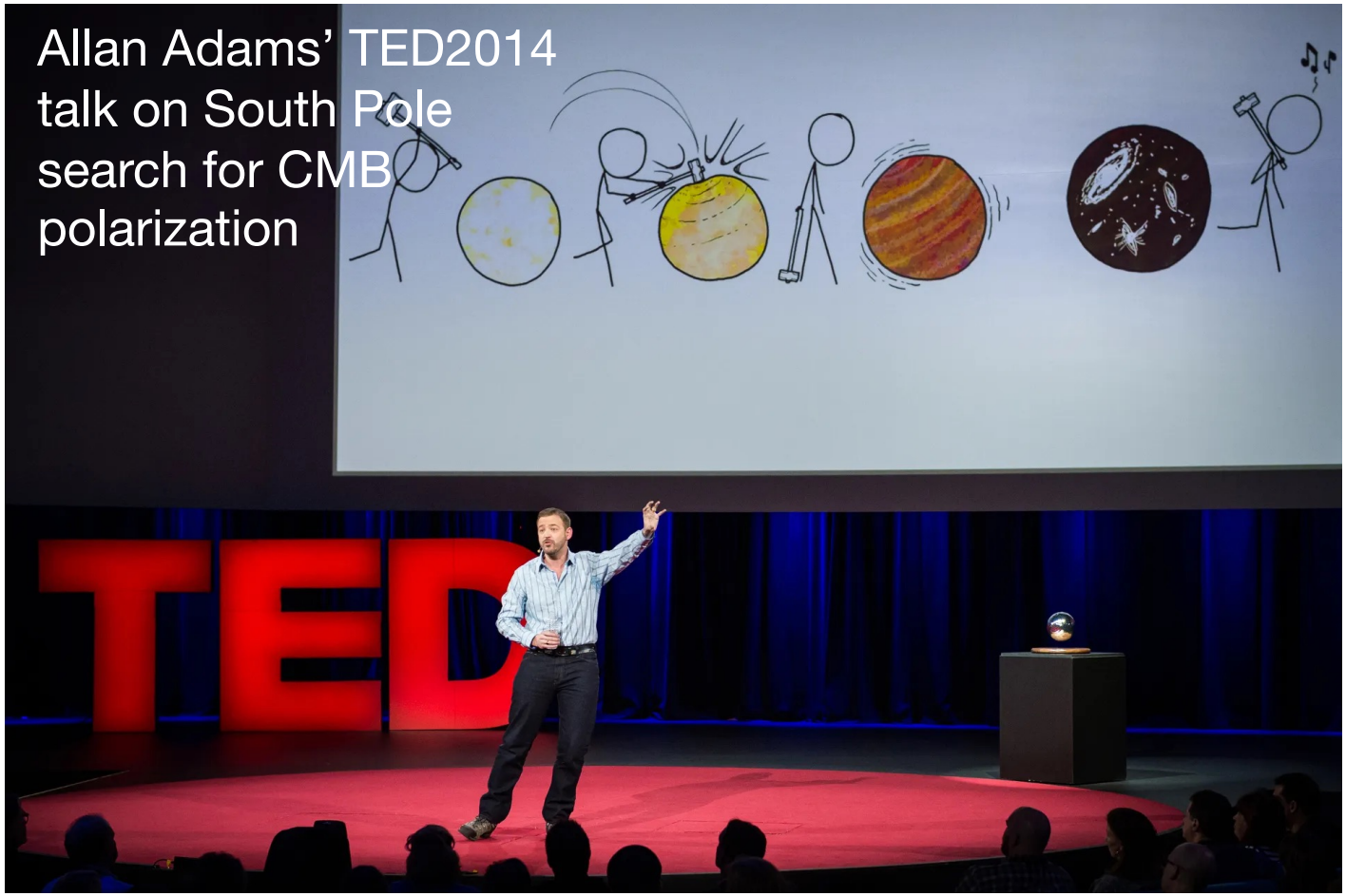
Suggestions for Your Talk



John Matthews
Professor of Physics, U. of New Mexico

1st what is your goal?

Be aware, and choose the goal of your talk.
Is it:

- to entertain?
- to impress?
- to communicate? ← else we're done

[Don't worry: a good communicator will automatically impress and entertain the audience!]

2nd keep the talk structure simple

What is the topic and why it it interesting?

What was your (part of the) project?

ONE selected part that you found most interesting or rewarding or challenging ... ie both details AND more personal.

What did you learn?

3rd to nth keep focus on communicating

A few good habits:

- One topic/issue per slide and put a short title on each slide to highlight the main point of the slide.

- Distill your message, thus:
  > the minimum number of words and/or math
  > the most relevant figures

