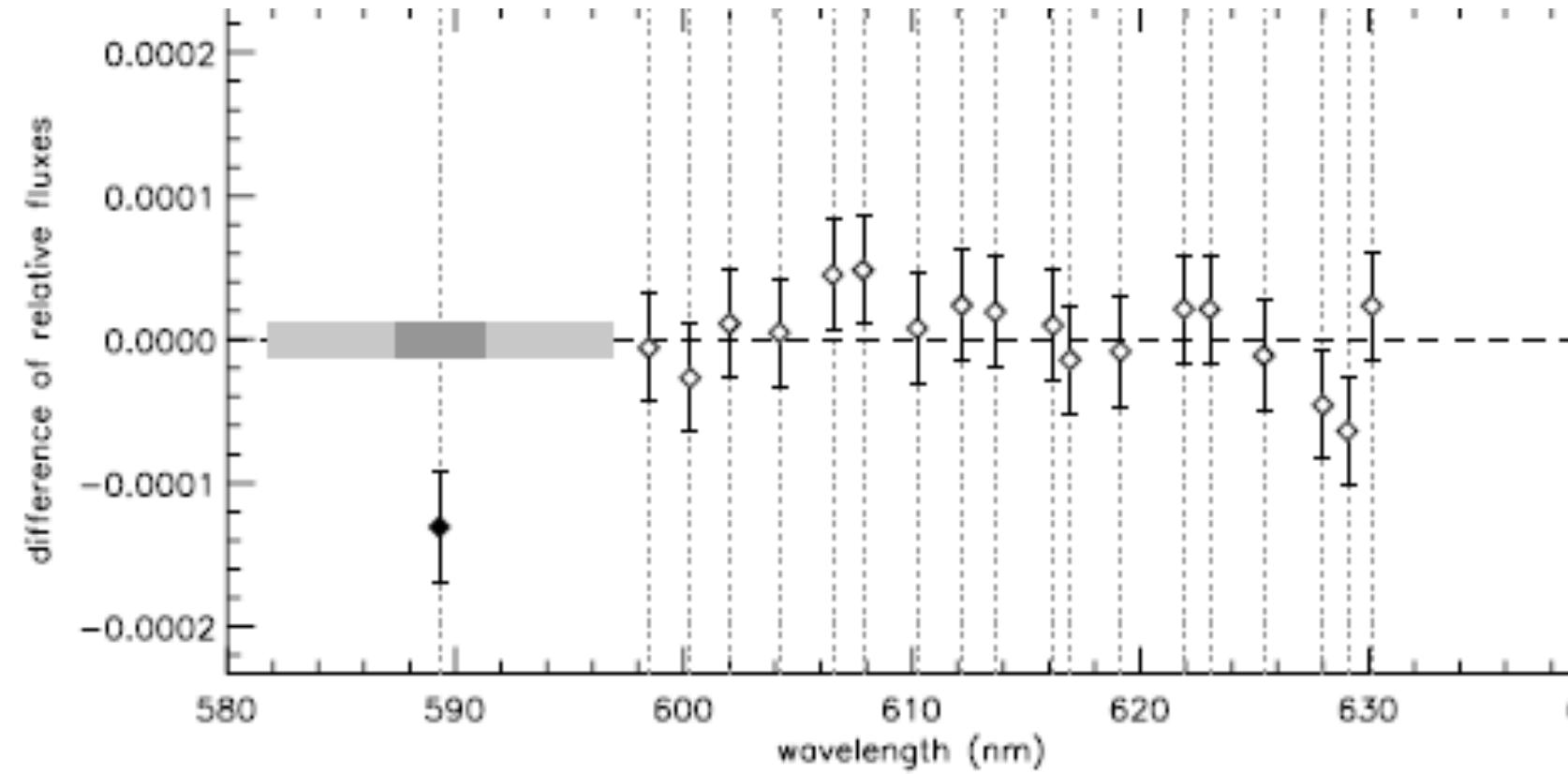
# Graphics / Figures

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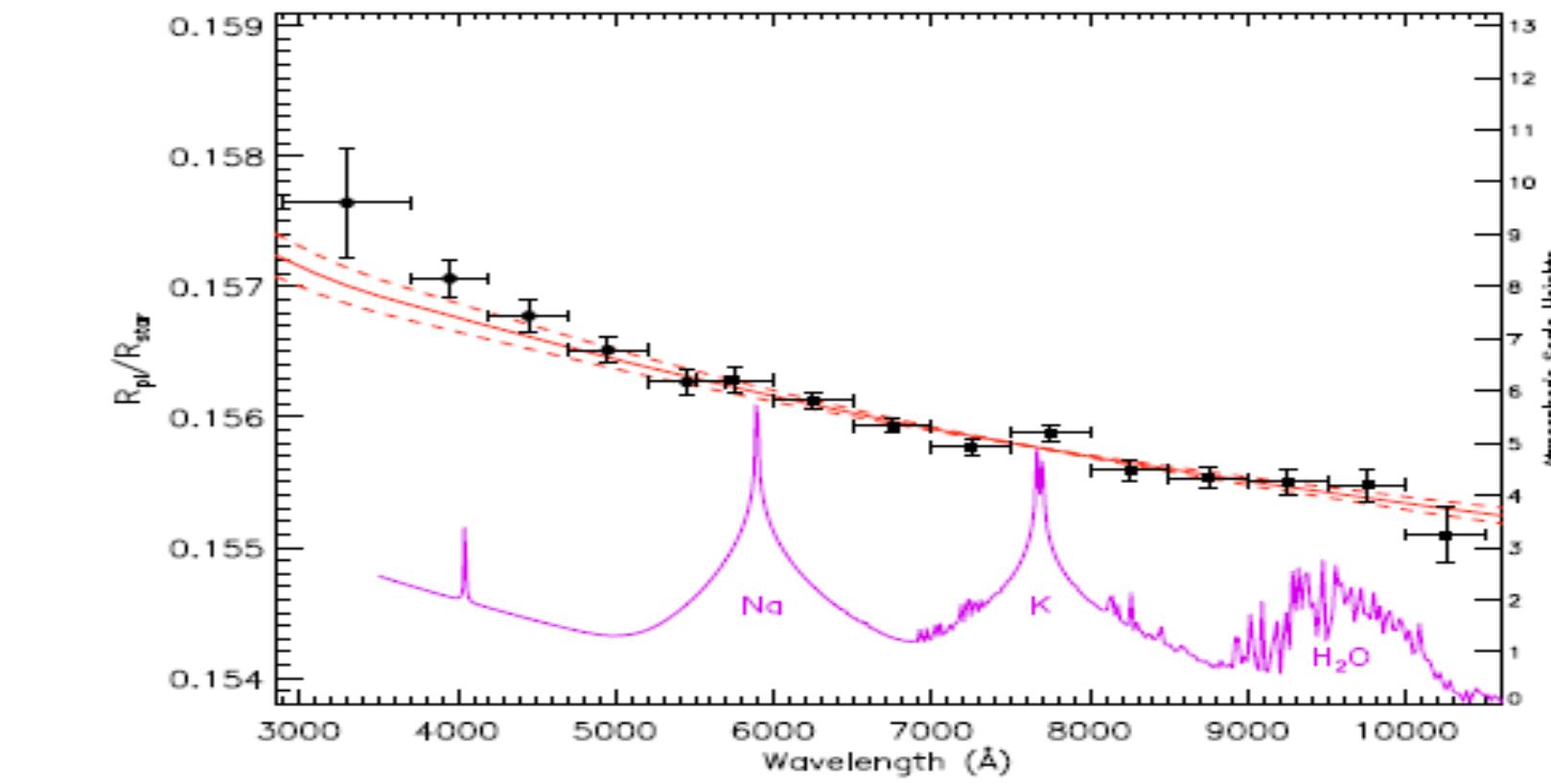
- ⦿ maximum one per slide
- ⦿ maximum 3 “dimensions”
- ⦿ legibility
- ⦿ consistency
- ⦿ animation manages complexity

# Atmosphere of hot Jupiters

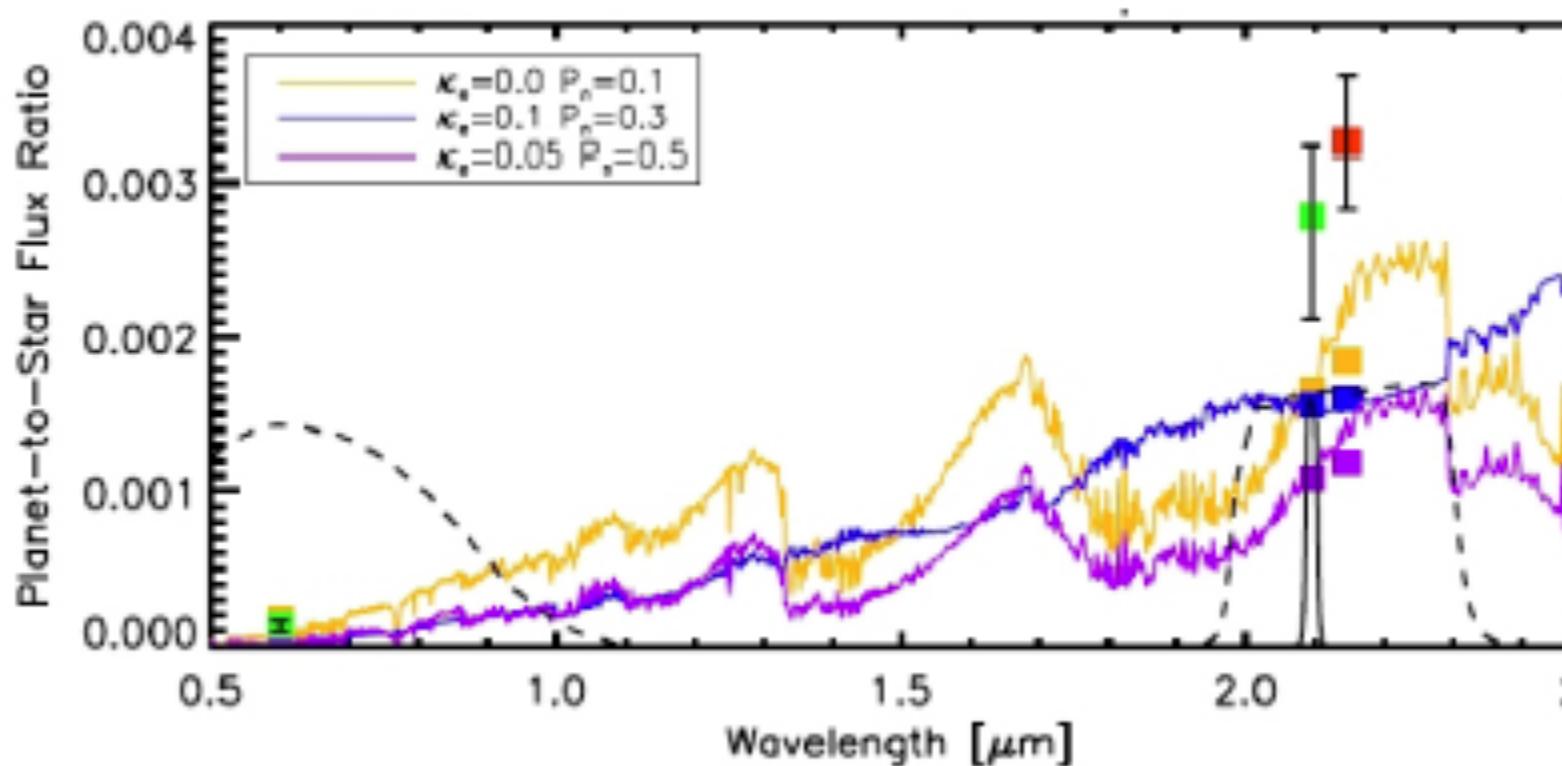
Atomic ( $\text{NaI}$ ,  $\text{KI}$ , ) and molecular ( $\text{H}_2\text{O}$ ,  $\text{CO}$   $\text{CH}_4$ ) species; hazes



