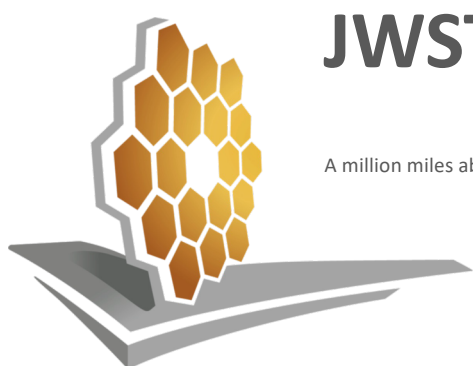


# JWST+3



## JWST+3

A million miles above midnight

Dr Steve Barrett Sunderland AS 24 Nov 2024

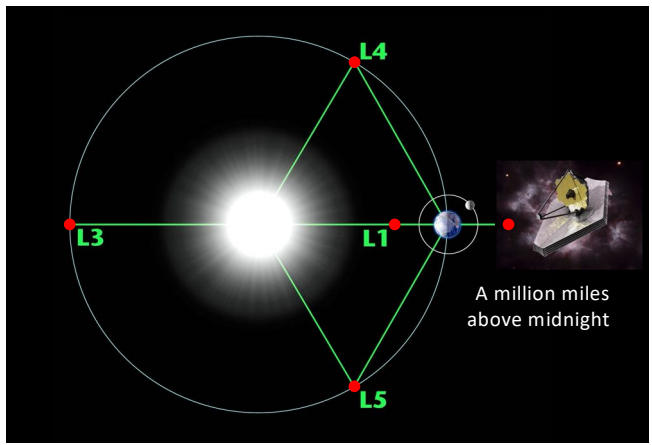
### JWST Launch



25 December 2021

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### Lagrange Point 2

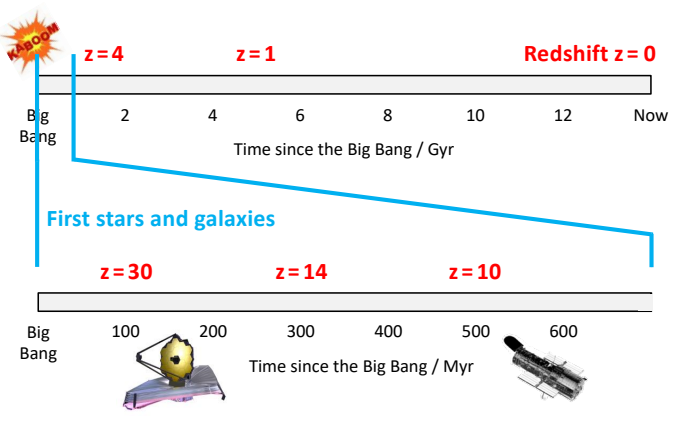


A million miles above midnight

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24 January 2022

### Redshift vs Time



Big Bang

Time since the Big Bang / Gyr

z = 4 z = 1 Redshift z = 0

First stars and galaxies

z = 30 z = 14 z = 10

Big Bang

Time since the Big Bang / Myr