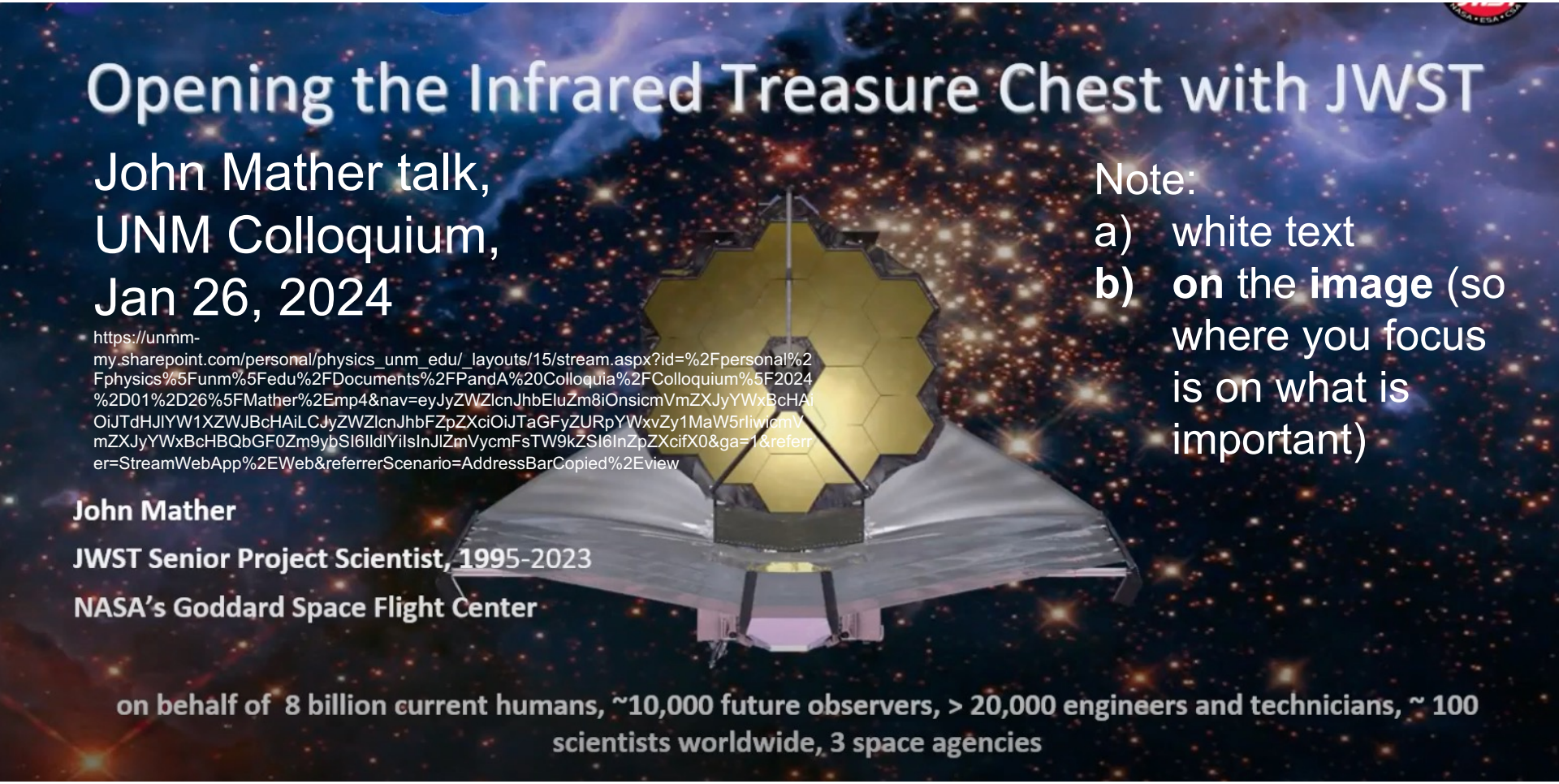
- Keep figures large, and put text on (not beside) the figures

- Use only black or white text

- Circle the important, thus avoid using a laser pointer

- Include slide numbers (helps when there are questions)

Example: What is the topic and why it it interesting?

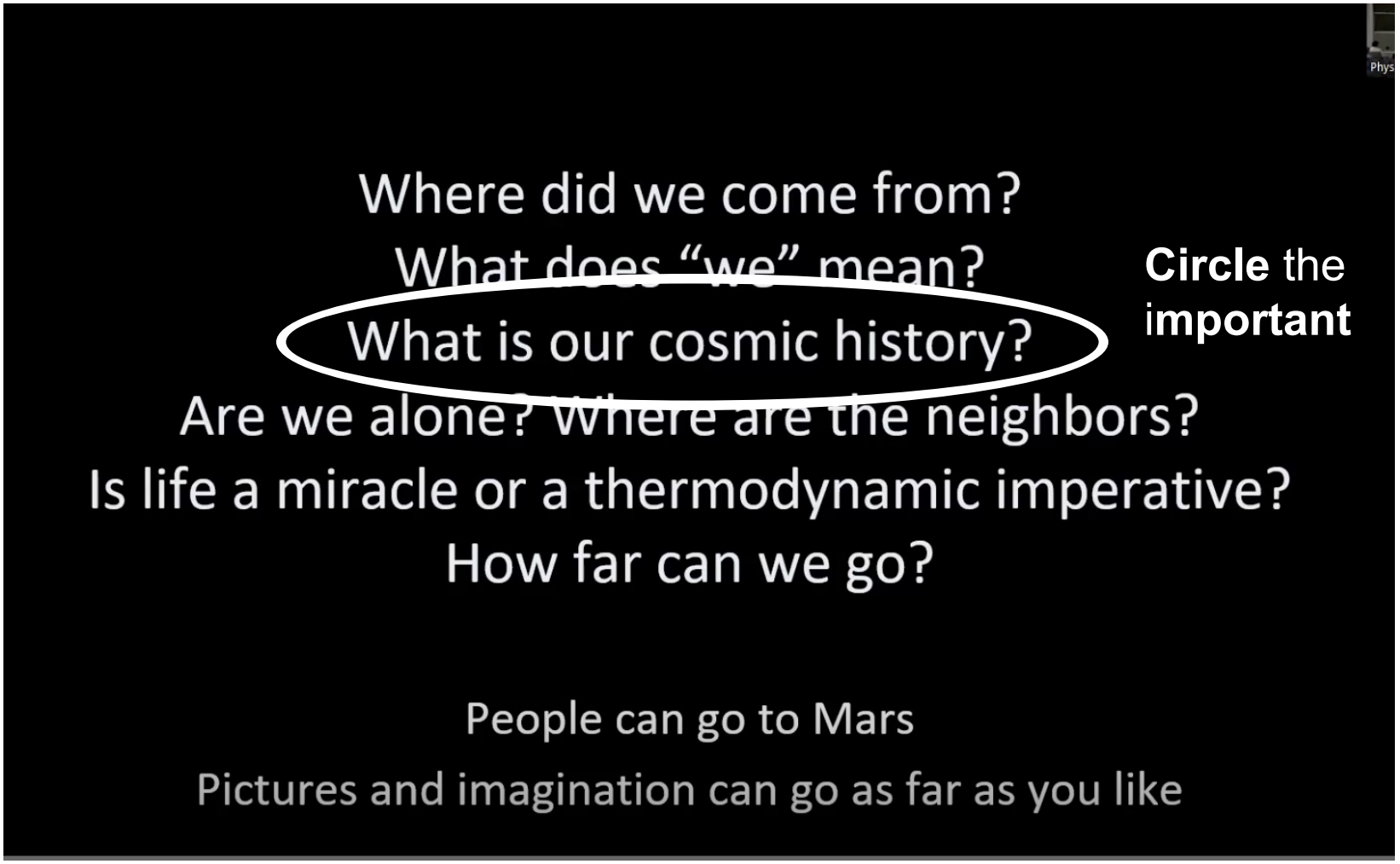


Note:

a) white text

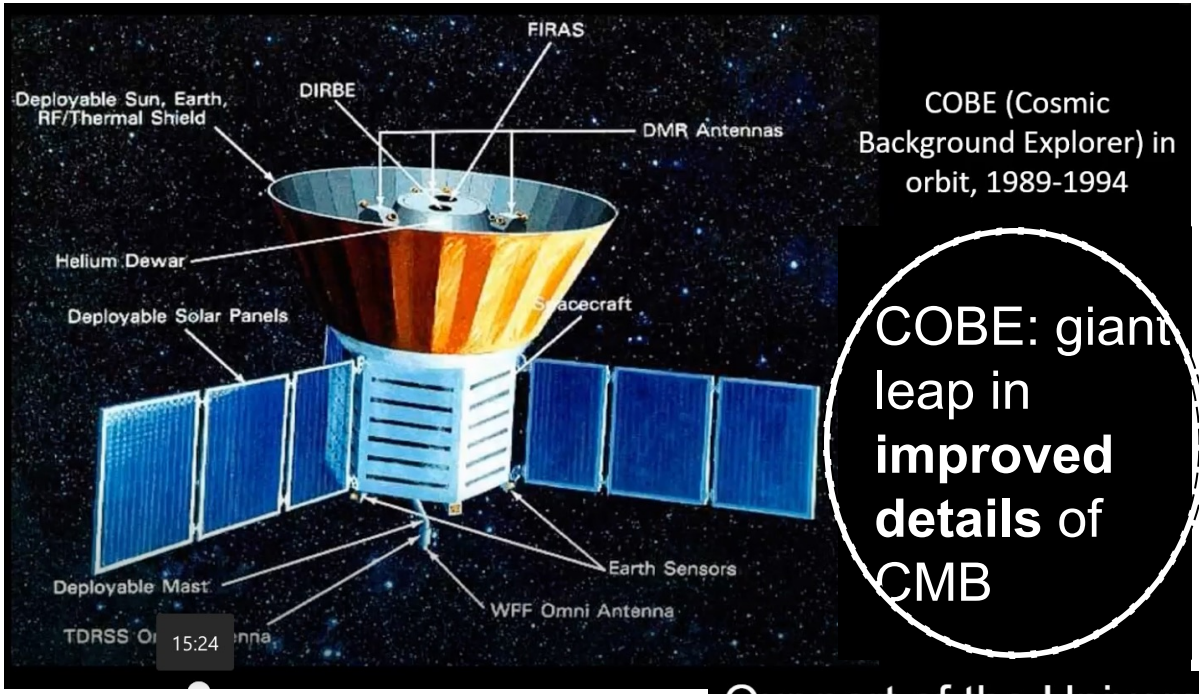
b) **on** the **image** (so where you focus is on what is important)

Example: What is the topic and why it it interesting?



Circle the **important**

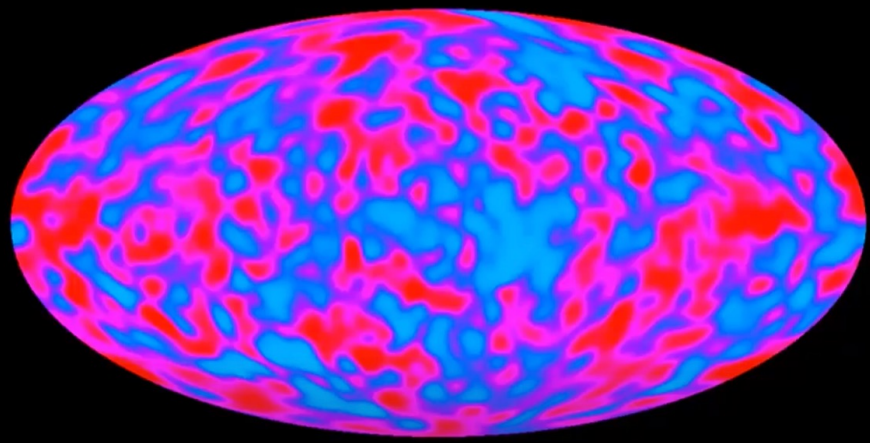
Example: What is the topic and why it it interesting?



COBE (Cosmic Background Explorer) in orbit, 1989-1994

COBE: giant leap in **improved details** of CMB

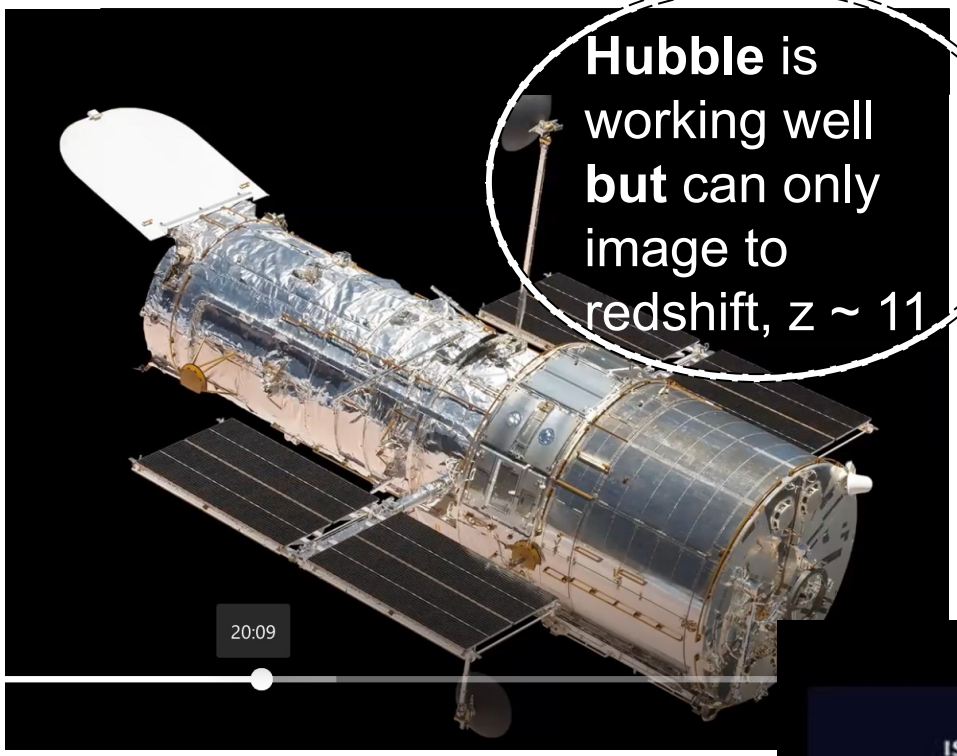
Our part of the Universe (age 400,000 yrs) from COBE