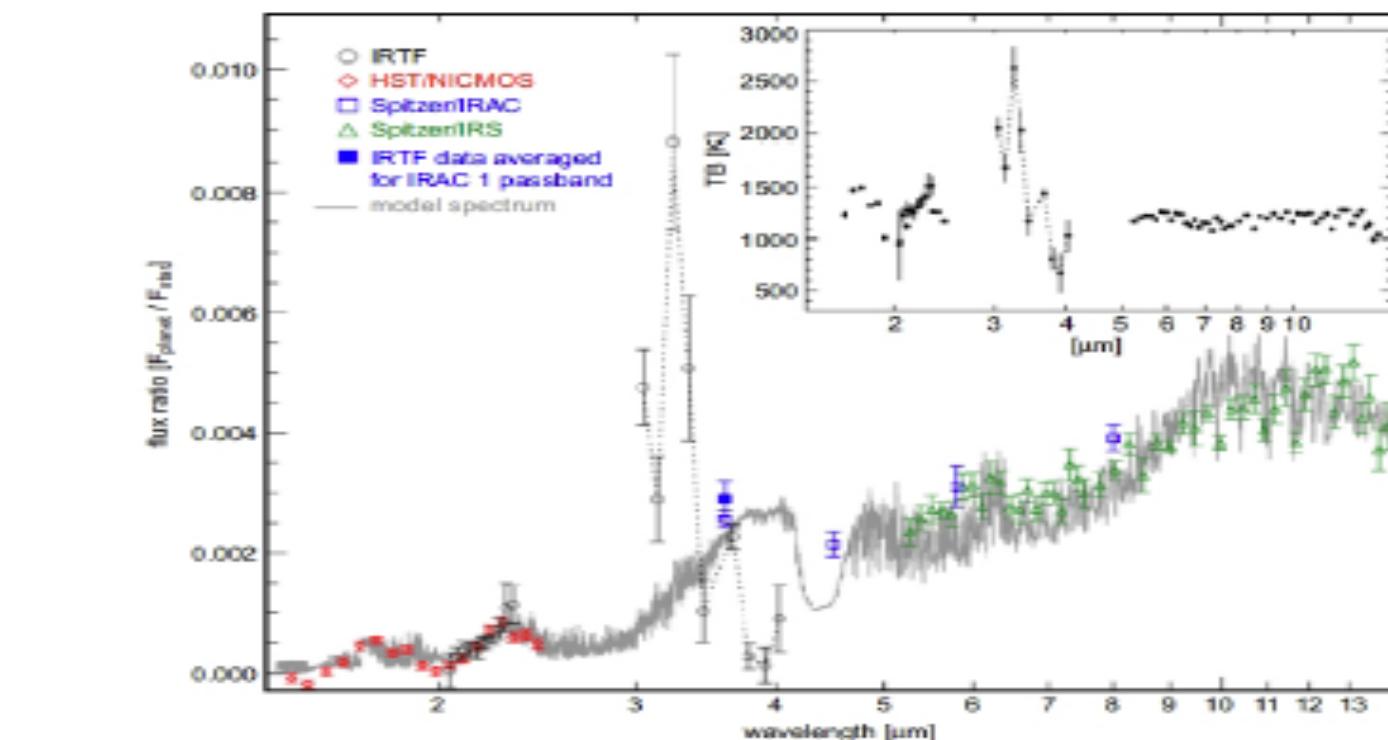
HD209458  $\text{NaI}$  HST (Charbonneau et al, 2002)

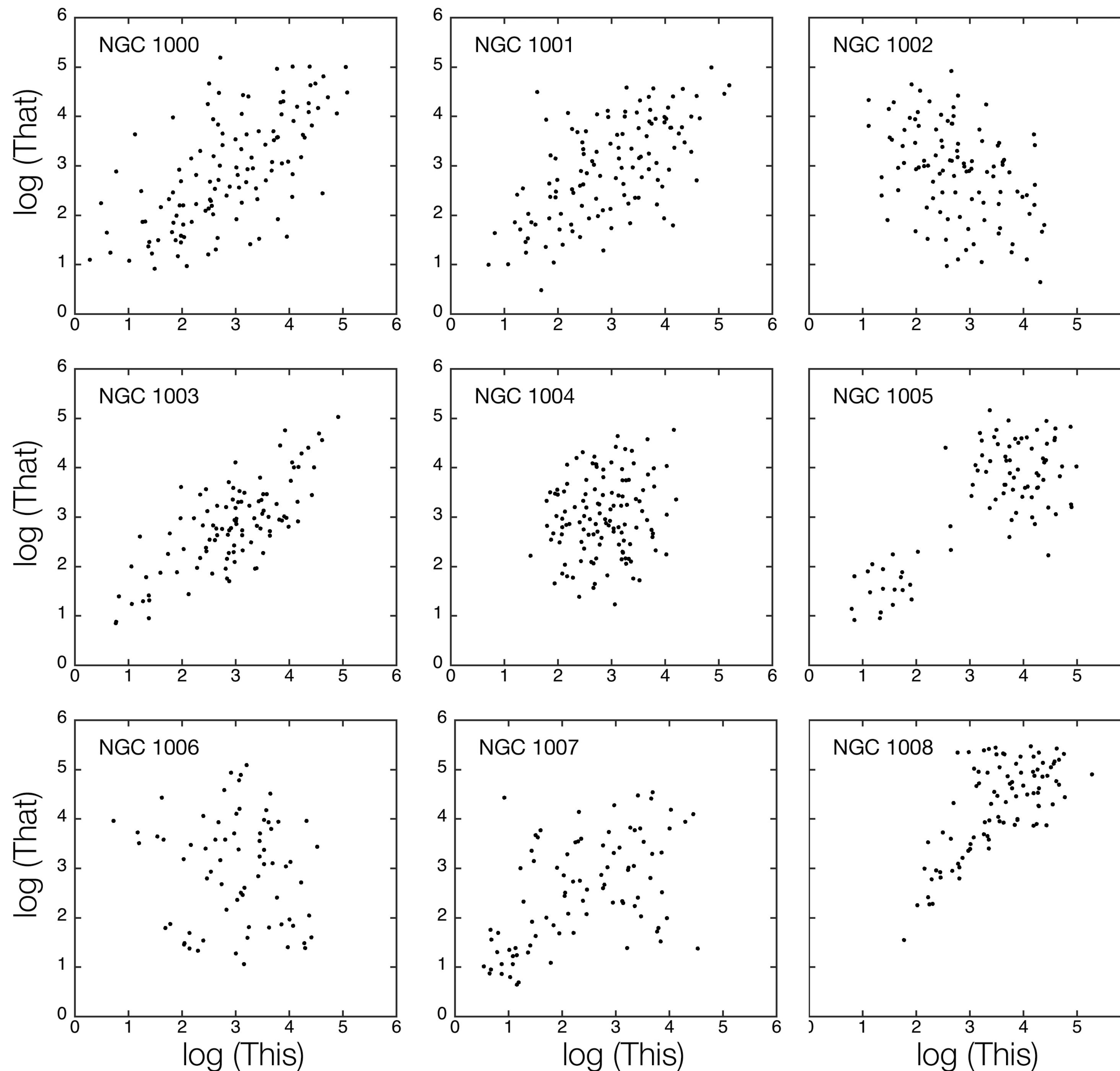


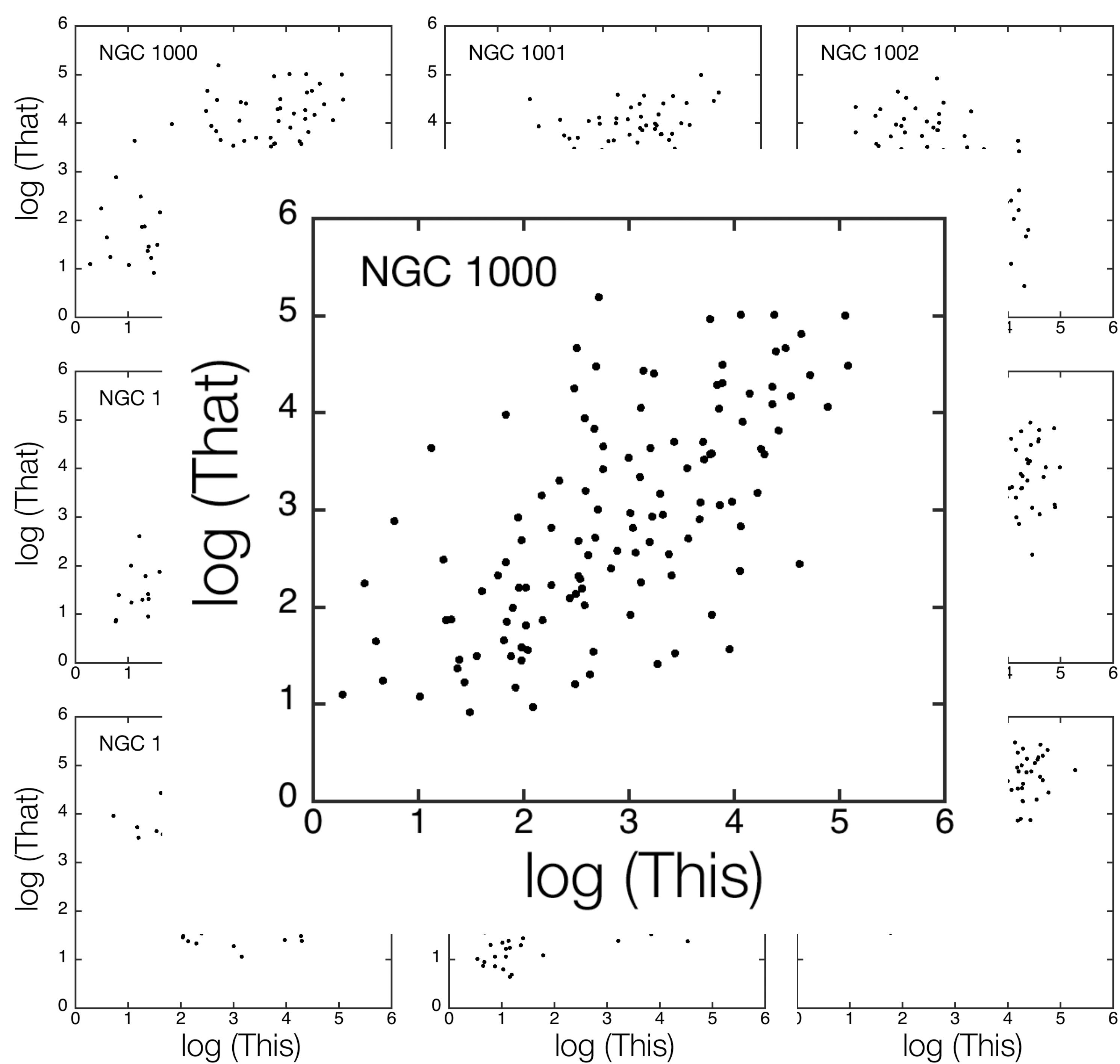
HD187933 transm. spectrum HST (Sing et al, 2011)



