

# Try this at Home

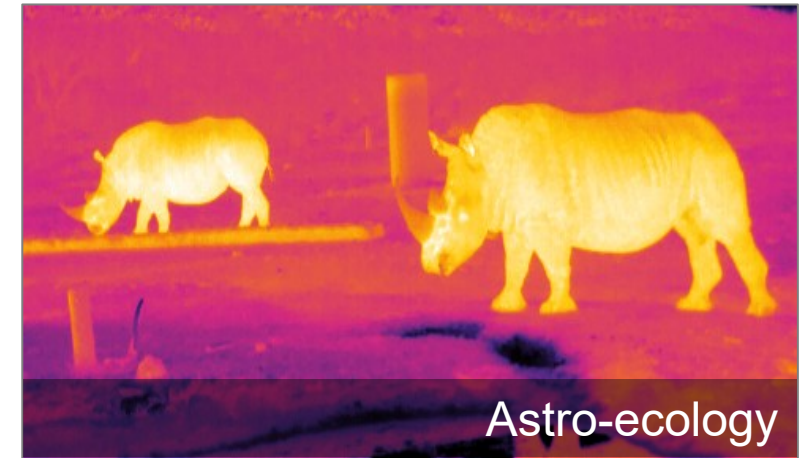
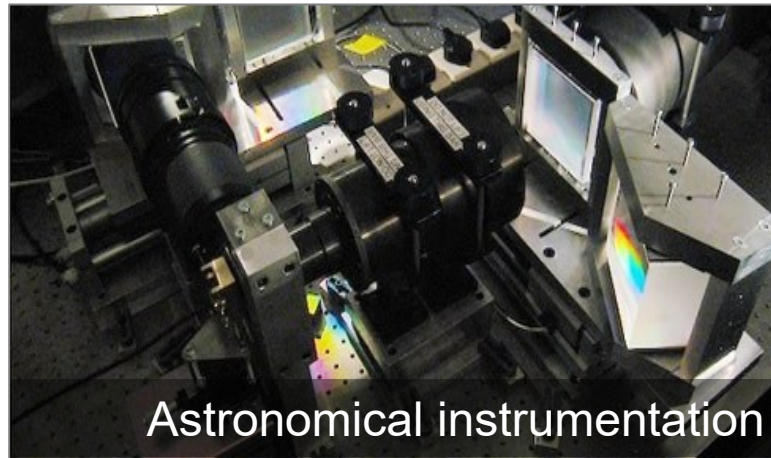
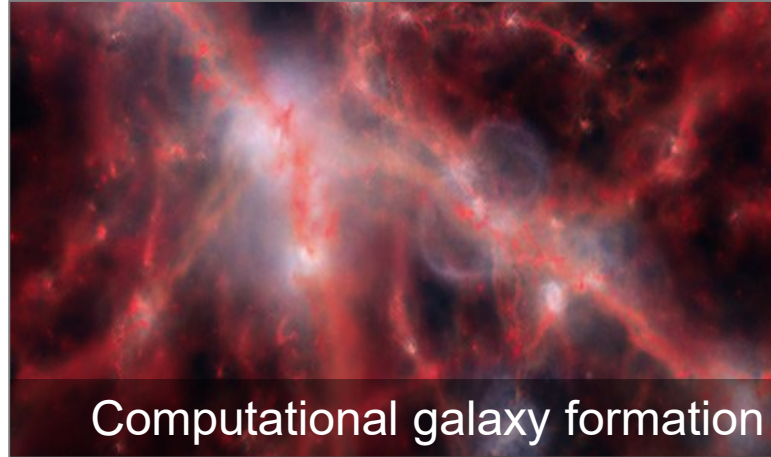
Andy Newsam

Professor of Astronomy Education and Engagement, LJMU  
Director of the Schools' Observatory

Image: Liverpool Telescope/LJMU



# Astronomy research in Liverpool



# Astrophysics Research Institute

Formed in 1992

Now 100+ people

Combines:

- Research
- Teaching
- Technology
- **Education and Engagement**





# The Liverpool Telescope



The Liverpool Telescope at sunset on La Palma

Photo: Liverpool Telescope/Mike Tomlinson



# Location: La Palma





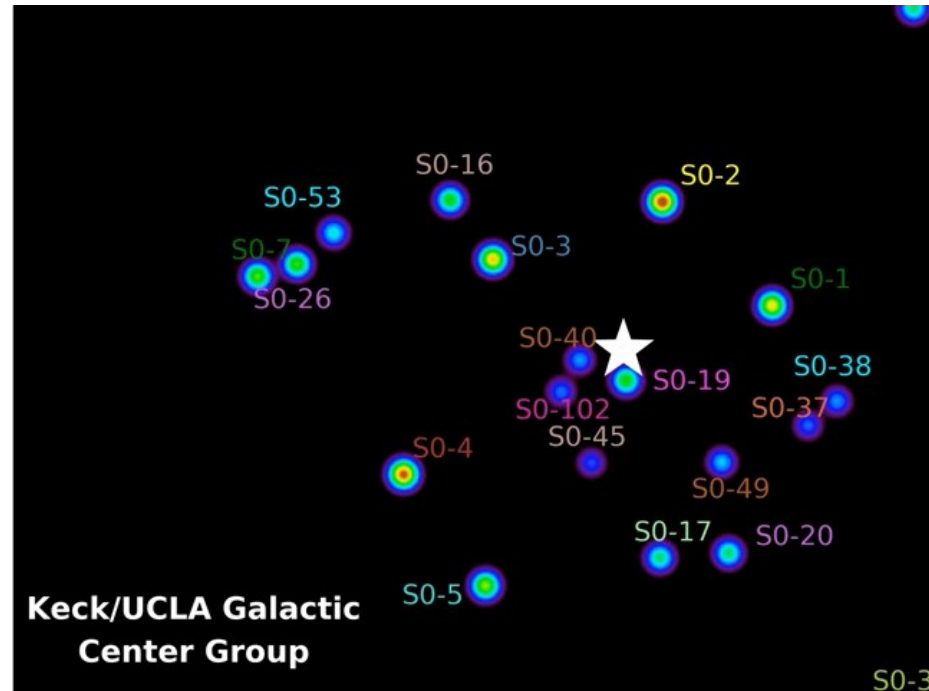
# Time-Domain Astrophysics

Everything changes...

... but we often don't understand how or why.



HST/STSci/NASA/ESA



Keck/UCLA

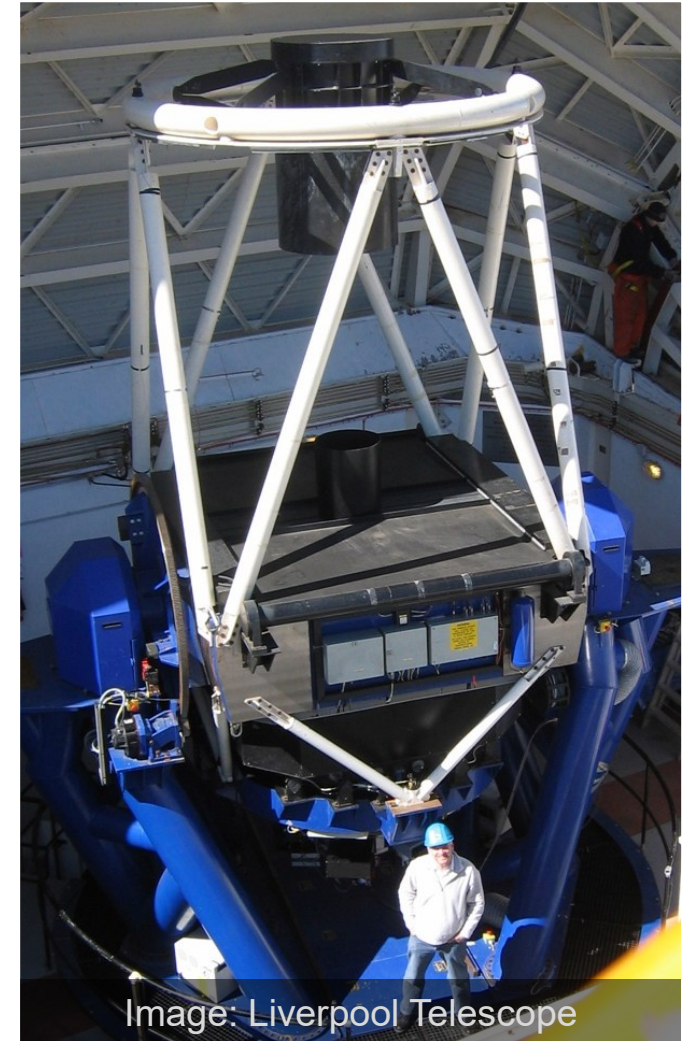


A. Hardy/STFC



# How does it work?

Observing Programmes collected by the  
Telescope Management Centre  
Sent to La Palma  
Everyone goes to bed!  
Telescope creates and carries out optimal  
observing strategy  
We wake up and analyse the results  
Science happens!