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# JWST+3

### First Light

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June 2022

### Jupiter

HST

JWST

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July 2022

### CEERS

Cosmic Evolution Early Release Science

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July 2022

### HIP 65426 b

Star HIP 65426

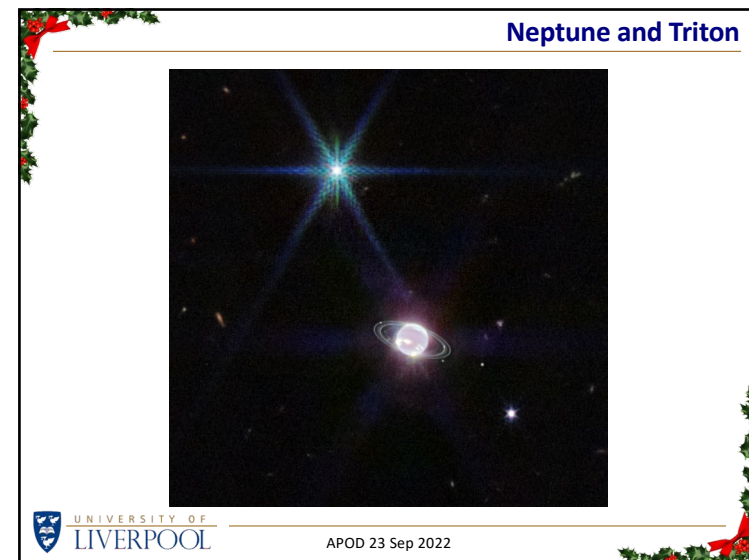
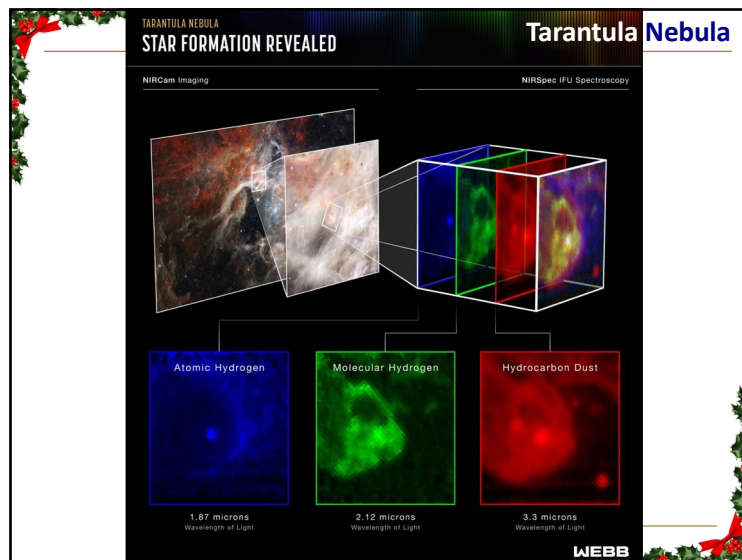
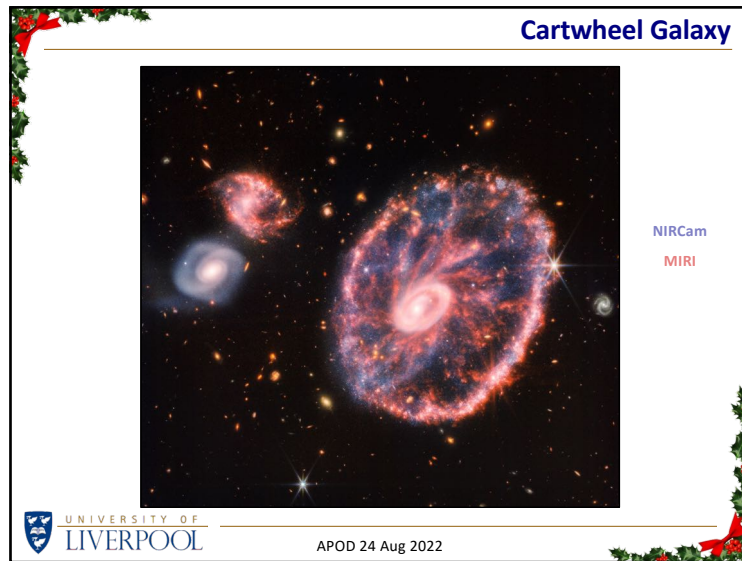
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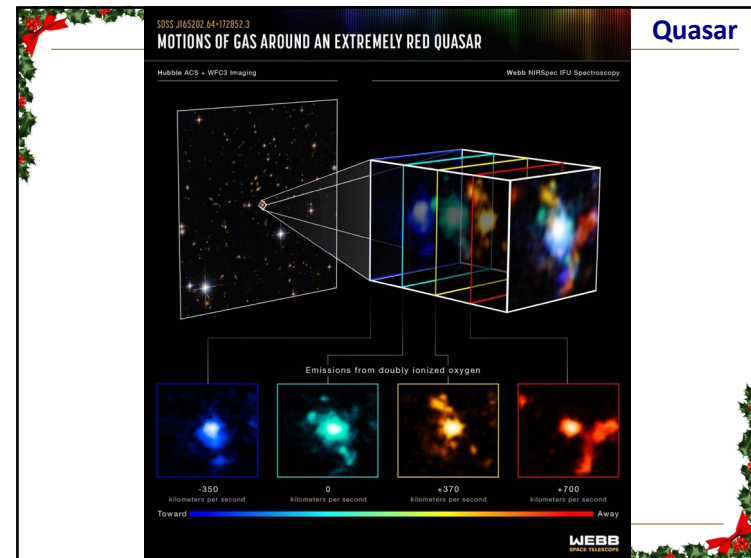
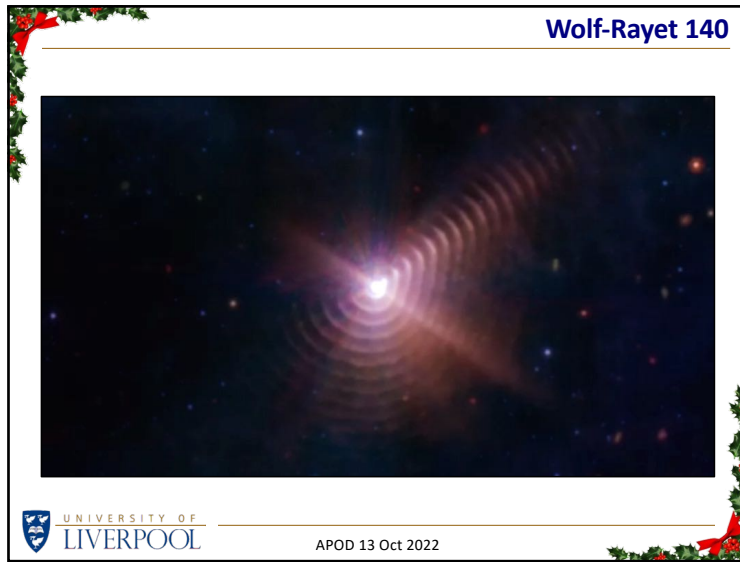
Exoplanet HIP 65426 b