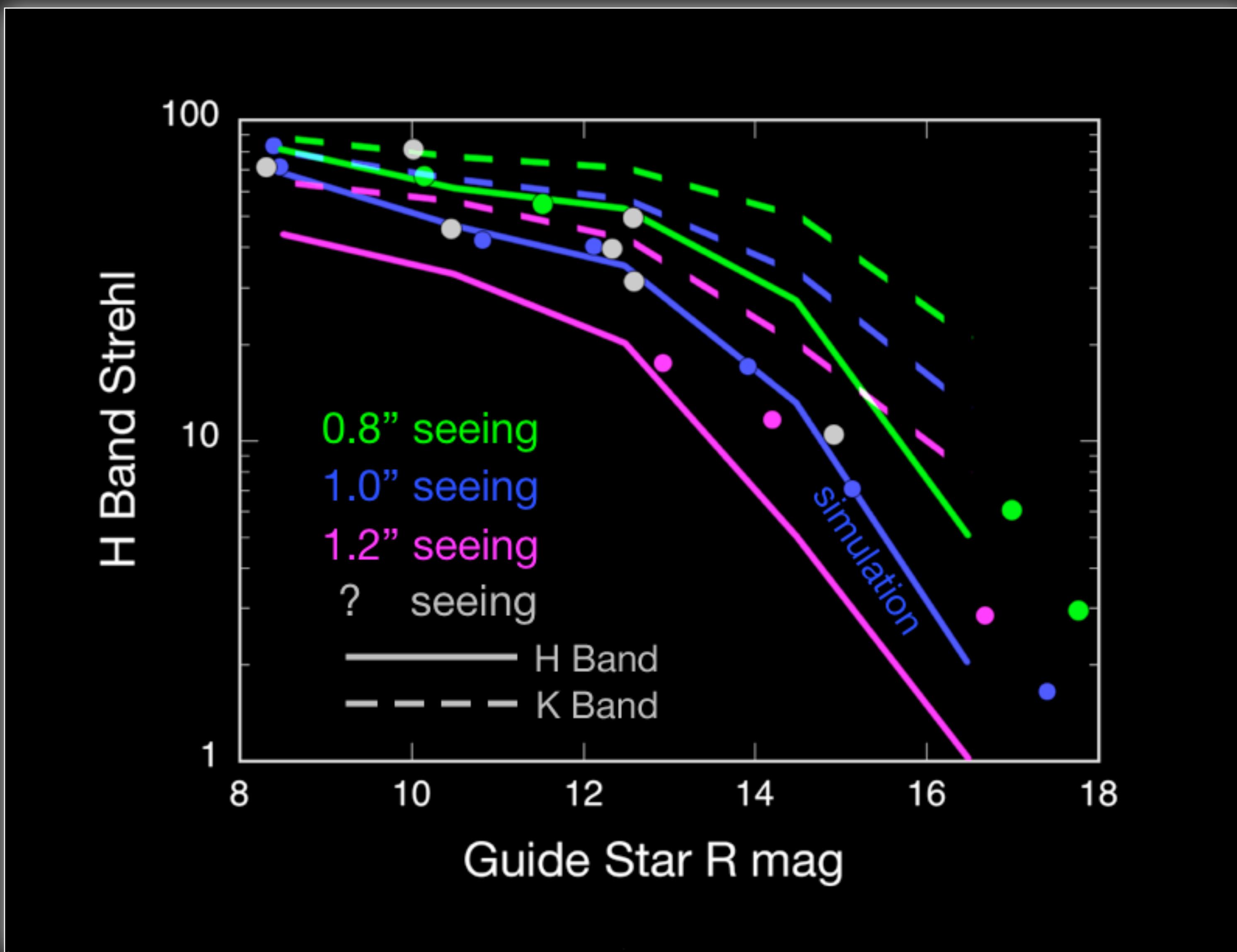
Corot 1b emission spectrum  
(Rodgers et al, 2009)