# Explosive Science: Gamma-Ray Bursts

GRBs are the brightest explosions in the universe – even when billions of light years away, could be visible to the eye...

Some are probably explosions of very massive stars, others collisions of two neutron stars.

GRB observed by LT on 9<sup>th</sup> October 2022 brightest GRB ever detected.

Around 2 billion light years away.



Artist's impression of bright GRB 221009A.  
Image © 2023 Soheb Mandhai, University of Manchester.



# The Schools' Observatory

Using the Liverpool Telescope  
from school or home



Photo: Liverpool Telescope



[www.schoolsobservatory.org](http://www.schoolsobservatory.org)





Image: Don Davis



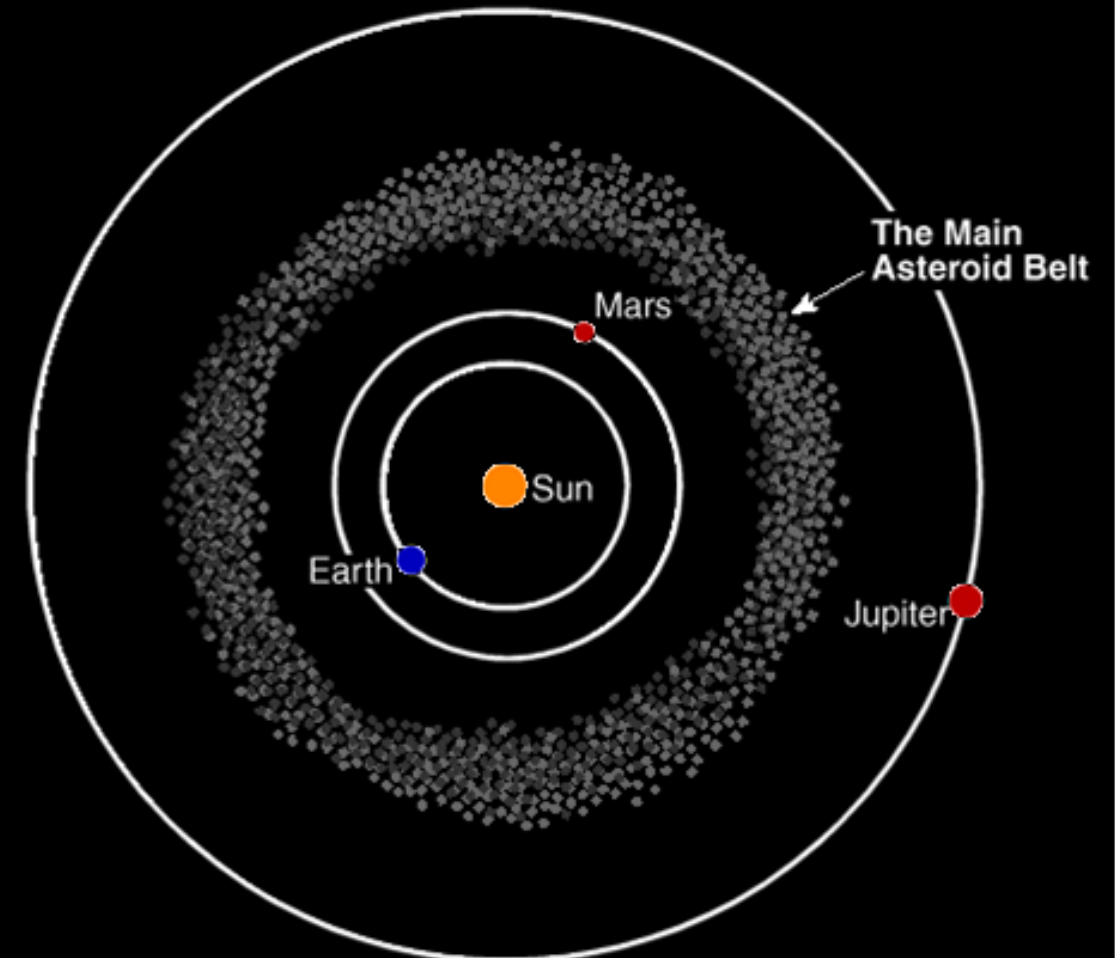
# Asteroids

NEAR — 433 Eros



The NEAR probe approaching Asteroid EROS

Feb 12 2000 00:58:00



(Orbits drawn approximately to scale)