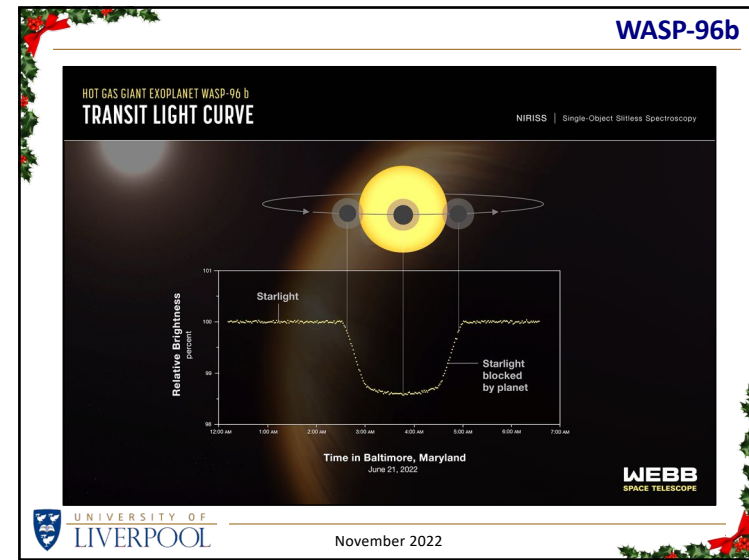
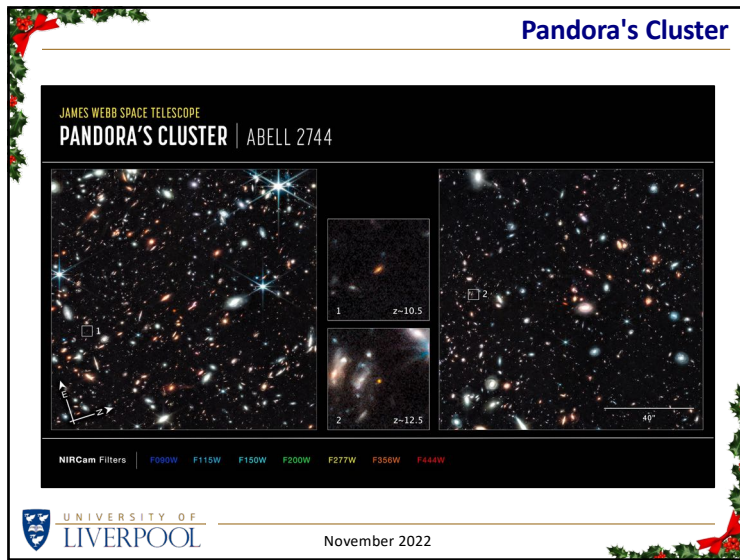
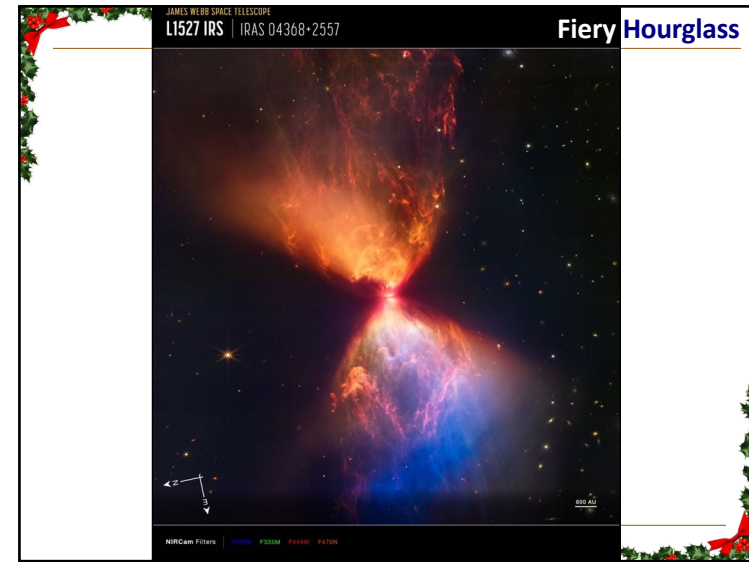
JWST NIRCam F300M NIRCam F444W MIRI F1140C MIRI F1550C