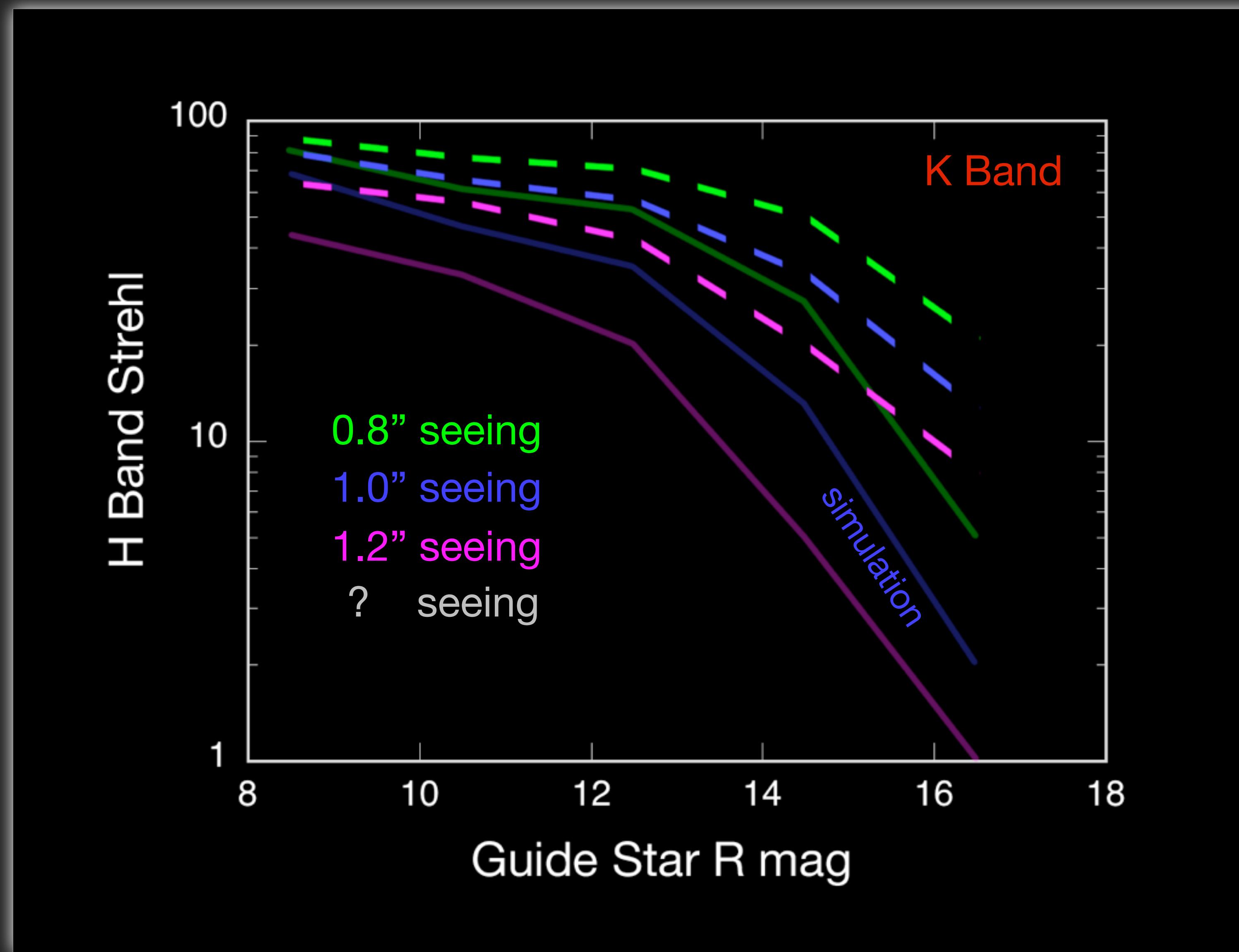




# FLAO On-Sky Performance



# FLAO On-Sky Performance



# Tables

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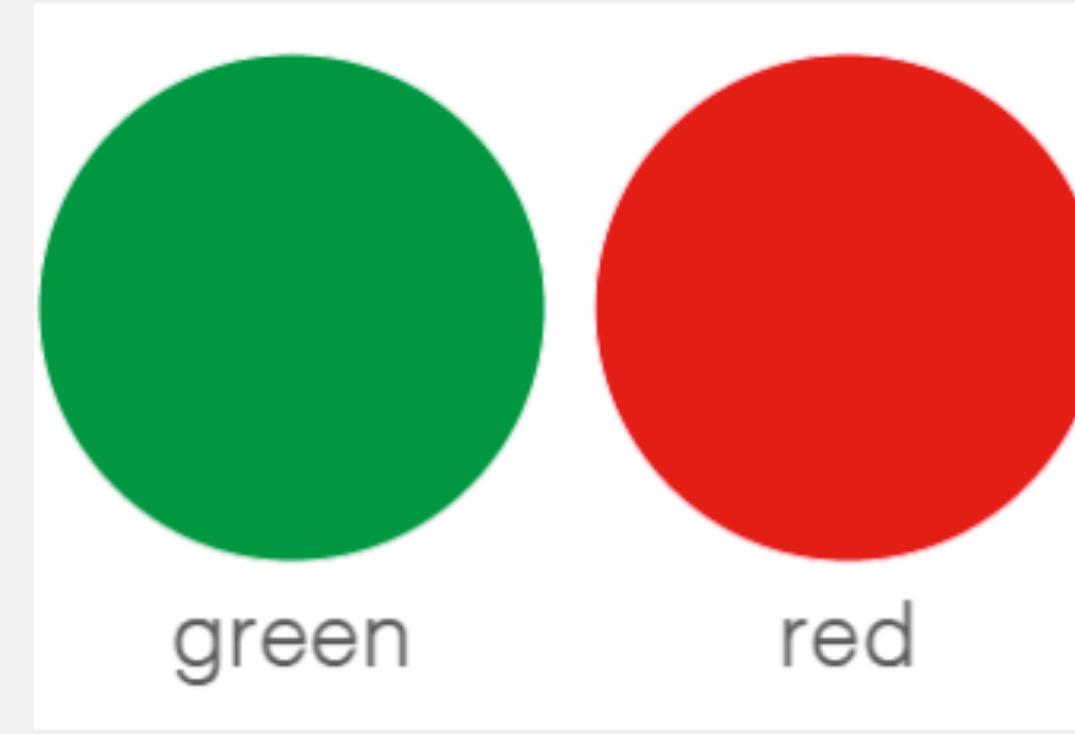
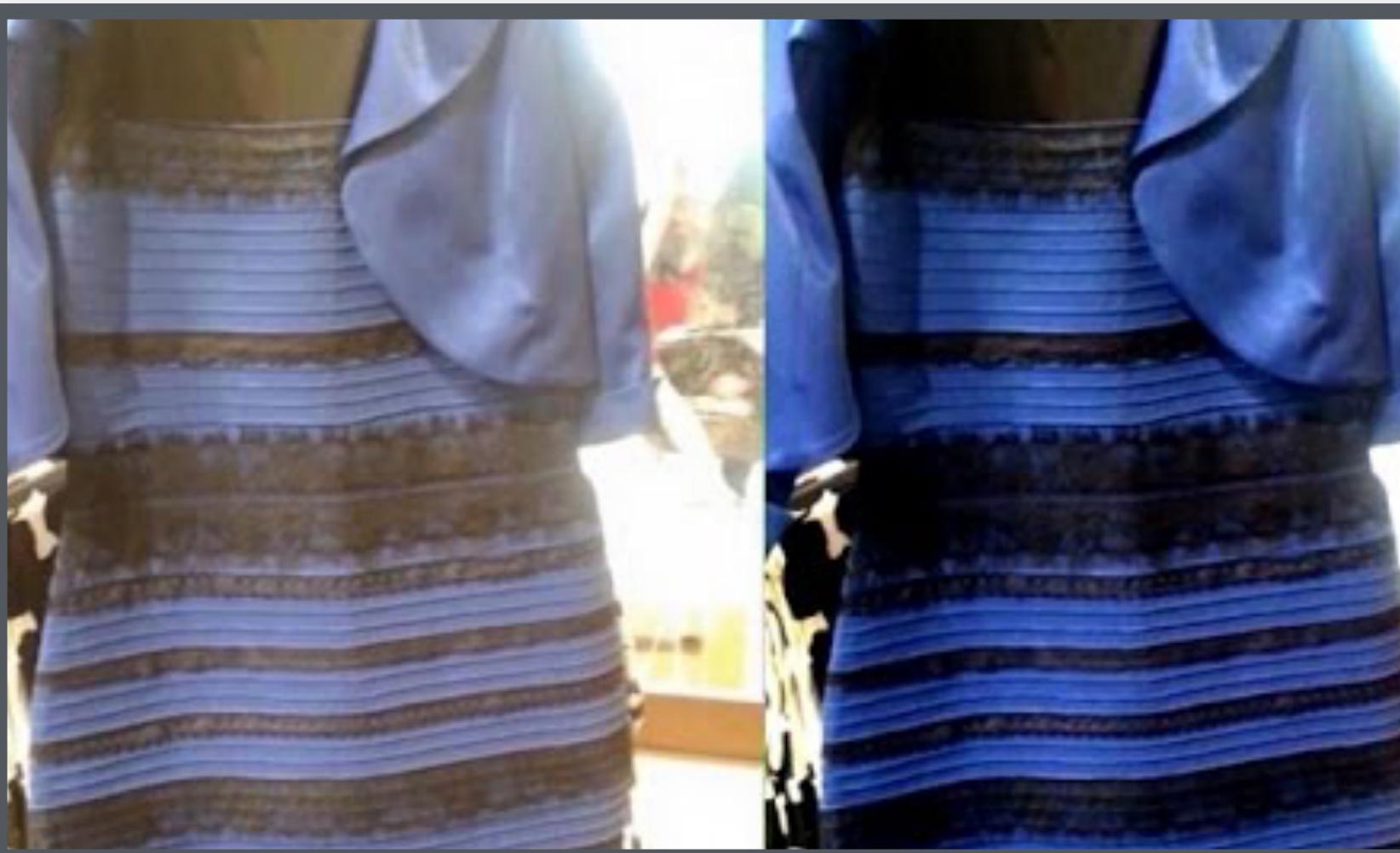
- ➊ don't use unless absolutely necessary
- ➋ brief, clear headings
- ➌ only include relevant rows and columns
- ➍ highlight most relevant rows
- ➎ ideally, maximum 3 columns x 5 rows

# Planet Search Surveys

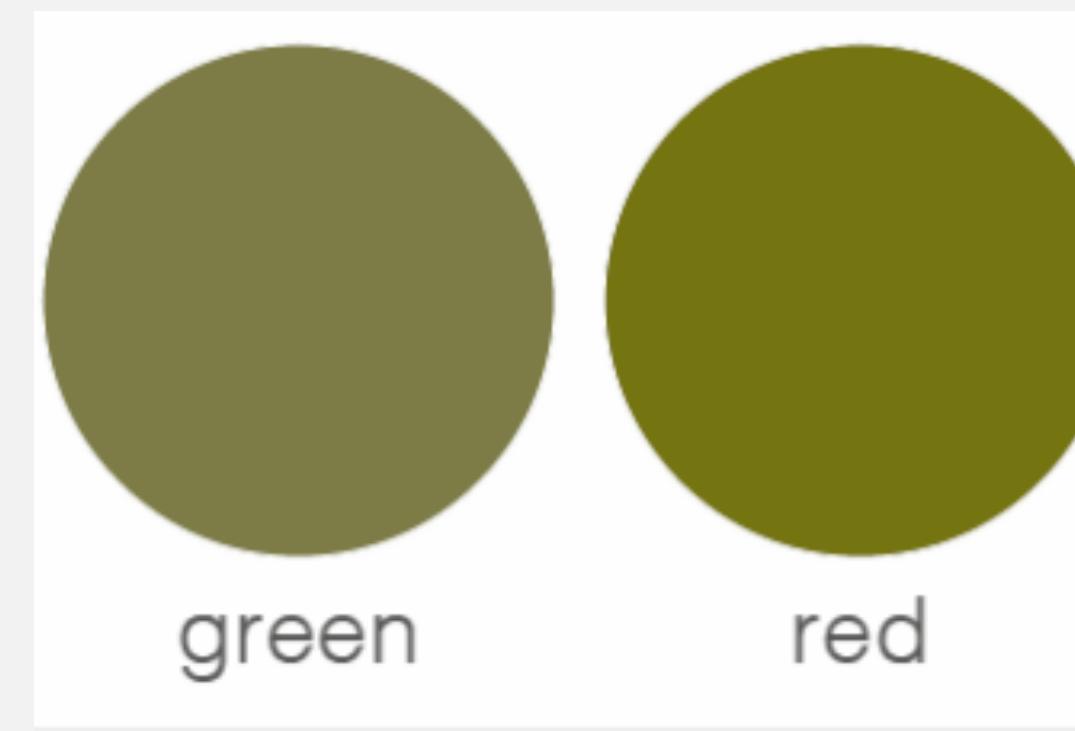
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	Horizon	Method	Ntargets	Masses	Sep/Per.	Distance range	Age	Constrains
HARPS S, N	Today	RV	thousands	EGP, NLP,SE	15 yrs?	< 100 pc	Gyr	star activity
VLT/ESPRESSO	2014?	RV	a few hundreds?	NLP,SE	15 yrs?	< 100pc	Gyr	star activity
CFHT/SPIROU	2014	RV (IR)	800	NLP,SE,E	7 yrs	<100pc	Gyr	star activity
PRIMA	2012	A	a few hundreds			< 100pc	all	ref star
GAIA	2013 (L)	A	150000+	NLP,SE,E	1-4 AU	< 200pc	all	
SWASP, Mearth, etc	today	TP	thousands	EGP,NLP,SE				star activity
Kepler/Corot	Today	TP	10000	EGP,NLP,SE	3.5yr	> 200pc	all	star activity
PLATO (tbc)	2018 (L)	TP	245000	EGP,NLP,SE		<100-a few 100	all	star activity
ECHO (tbc)	2018 (L)	TS						
SPHERE,GPI	2012	I,S	~1500	EGP,NLP	2-200+AU	< 200 pc	<500Myr	bright stars, AK
JWST	2018 (L)	I,S	100?	EGP,NLP	id	id	id	less constrained