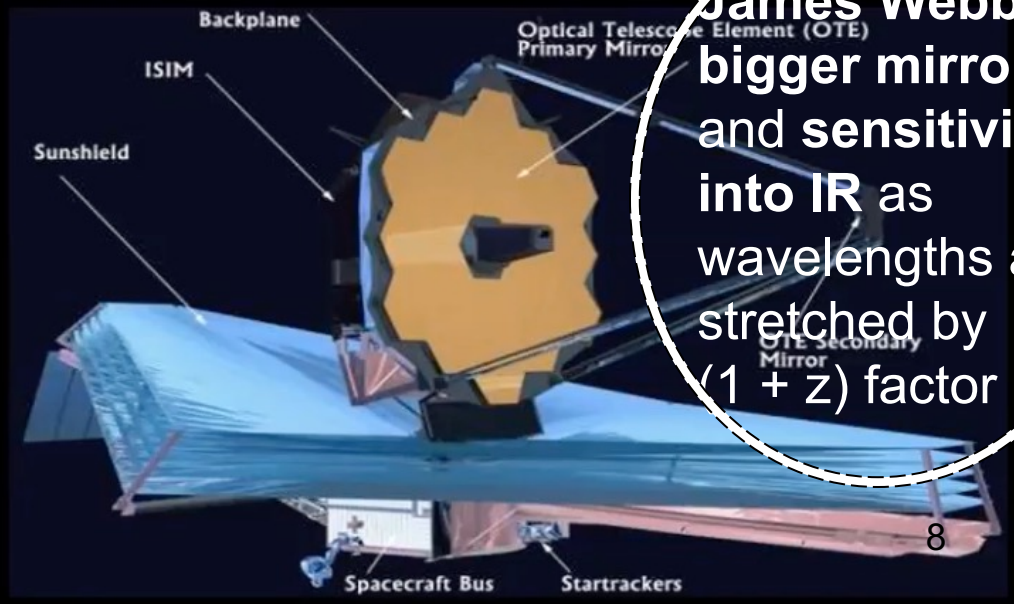
The sky as seen with millimeter wave eyes

SOURCE: NASA/COBE

Example: What is the topic and why it it interesting?