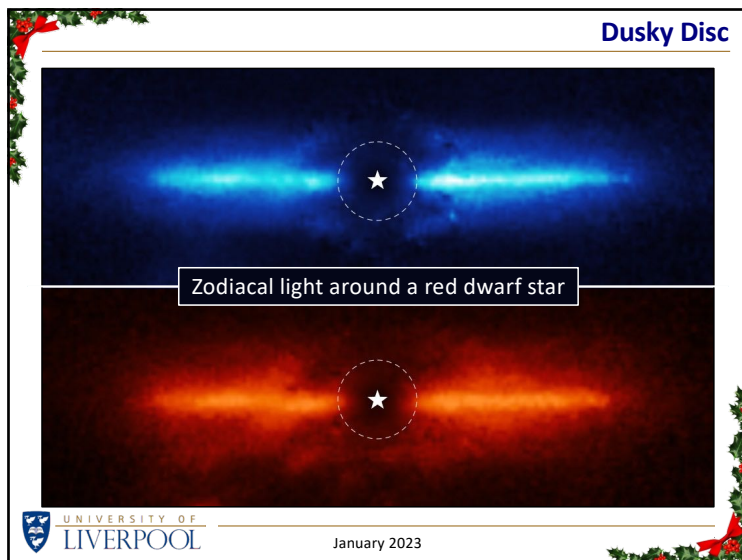
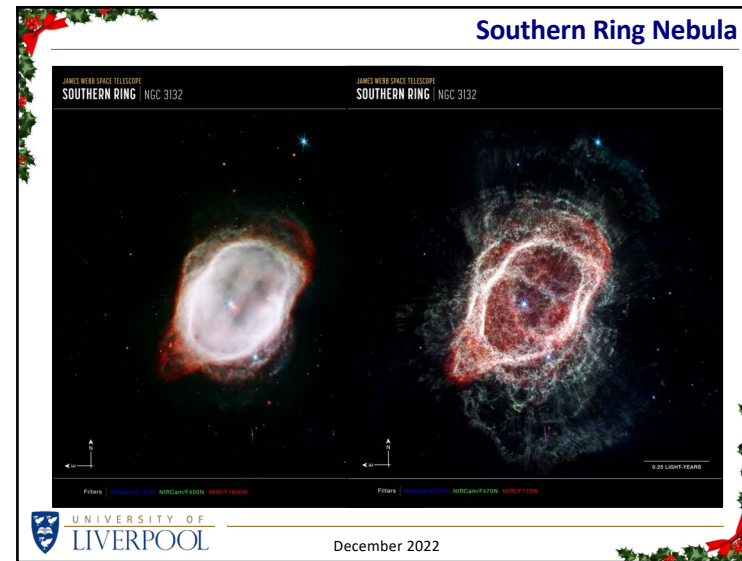
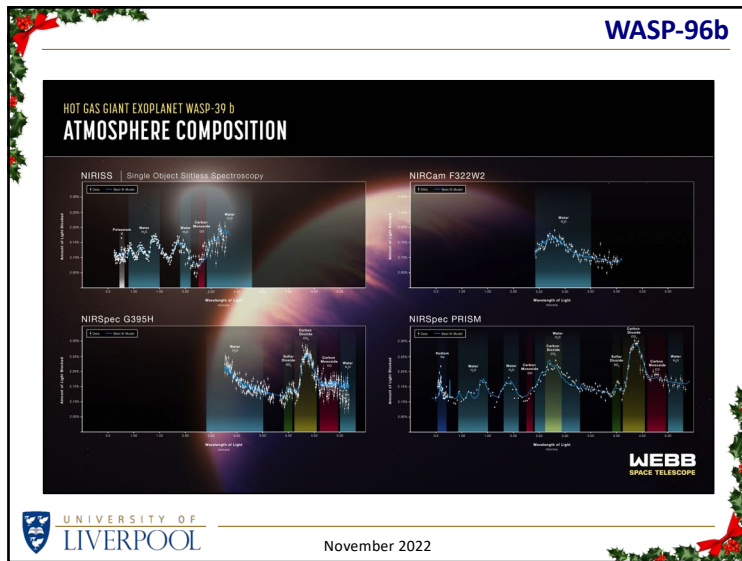
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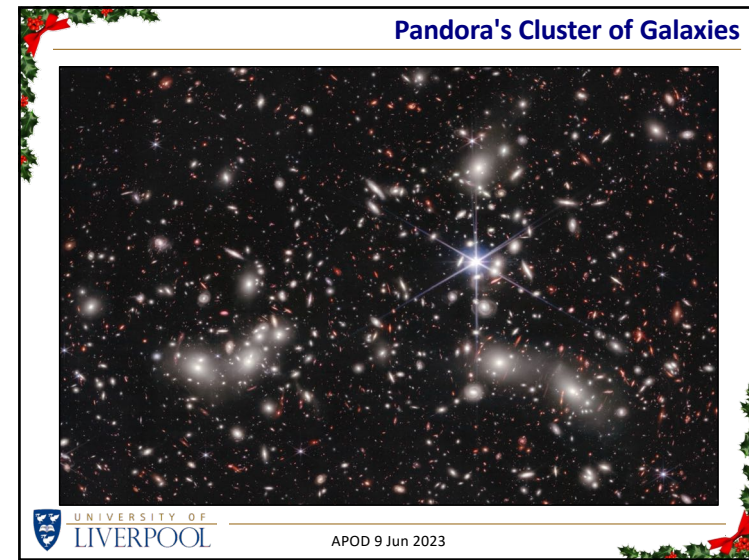
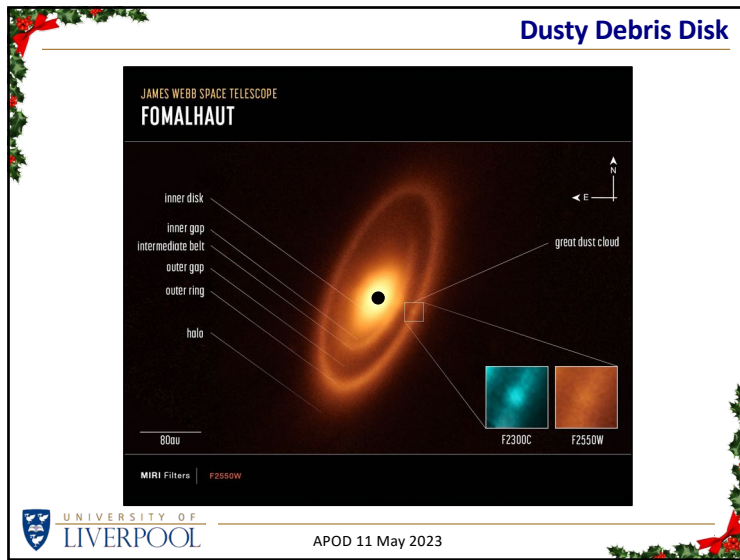
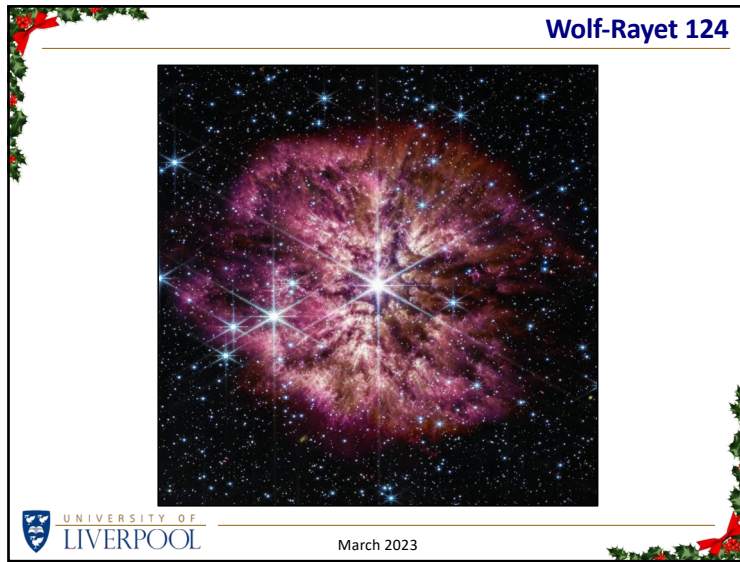
August 2022