# Picking colours: not as trivial as you'd think!



This is how non-color blind people  
see green & red

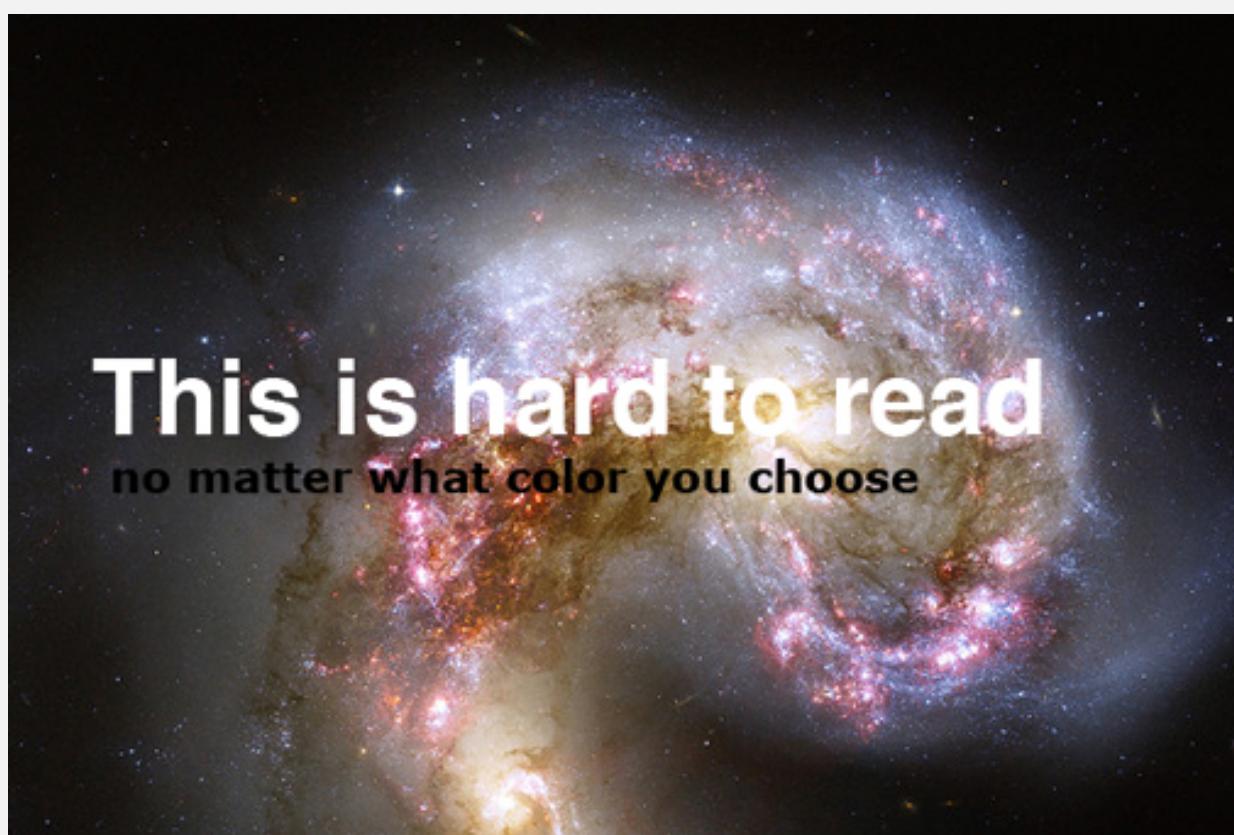


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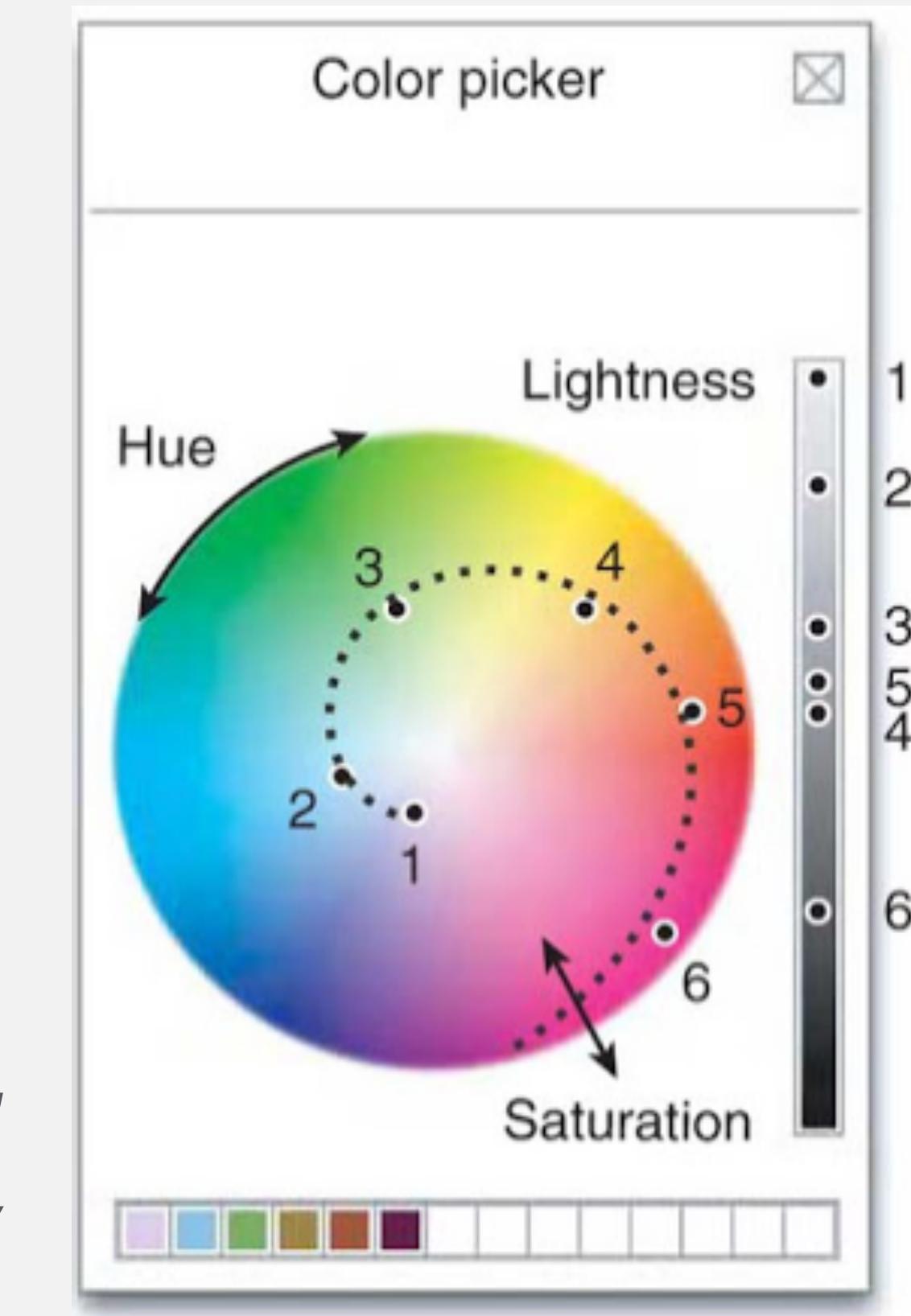
# Picking colours: not as trivial as you'd think!

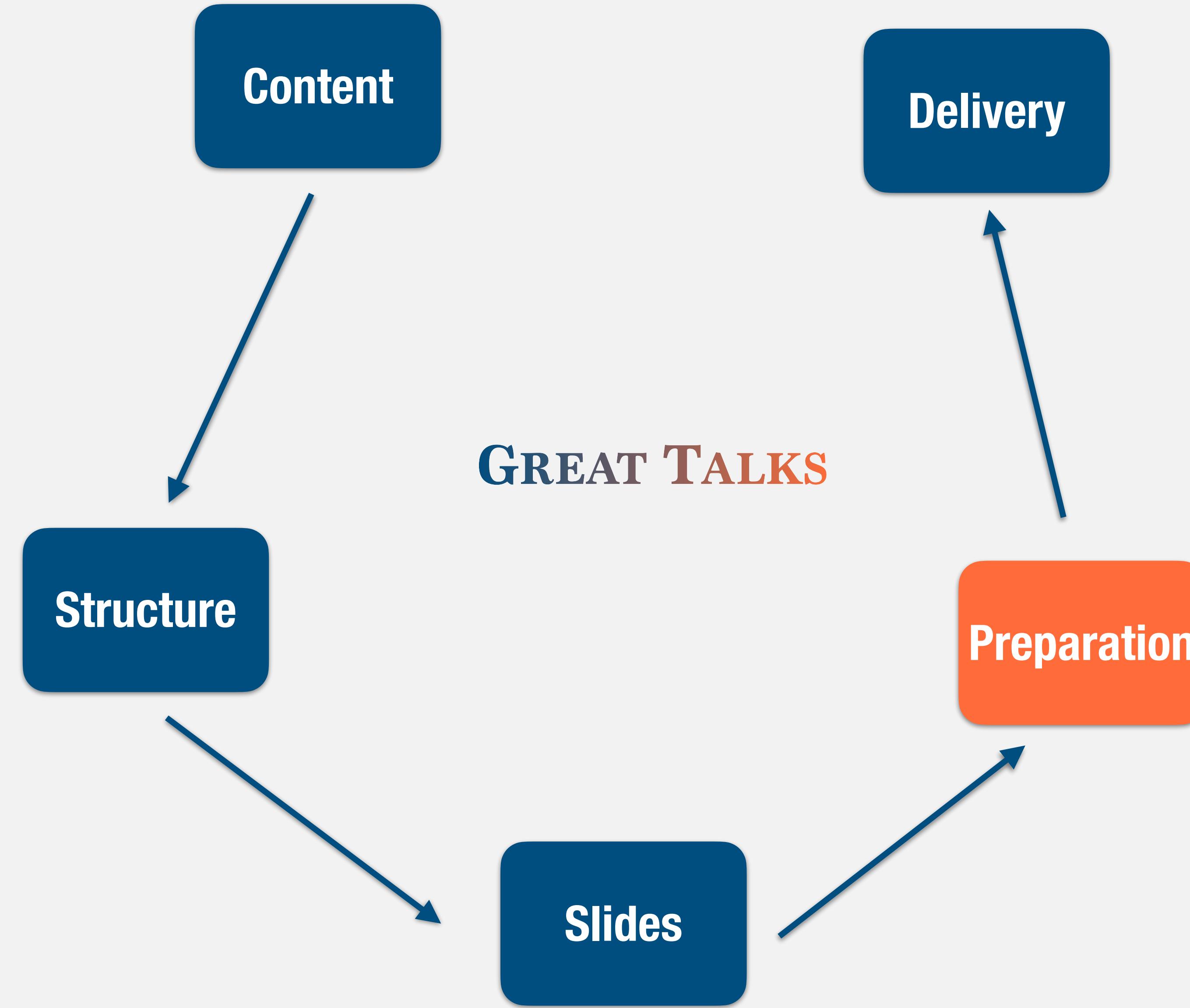
- avoid green+red, green+brown, blue+purple, etc
- avoid yellow, bright green and cyan on white
- use distinct colours (avoid red+magenta or blue+black)
- use grey scales when possible

Don't do this.