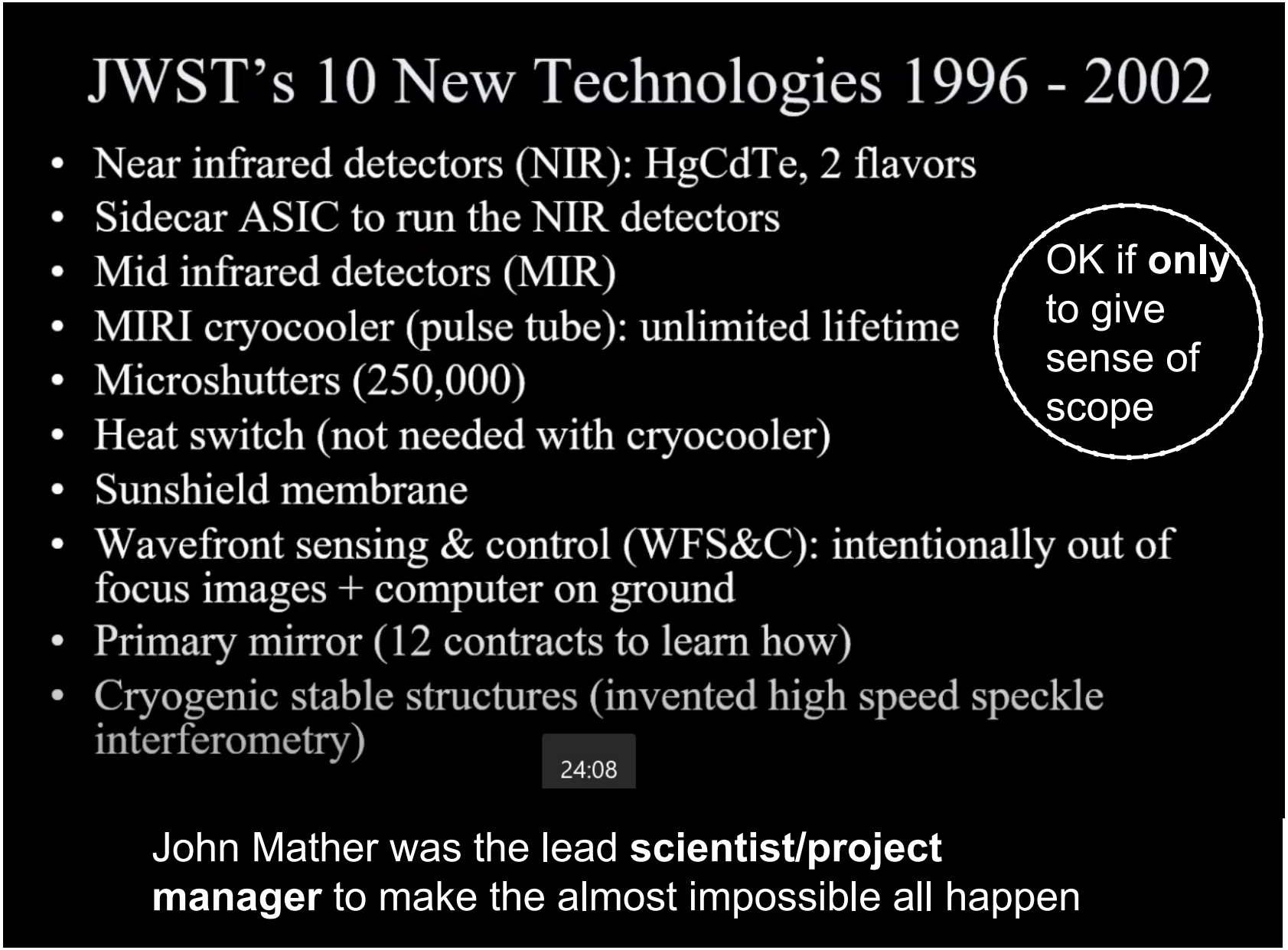


Hubble is working well **but** can only image to redshift, z ~ 11

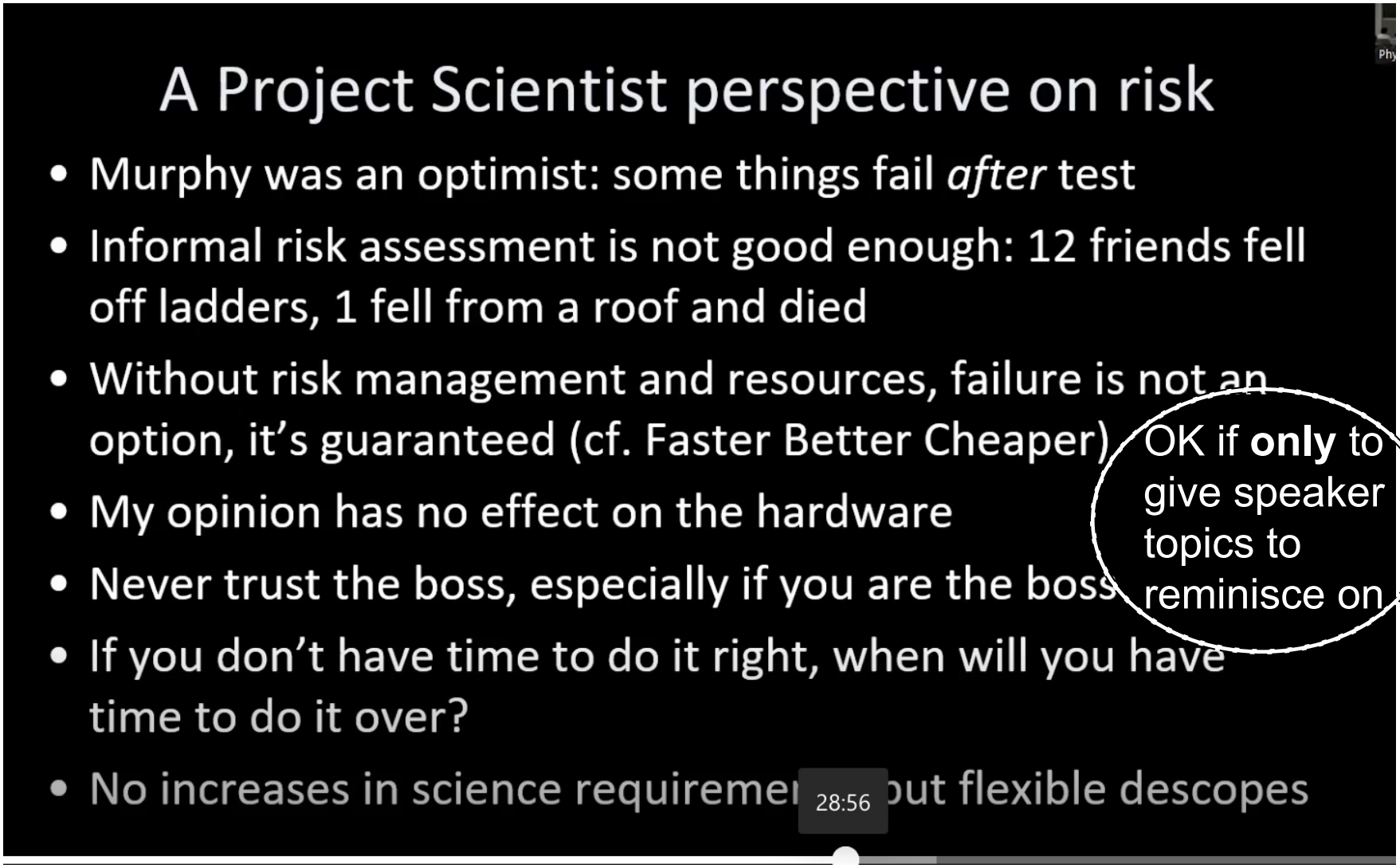


James Webb: **bigger mirror** and **sensitivity into IR** as wavelengths are stretched by (1 + z) factor

Example: What was your (part of the) project?



Example: Selected part that you found most interesting



Example: Selected part that you found most interesting

JWST risk management plan

Managing Risk for the James Webb Space Telescope Deployment Mechanisms: Enabling First Light

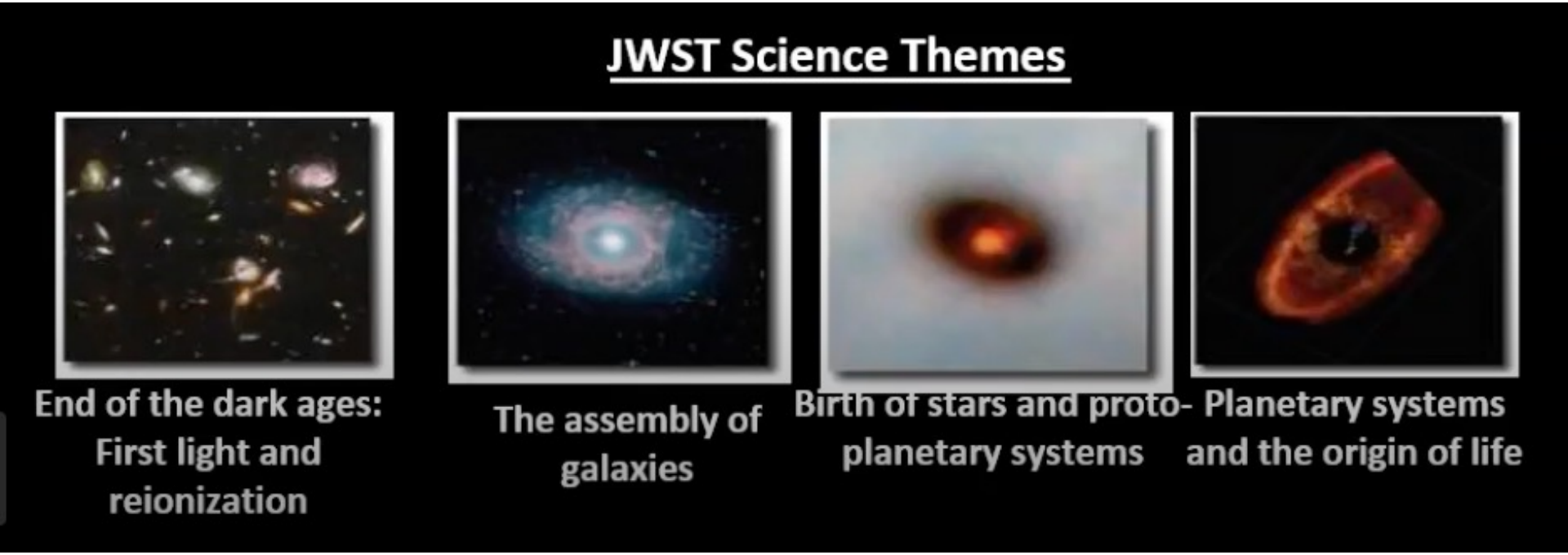
Prince Kalia, John Evans and Mike Menzel – NASA