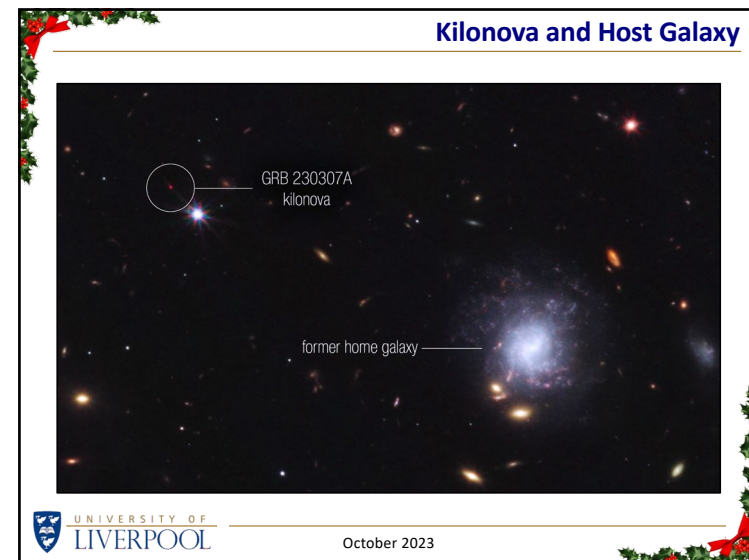
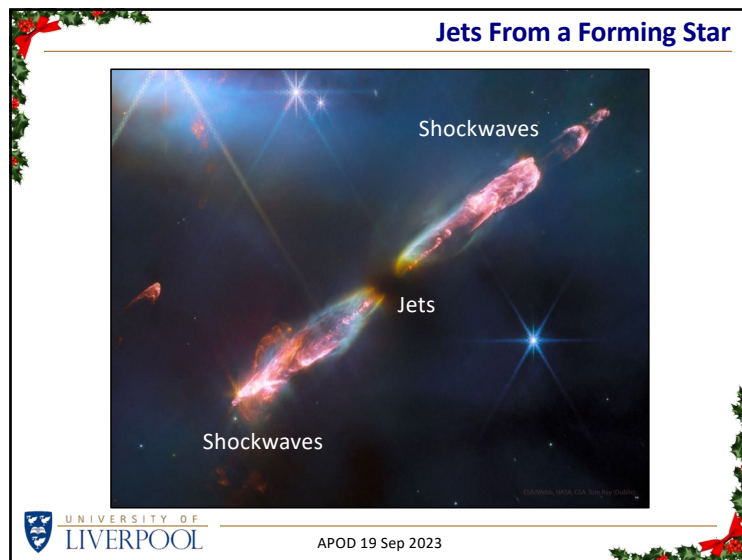