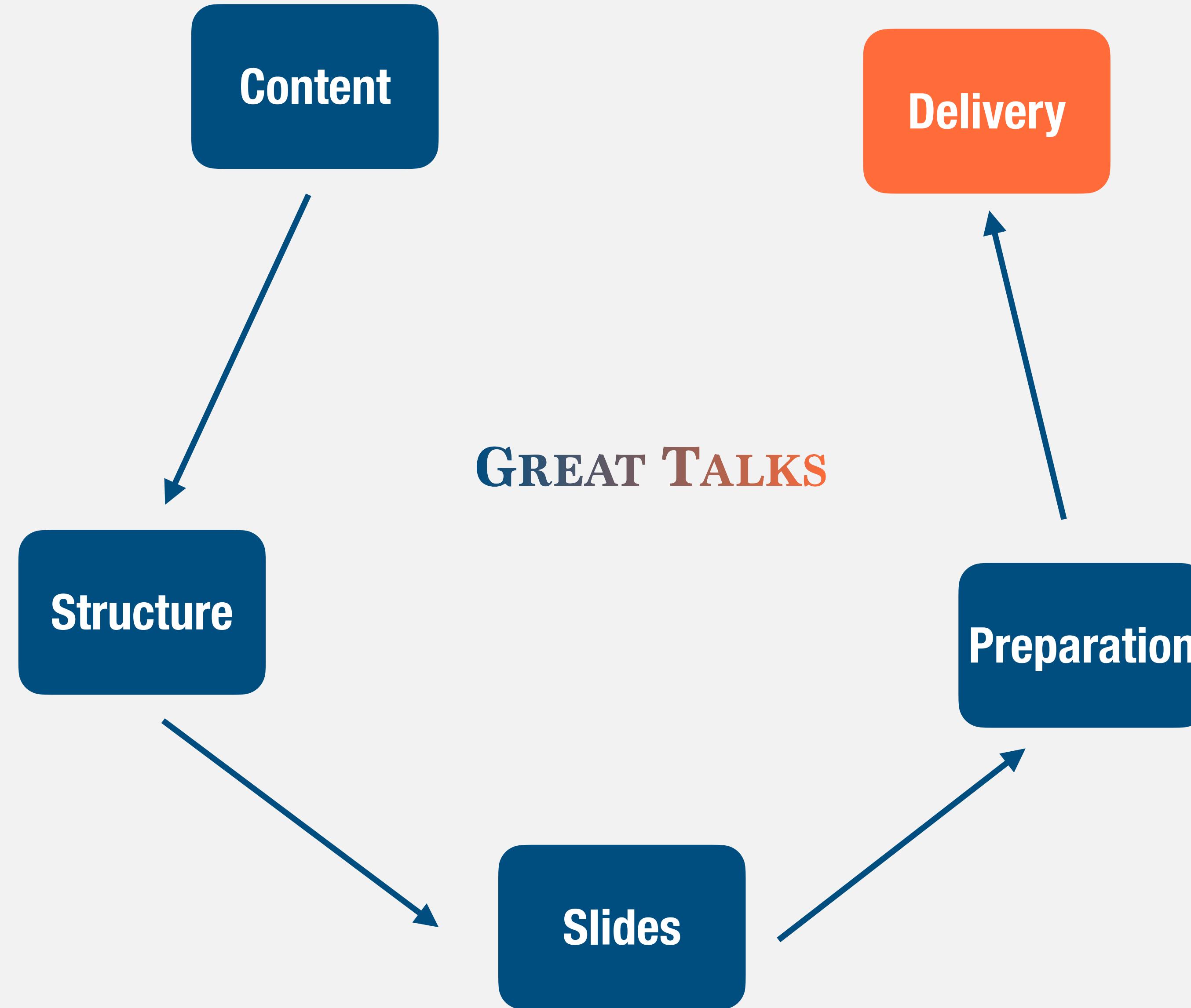
*think about light contrast +  
colour complementarity and  
harmony*





## ***Practice!!!***

- ⦿ finish talk in advance
- ⦿ establish time marks
- ⦿ leave yourself exit points
- ⦿ if a slide doesn't add, try subtracting!
- ⦿ write down and memorize first (and last) sentence
- ⦿ record yourself practising
- ⦿ test laptop/presentation on location



## Be enthusiastic, engaging, professional

- find strategies to deal with nerves
- be prepared
- project confidence and enthusiasm
- learn to enunciate
- interact with the audience
- be focused
- don't fuss over mistakes
- use humour (but don't overdo it)
- never go over time!
- give audience an ending cue
- be courteous, gracious and professional at Q&A
- study the greats: try to emulate great speakers

Some tips &  
tricks for a  
great delivery...

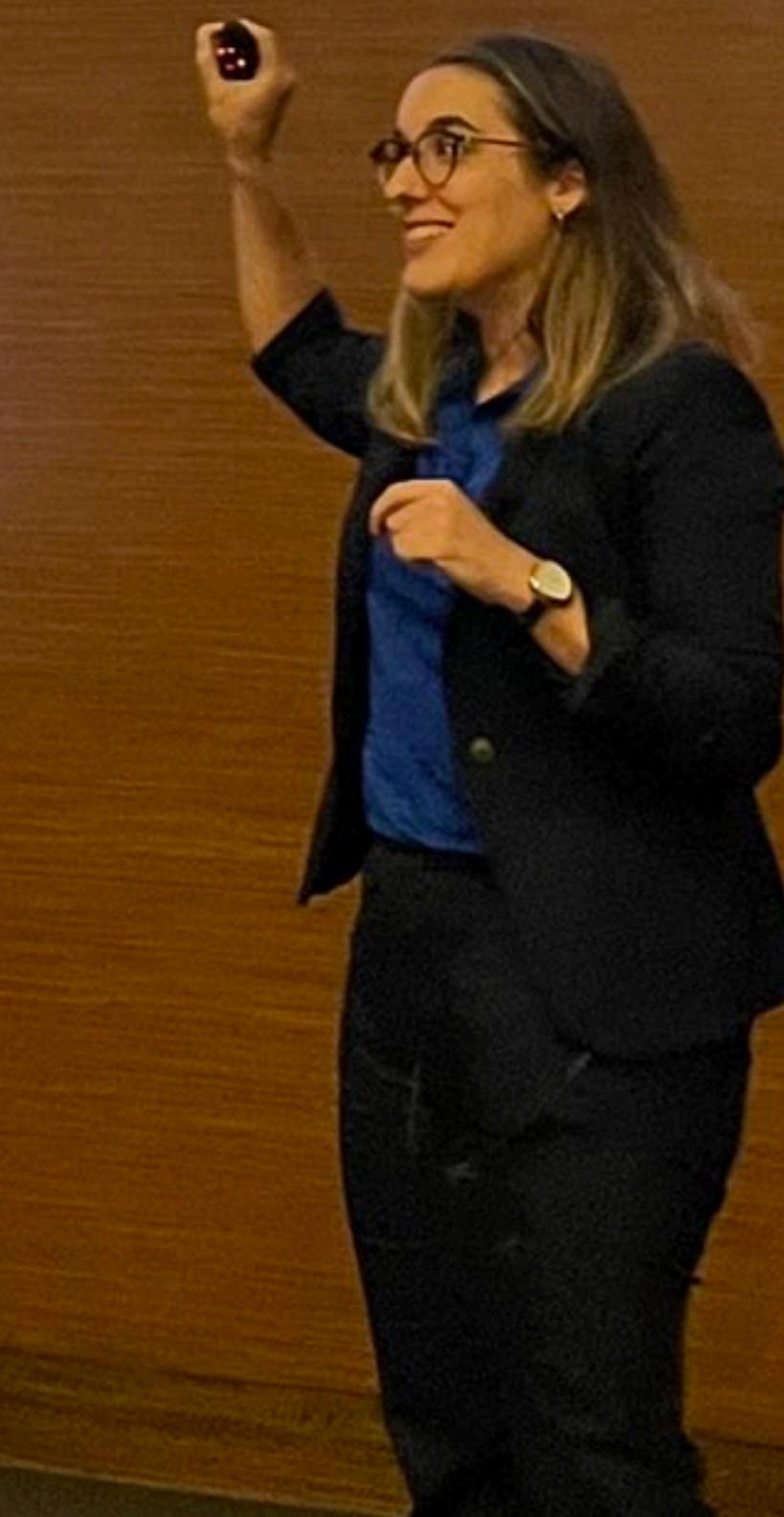


# The day of...

- Get some sleep!
- Dress appropriately (usually, in Astronomy, this means “business casual”; but dress “business formal” for a job talk).
- Looks are important. If you feel good about your appearance you will be more confident; also people should perceive you as mature and professional.
- Stay hydrated (but not over-hydrated...); beware too much coffee!
- Know your schedule.
- Arrive early and set up your equipment.
- At a conference, know the procedure for providing your talk!
- Bring some water for long talks.
- Silence your phone!

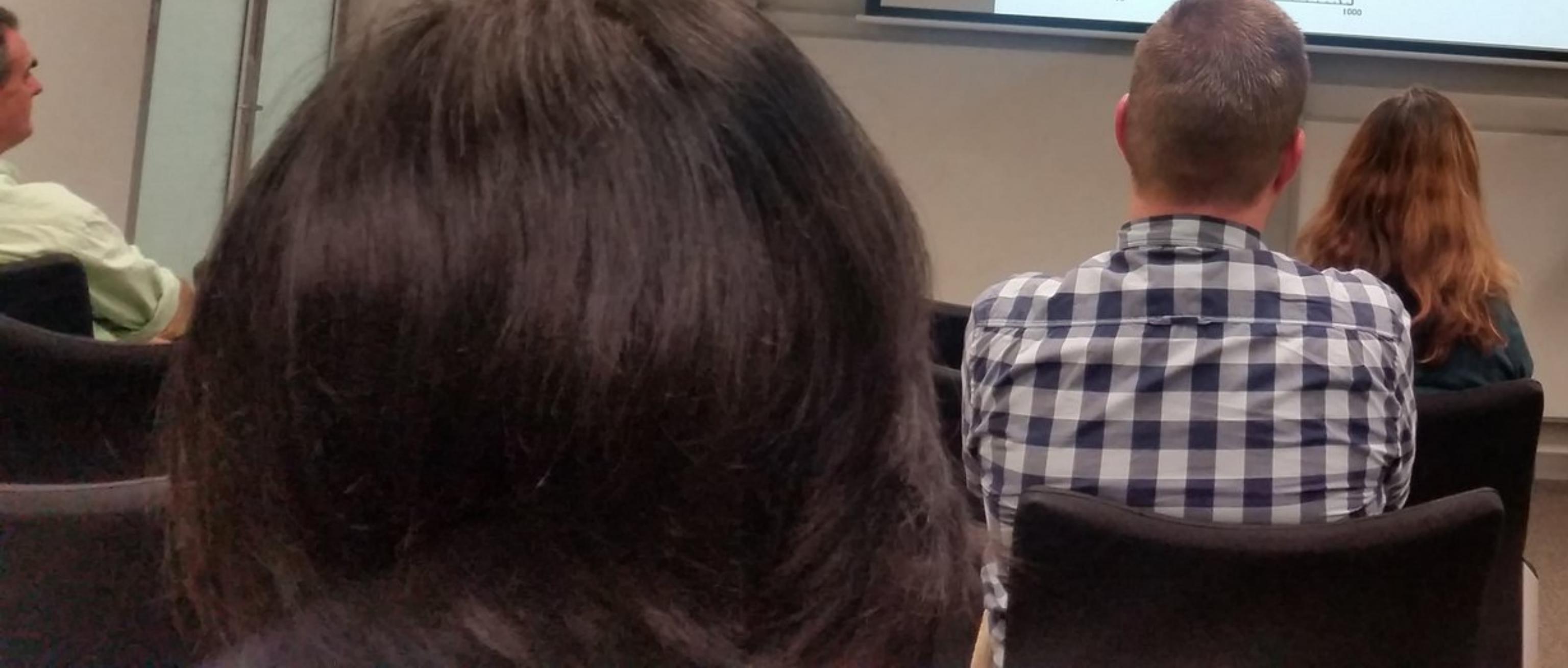
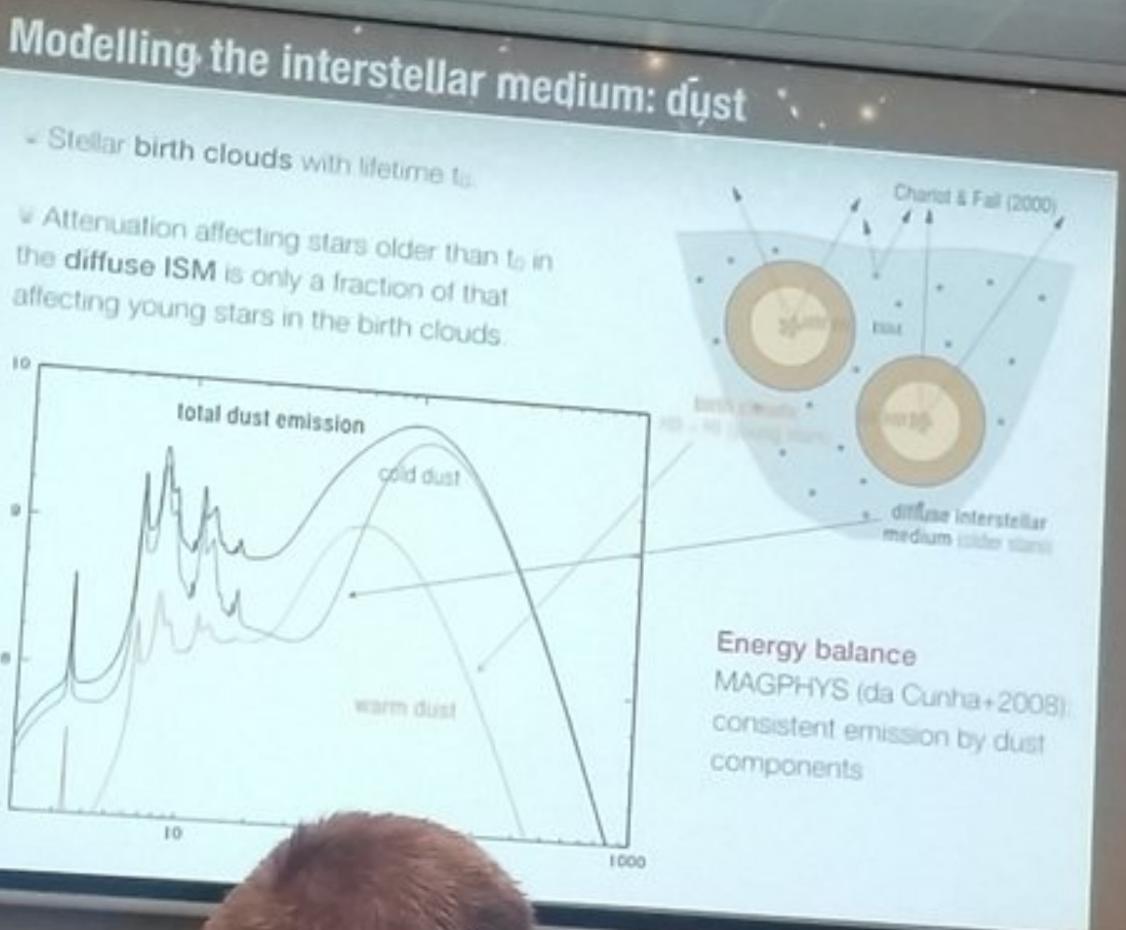
# Delivering your talk