Halil A. Kilic: Northrop Grumman

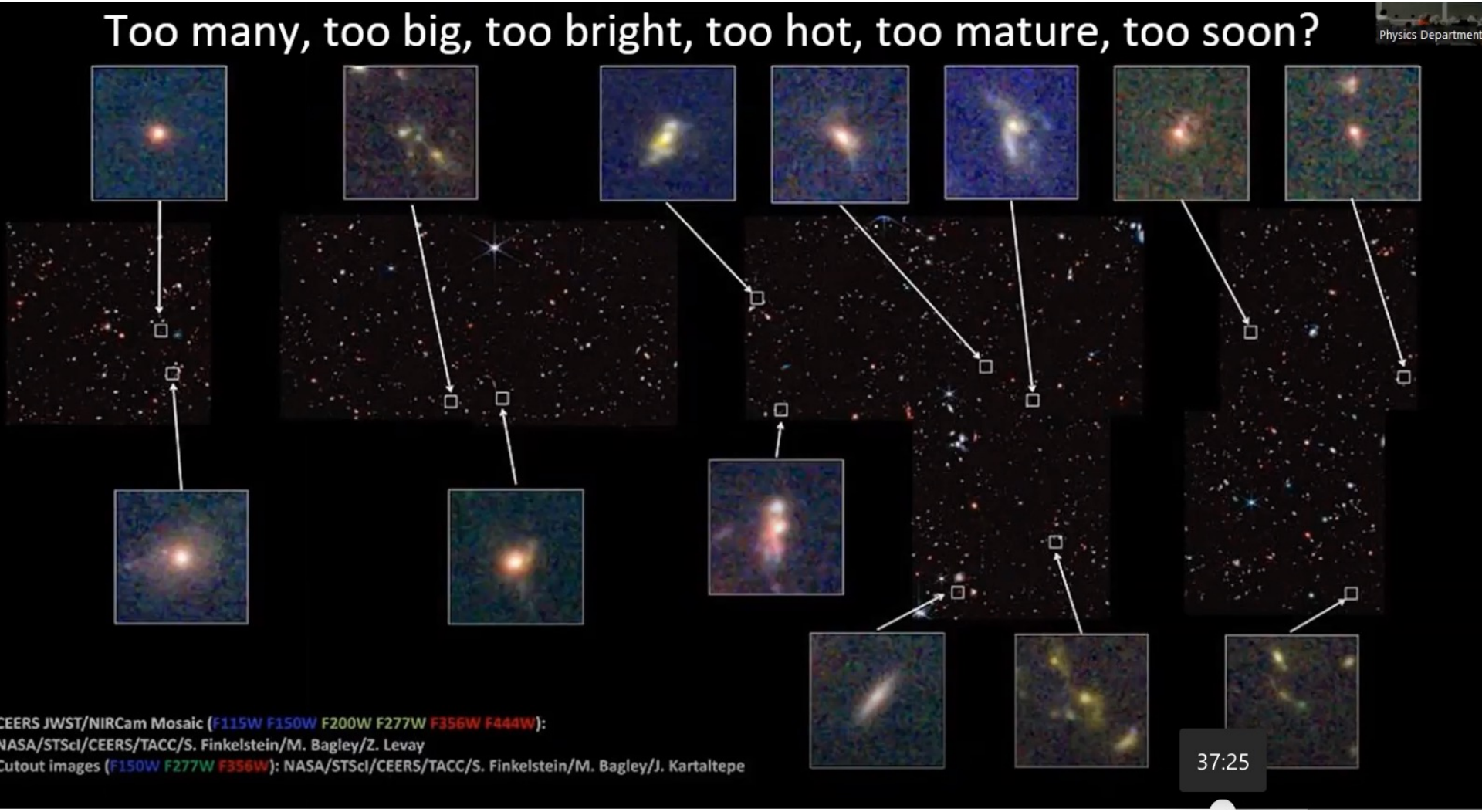
OK if **only** to give speaker topics to reminisce on

- 344 single point failures
- Very formal verification process including common cause impact analysis following Challenger lessons
- Decision ground rules for ~ 700 risk items
- At least two independent checks of everything important, from hardware to simulations to software
- Process monitoring for non-repeatable items (e.g. non-explosive actuators, rebuilt after use)
- 3 cryo tests of instrument module, 1 full optical test at JSC, 4 deployment tests
- Years of rehearsals for procedures using digital twin

Example: What did you learn? (recap the goals)

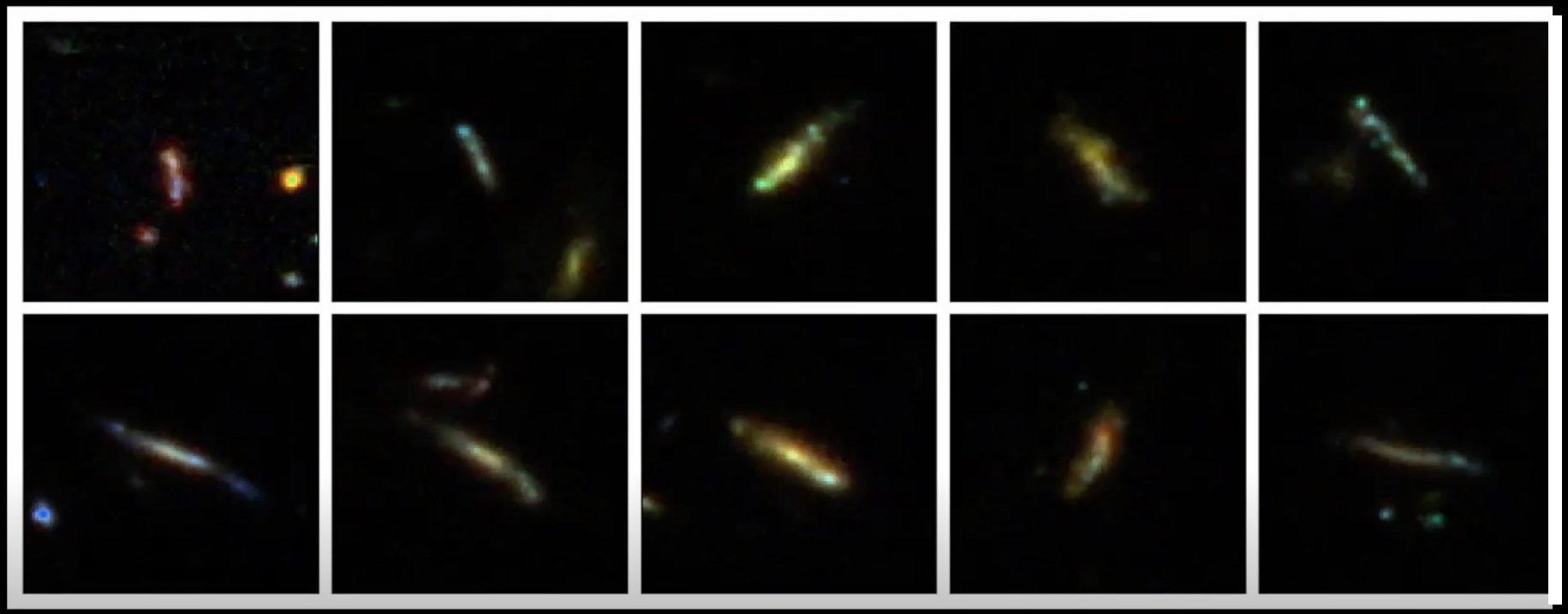


Example: What did you learn? (early universe)