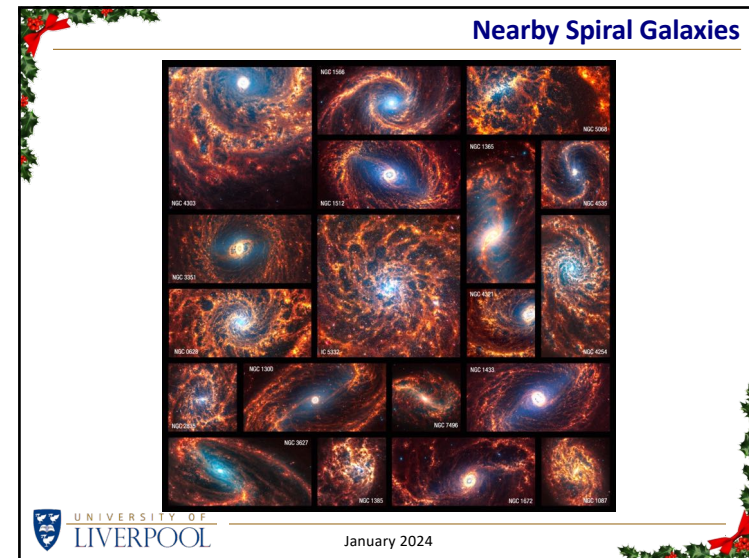
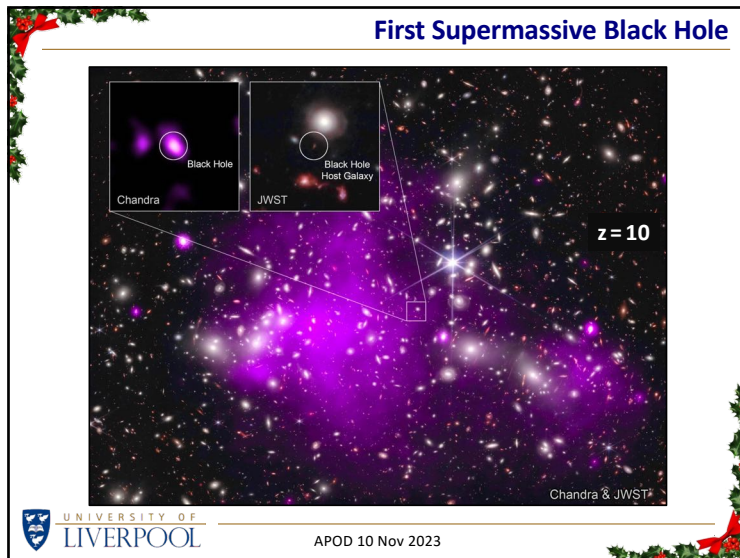
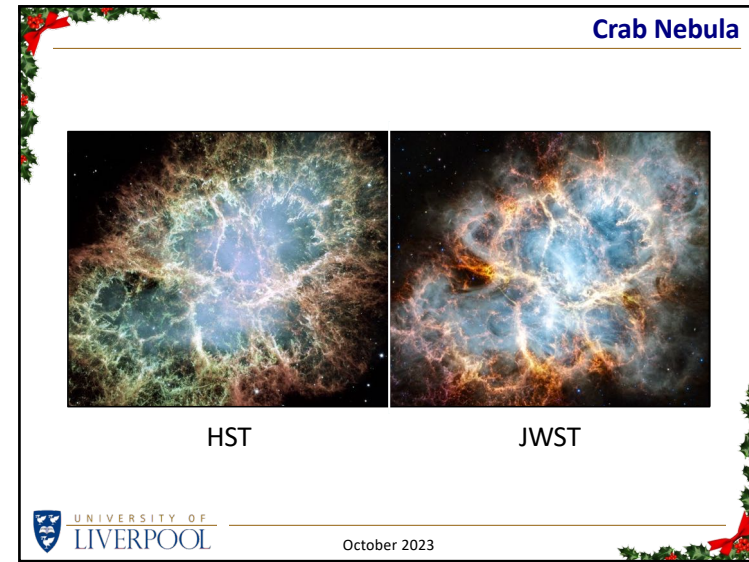
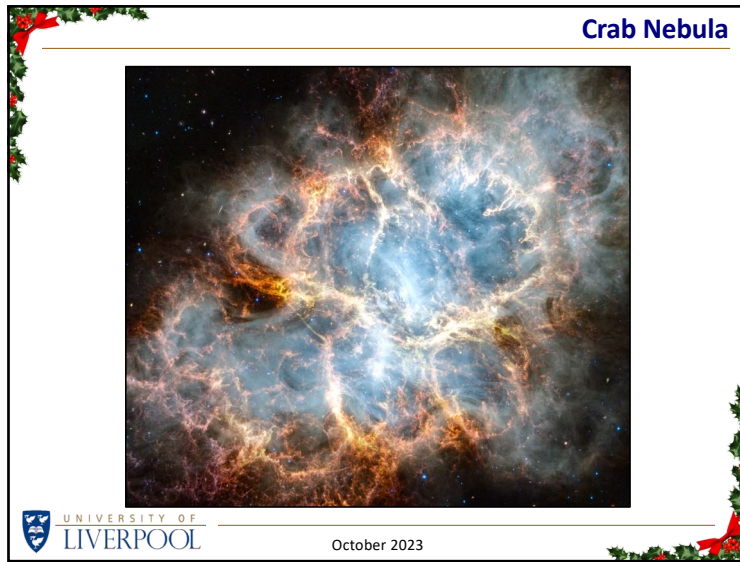