- Be spontaneous but organized.
  - Enjoy yourself (or, failing that, pretend to do so!)
  - Don't read from notes (at most, use presenter tools to give yourself a reminder or two per slide)
  - Don't over-rehearse!
  - Don't go over the time limit! (time yourself and pay attention to chair cues)
  - Be aware of your body language
  - Don't block the view to the slides
  - Getting on and off the stage: don't rush; your movements should be unhurried and dignified.
  - Project confidence but not arrogance!
- \* Use a pointer and use it wisely



I was having fun!

I use hand gestures a lot!



# Enunciate

- Use a deliberate pace, slower and clearer than normal conversation (but not too slow!)
- Watch out for verbal tics ("ummm", "uhh", "you know", "ah", etc)
- Add excitement to your voice: avoid monotone at all costs; vary tone and tempo
- Add pauses for emphasis
- Make sure you can be heard – project your voice, don't speak too softly
- If you're unsure how to say a word, look it up or ask a native speaker in advance. It's ok to have an accent, but make sure you know where to put the stress in English words.
- If there's a microphone, make sure you stay at the same distance as you speak.



# Interact with the audience and be present

- Look at the audience! Don't ignore them!
- Make eye contact (but don't linger on one person...)
- Face the audience even when talking about slides
- Use the entire "stage" when possible (but don't pace!)
- Be present and pay attention
  - Pause every once in a while and check for questions (don't have to do this explicitly)
  - Look at the chair for time cues
  - Use the pointer wisely



# If you make a mistake

- DON'T WORRY!
- Take a moment to collect your thoughts (but not too long)
- Make a quick joke of it if you can
- Forgot what you were going to say? Repeat what you just said, then move forward.
- Skip something? Don't go backward – work it in later, or maybe you'll realise you didn't need it after all.
- Say something wrong? Say it again right! (And thank that really smart audience member who helped you realise it)
- Mistakes happen. But the better rested and prepared you are, the fewer mistakes you will make.



# Humour: to joke, or not to joke

- Humour can be an excellent way to keep the audience engaged, but use sparingly (this is a professional presentation, not a stand-up comedy set)
- Jokes are good if they are “natural”, occasional, and NOT mean-spirited
- NEVER make a joke at someone else’s expense (but self-deprecating jokes can work)
- NEVER use inappropriate language
- Use memes and other pop culture references sparingly (if you’re going to use humour, everyone should get the joke)
- You can vary the tone in other ways, such as anecdotes or questions.



## YOUR CONFERENCE PRESENTATION

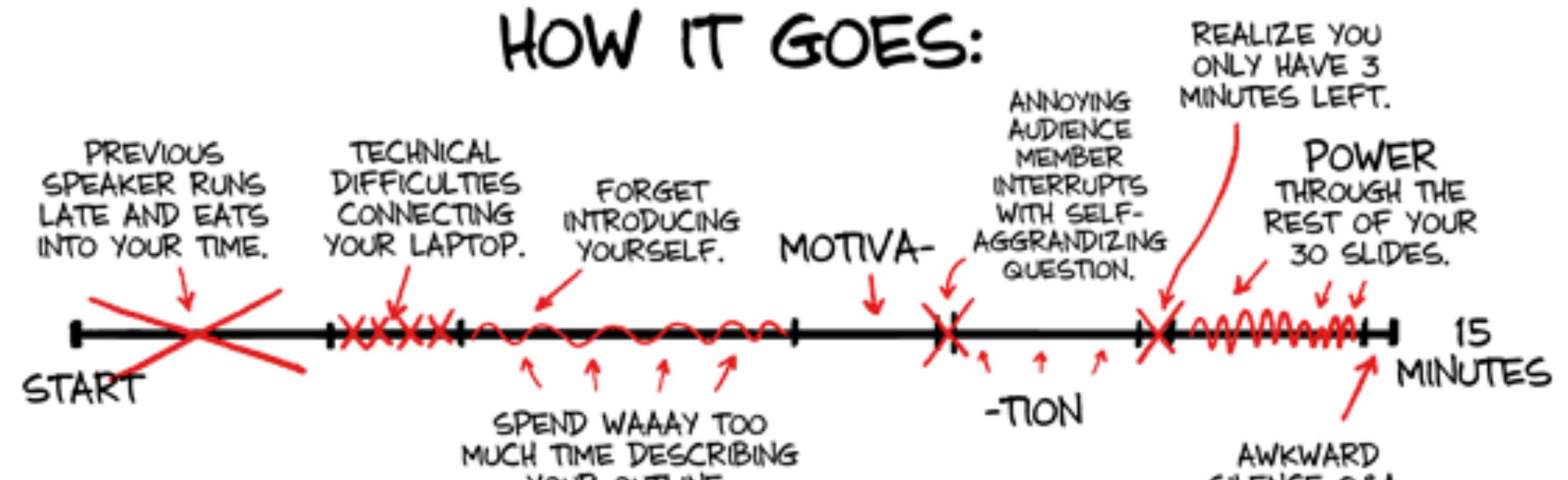
# Time management

- Practice and time your talk before delivery
- If you are delayed because of lots of questions, it's ok to eat into question time – but not all of it!
- Give yourself exit points
- Identify slides/discussions that are tangential to the main point
- You still need to be convincing – be quicker, but don't skip essential supporting arguments

### HOW YOU PLANNED IT:



### HOW IT GOES:



# Question time

- Be courteous and professional at all times
- Don't be afraid of questions
- Think about what questions might come up, and prepare answers in advance
- Make the question-asker feel smart!
- Try to answer concisely but completely
- Direct the answer to the whole audience
- If you didn't understand the question, ask the questioner to repeat or rephrase the question
- If you don't know the answer, admit it; tell them you'll look into it and get back to them
- To avoid having no questions: consider planting the first question with the chair or a friend (but if it's a good talk you'll get questions!)



**Content**

What is the take-home message?

**Structure**

Tell a story!

**Slides**

They must complement not replace the speaker!

**Preparation**

Practice, practice, practice!

**Delivery**

Be enthusiastic, engaging, and professional!

**Content**

What is the take-home message?