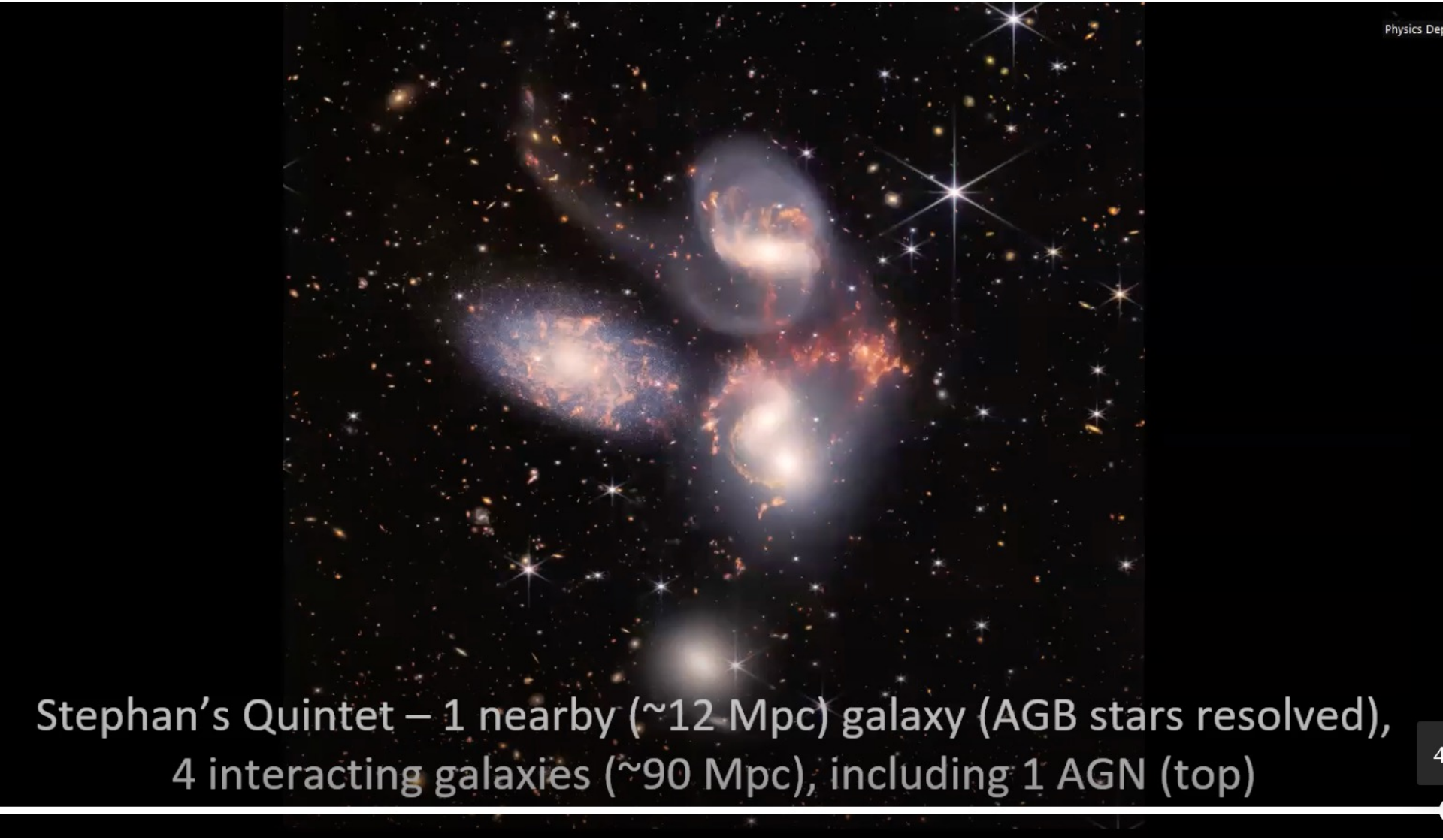
Example: What did you learn? (early universe)

Too long and stringy too?