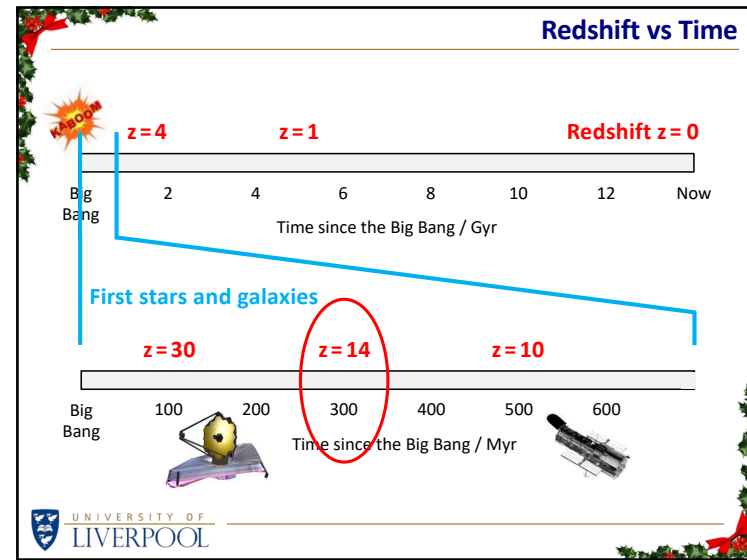
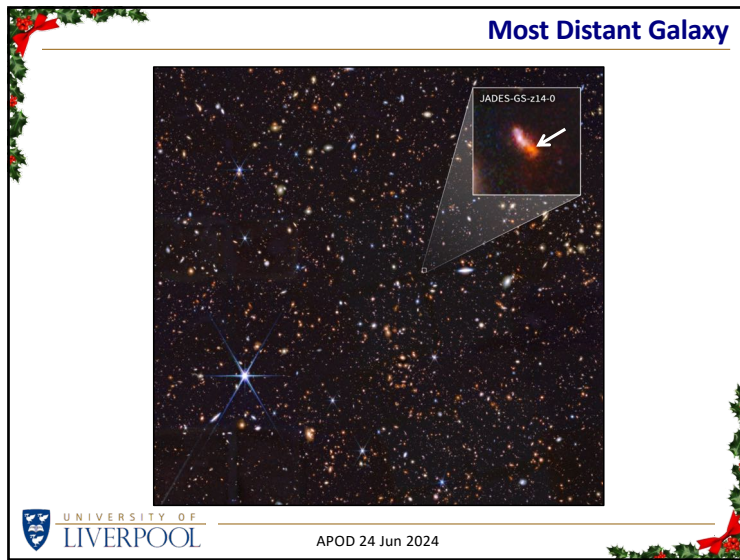
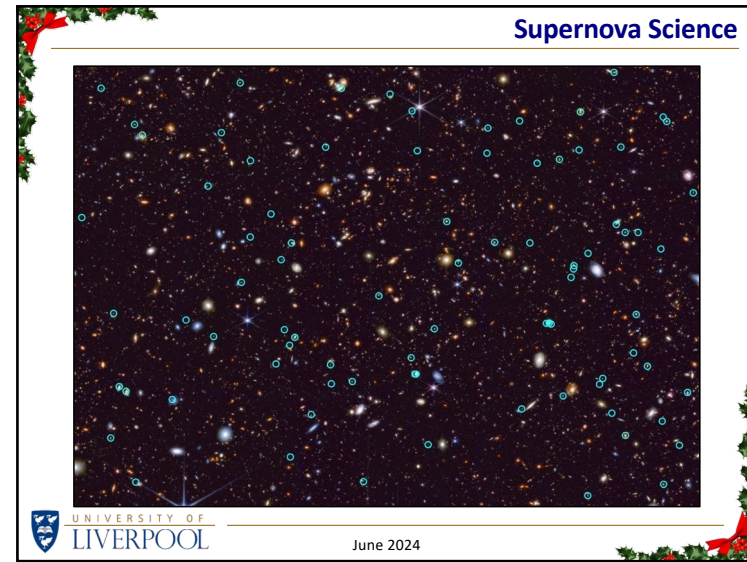
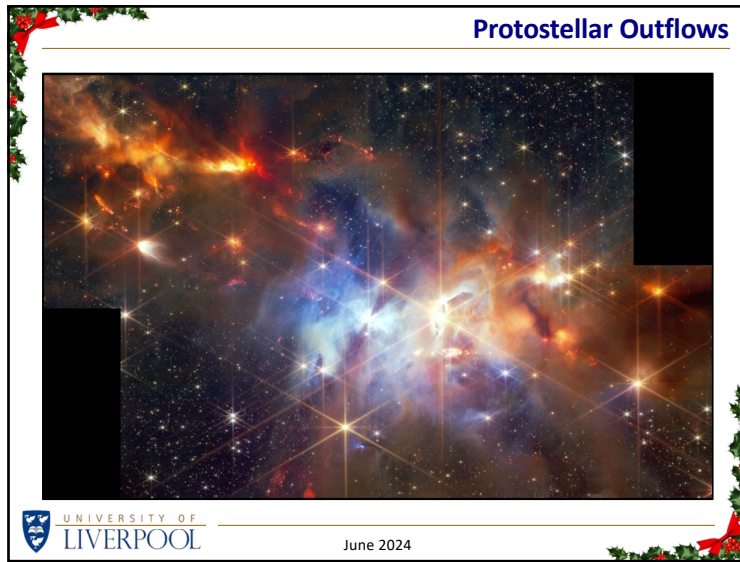