**Structure**

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**Delivery**

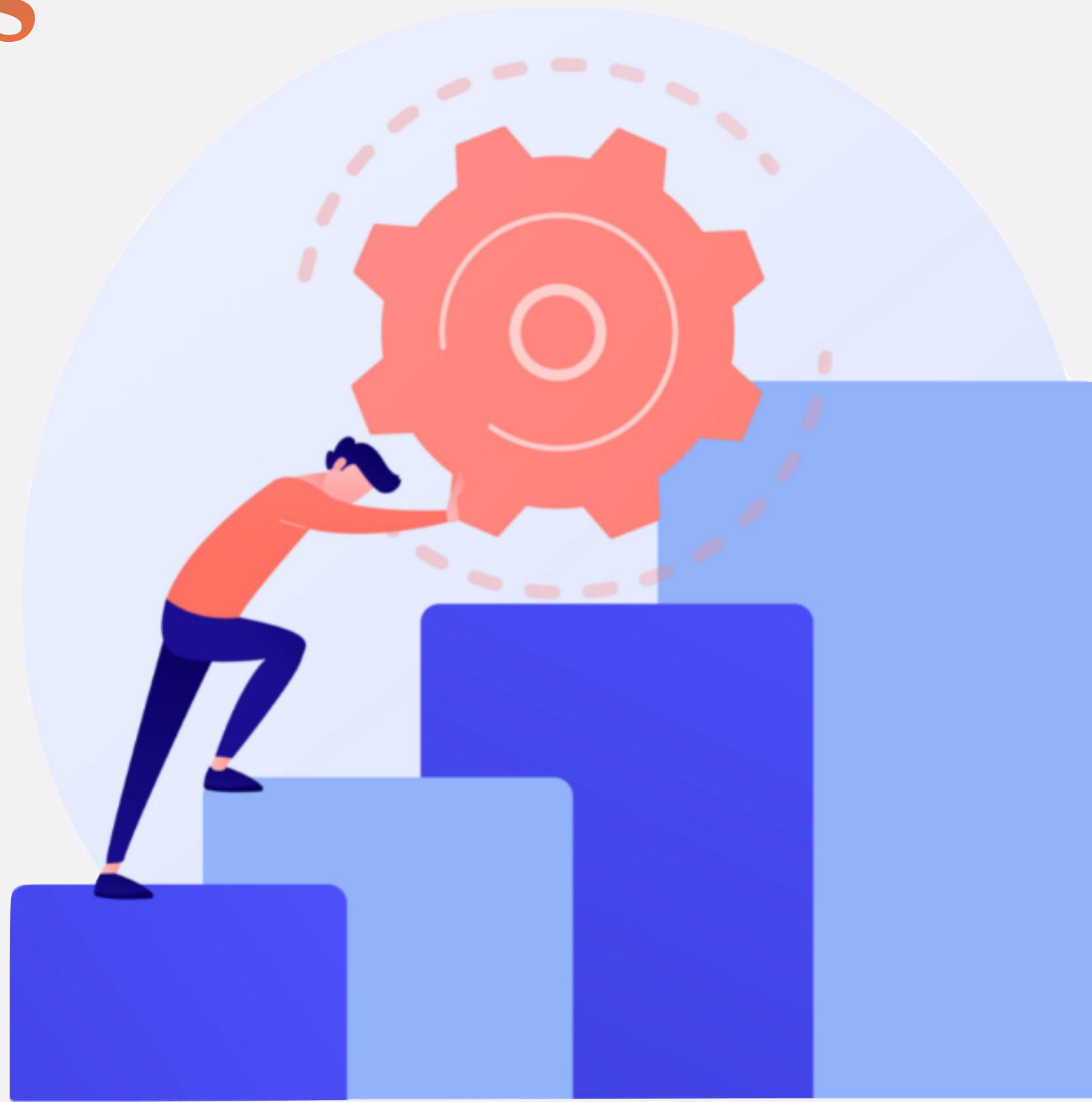
Be enthusiastic, engaging, and professional!

**Great presentations require  
lots of preparation & practice!**

# ONLINE TALKS



# The challenges



Technology

Communication

Interactivity

# Two modes

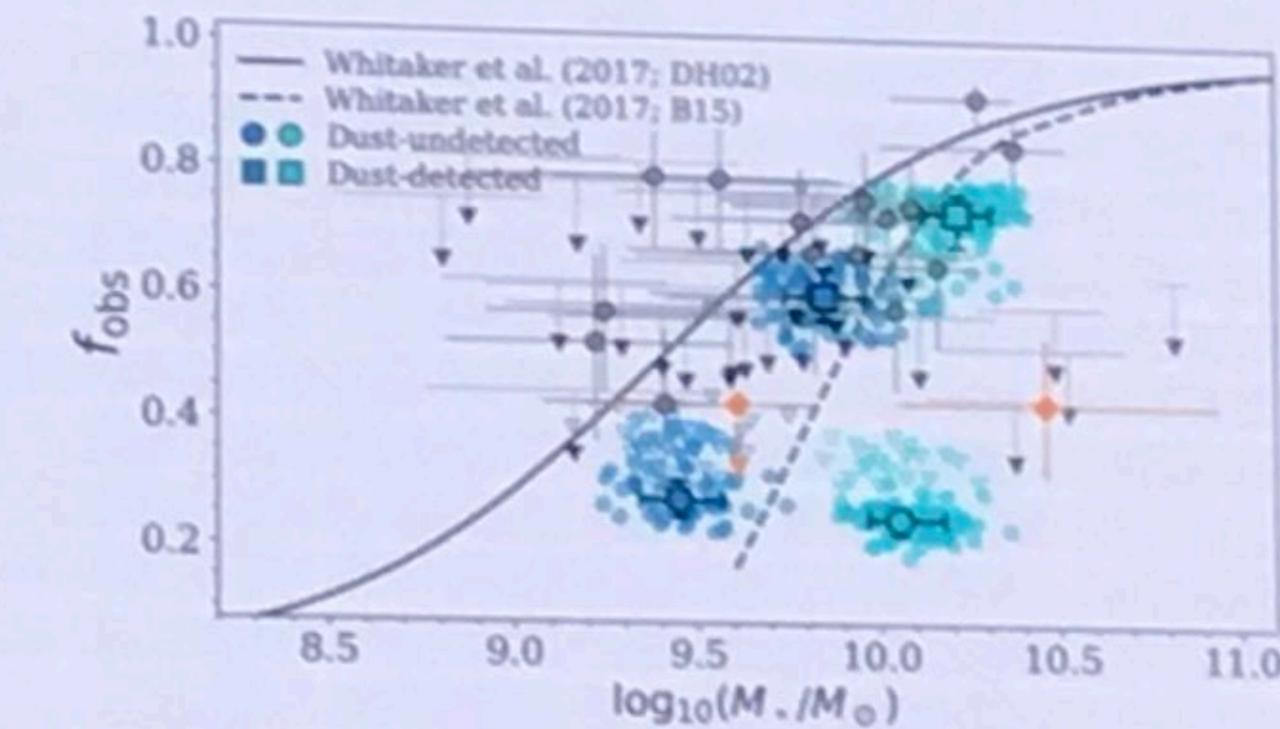
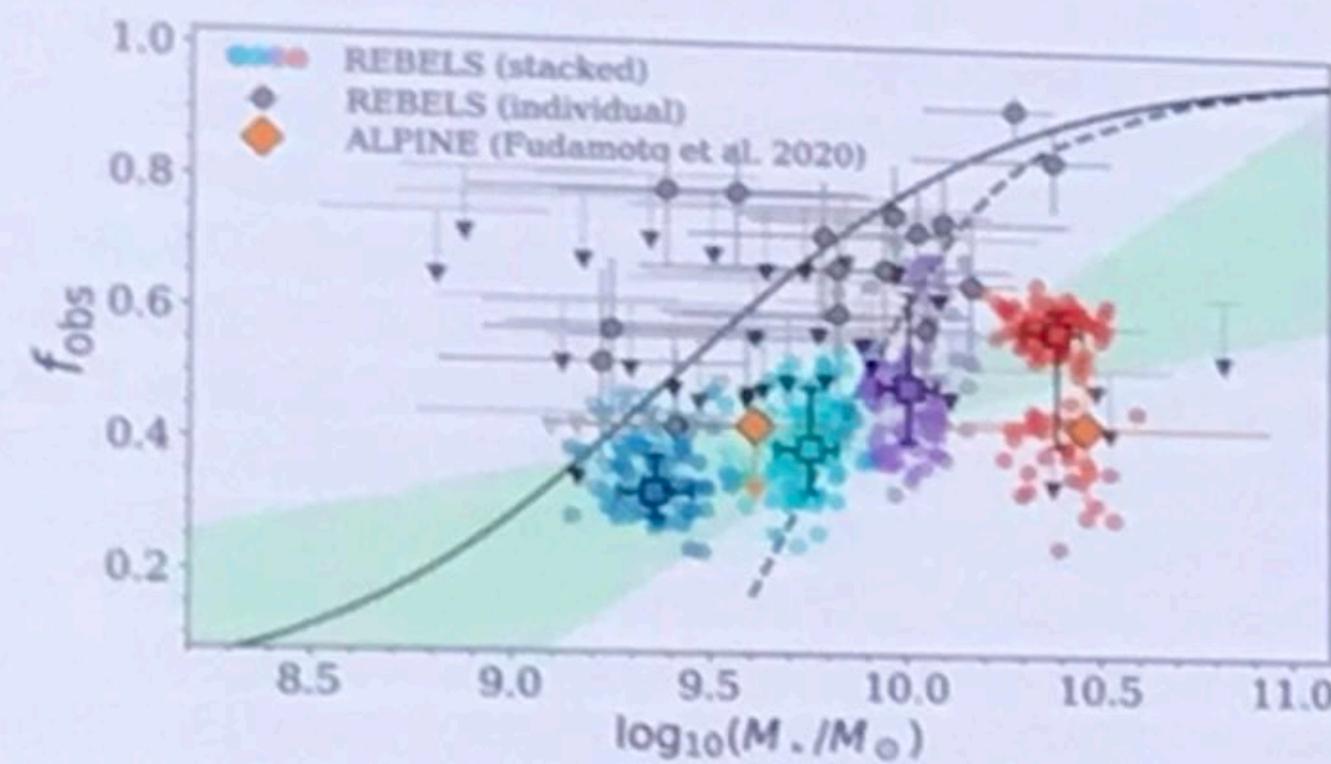
## ONLINE ONLY

Everyone is sitting in front of their own computer, in their own space

## HYBRID

You are delivering a presentation by video, but some fraction or all of the audience are in a room watching together

## Fraction of dust-obscured SFR in REBELS galaxies



Algera et al., submitted

- Fraction of SFR that is obscured by dust depends on stellar mass (similar to what is seen at lower redshift).
- $f_{\text{obs}} \sim 0.3 - 0.6$  for galaxies with  $\log_{10}(M_{\star}/M_{\odot}) \sim 9.4 - 10.4$



# Some changes in how you prepare the talk

- Keep slides simple: fewer opportunities for difficulties, more focus on what you are saying
- Think hard about movies: can your internet connection support them?
- Font size optimized for screen viewing (can be a bit smaller)
- Include more explicit summary/checkpoints
- Want to use presenter view? It's complicated... keep notes some other way.
- Pay VERY close attention to precise language
- How will you replace your pointer?

# How to practice your online talk

- To the best of your ability, practice using the same technology with which you will deliver your talk
  - is your internet connection good enough?
  - set up camera: lighting, background, proper angle
  - record yourself!
- Log into the system you'll use EARLY and make sure you can start smoothly (test screen sharing, slide transitions, microphone/camera, etc.)

# Delivery

- Have the video on so people can see you!
- Look at the camera!
- Avoid problem clothes: small patterns, white/black/bright red
- Find a good broadcasting location: quiet, neutral background, comfortable
- Keep in mind you are likely to be recorded
- For longer talks, identify points where you can switch from slides to video for a bit (if technology allows)
- You must rely entirely on your voice, not body language, eye contact, etc
- Enunciate and use precise language!
- Use voice modulation to inject a bit of variety
- Verbal tics like “ummm” are more noticeable in this environment

# Interaction

- Much harder for people to jump in – pause to give them a chance to do so, or to type a question in the chat
- While sharing your screen, use Gallery View to gauge how people are following
- Who will be monitoring questions? Do you have to look for “raised hands” or is there a chair to do so?
- Holding attention over a longer talk will be EVEN more difficult online: consider interaction tools? e.g., whiteboard, polls, etc.

# ONLINE TALKS - SUMMARY

- Rehearse using the technology
- Be precise and careful with words and slides
- Don't introduce potential disruptions
- Use your voice as actively as you can