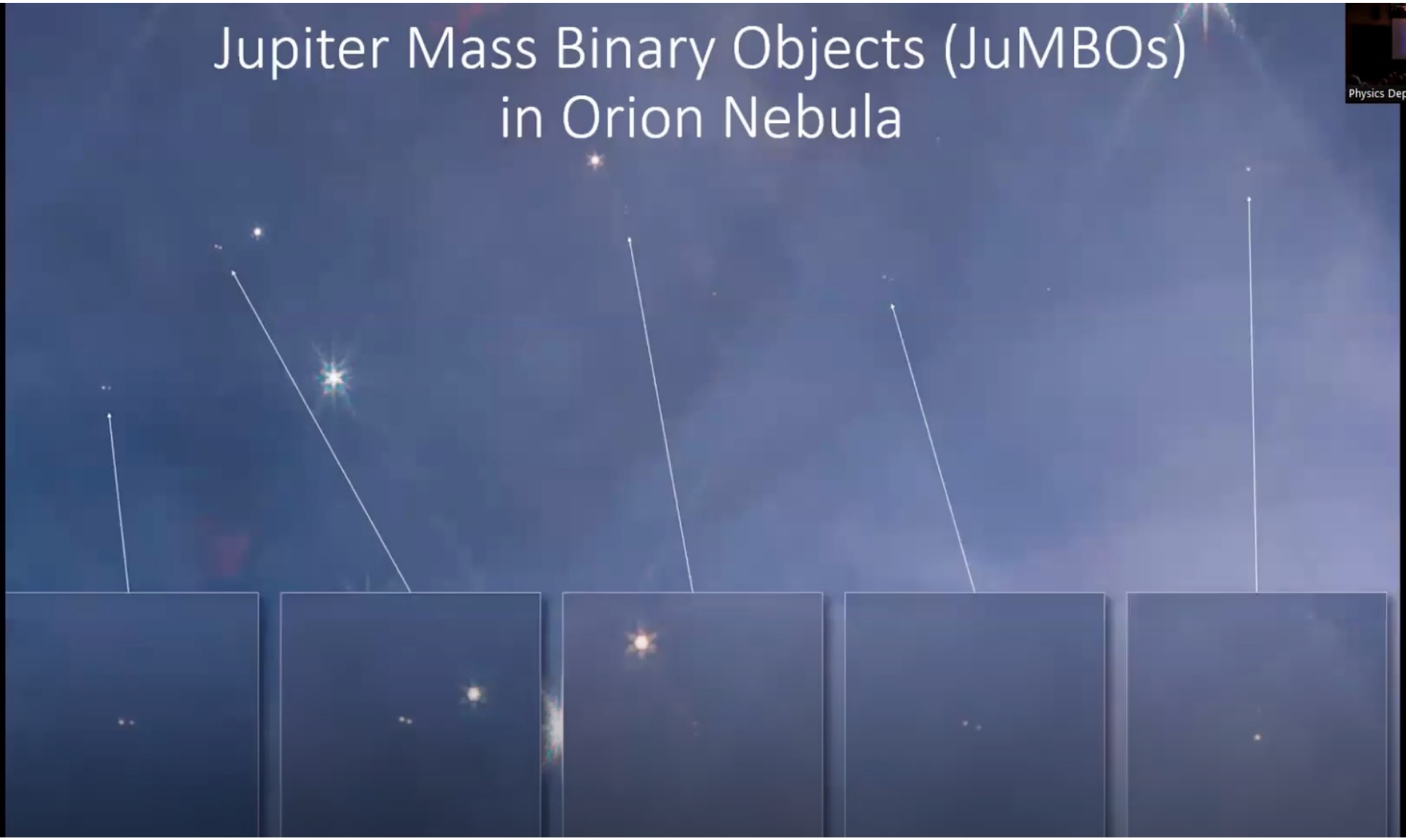


Pandya et al, 2024. ApJ. Cosmic Evolution Early Release Science, or CEERS, survey.

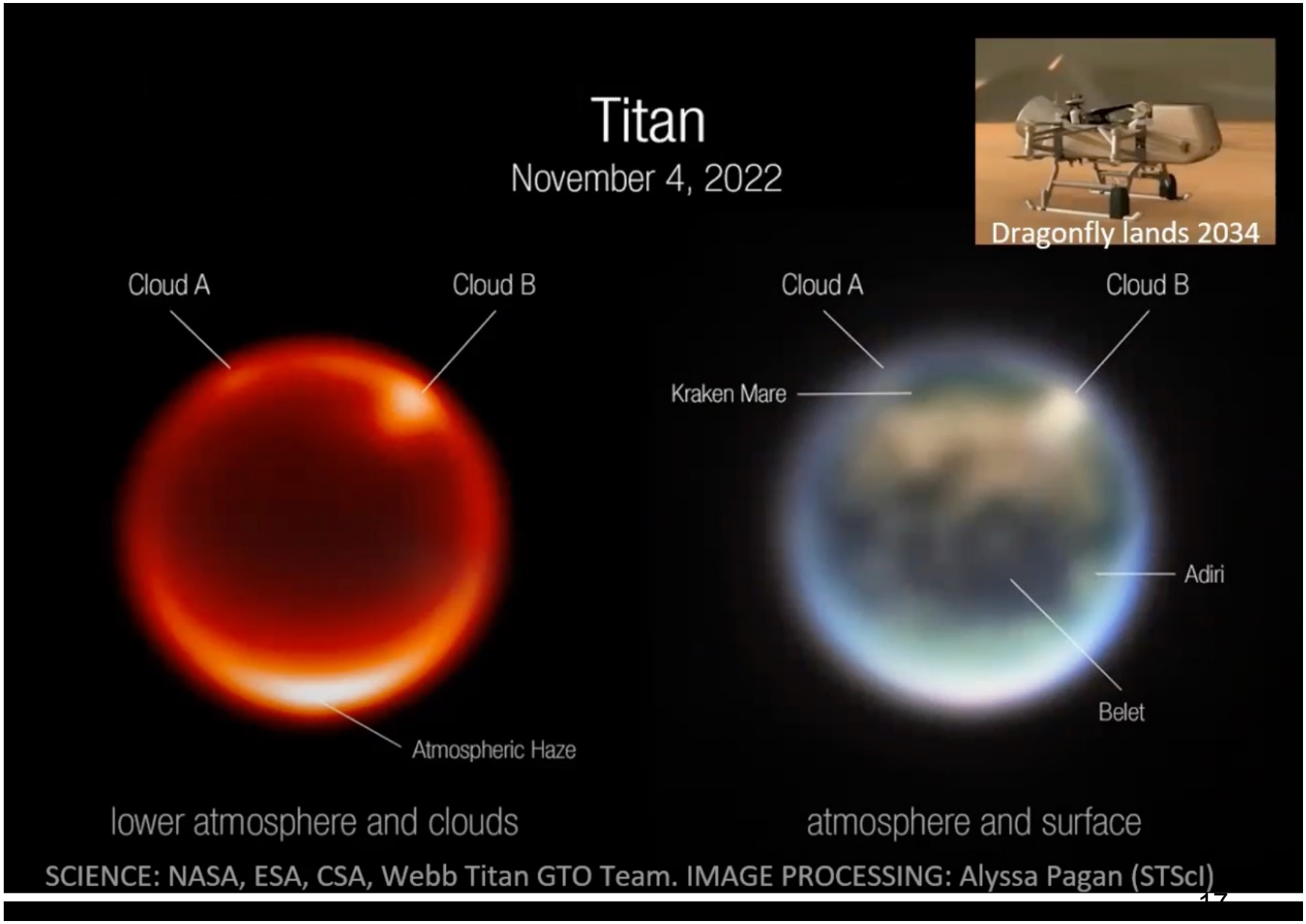
Example: What did you learn? (assembly of galaxies)



Example: What did you learn? (birth of stars)



Example: What did you learn? (planetary systems)



Hope you learned some to-dos, and some not-to-dos

Did you go to Mather's talk?
What would you say was his goal?
Was it:

- to entertain?
- to impress?
- to communicate?

Before the talk, what did you think his goal would be?

[Thanks for contributions from UNM Professor Wolfgang Rudolph]