# JWST+3

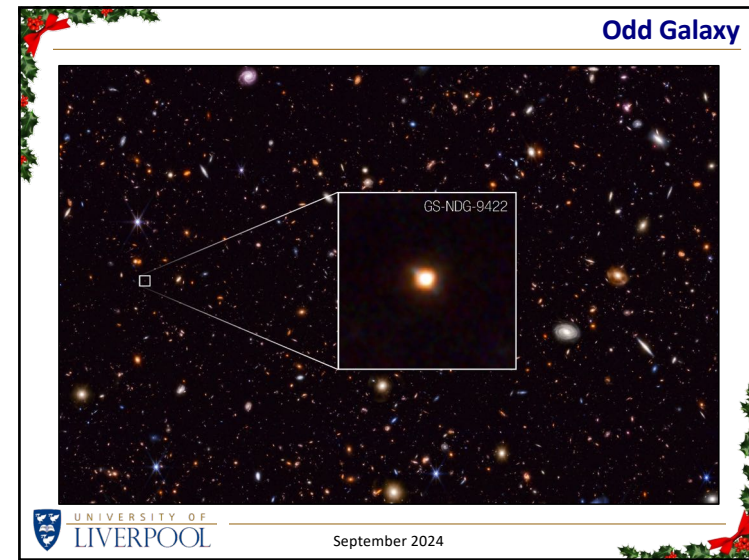
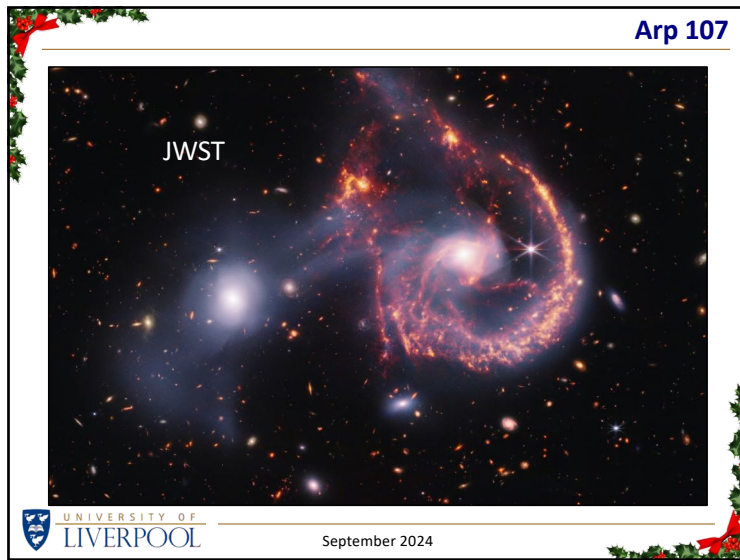
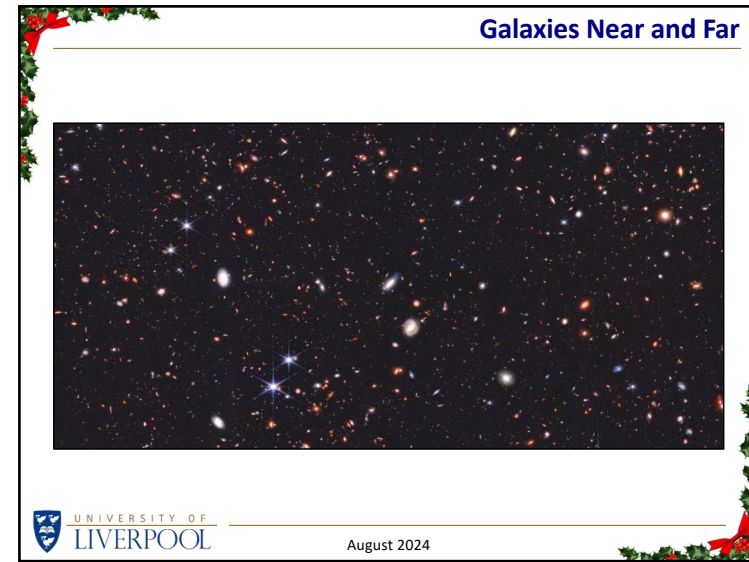
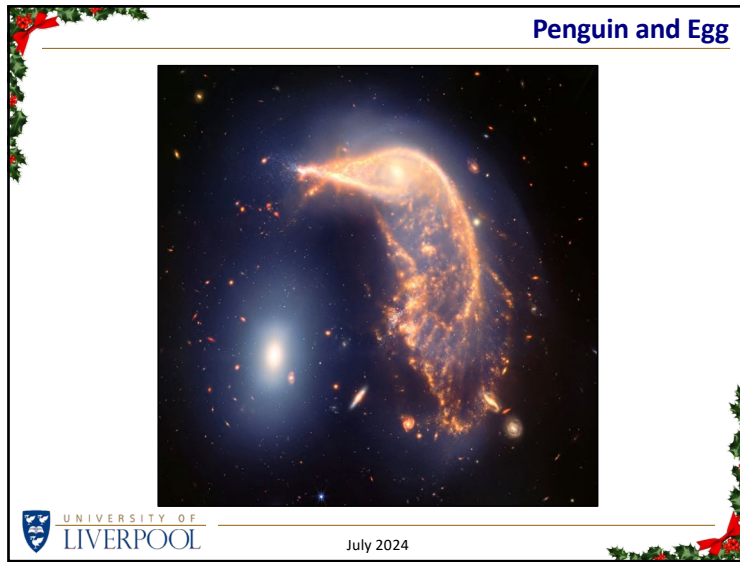









# JWST+3



# JWST+3

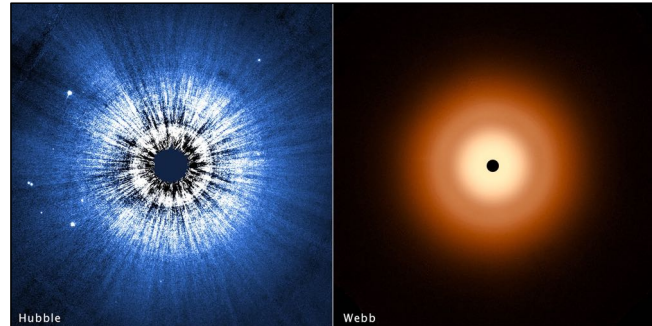
Hubble + Webb



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October 2024

Disc Around Vega



Hubble Webb

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November 2024

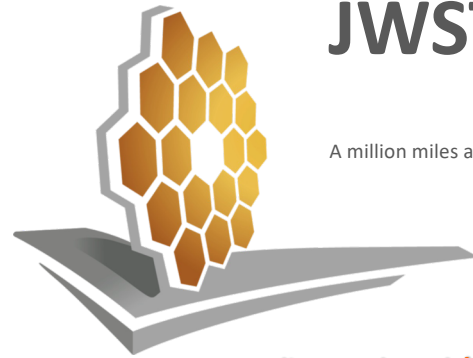
Merry Christmas



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JWST+3

A million miles above midnight



[www.liverpool.ac.uk/~sdb/Talks](http://www.liverpool.ac.uk/~sdb/Talks)

Dr Steve Barrett Sunderland AS 24 Nov 2024