99-10306-3

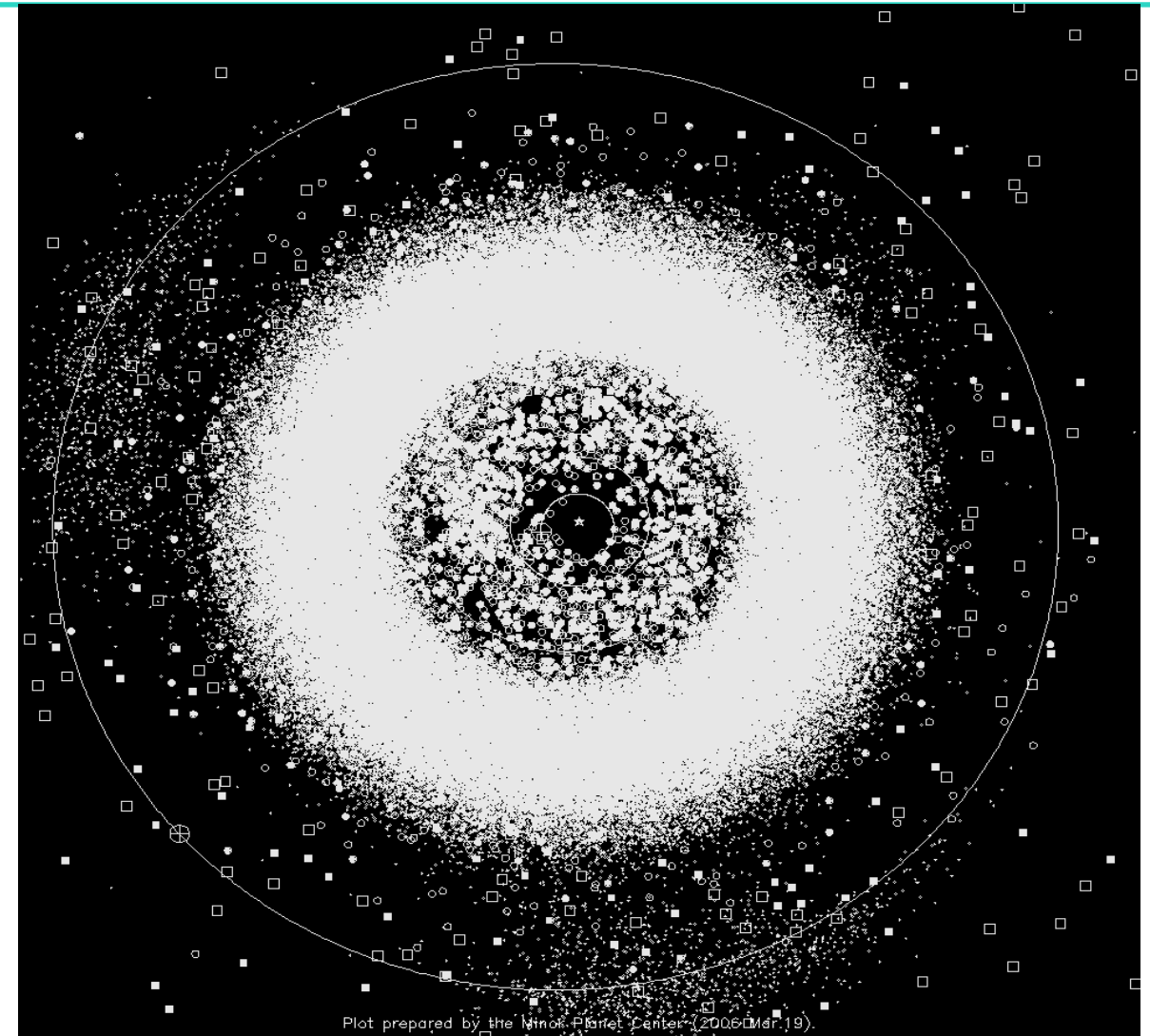
# Asteroids

NEAR — 433 Eros

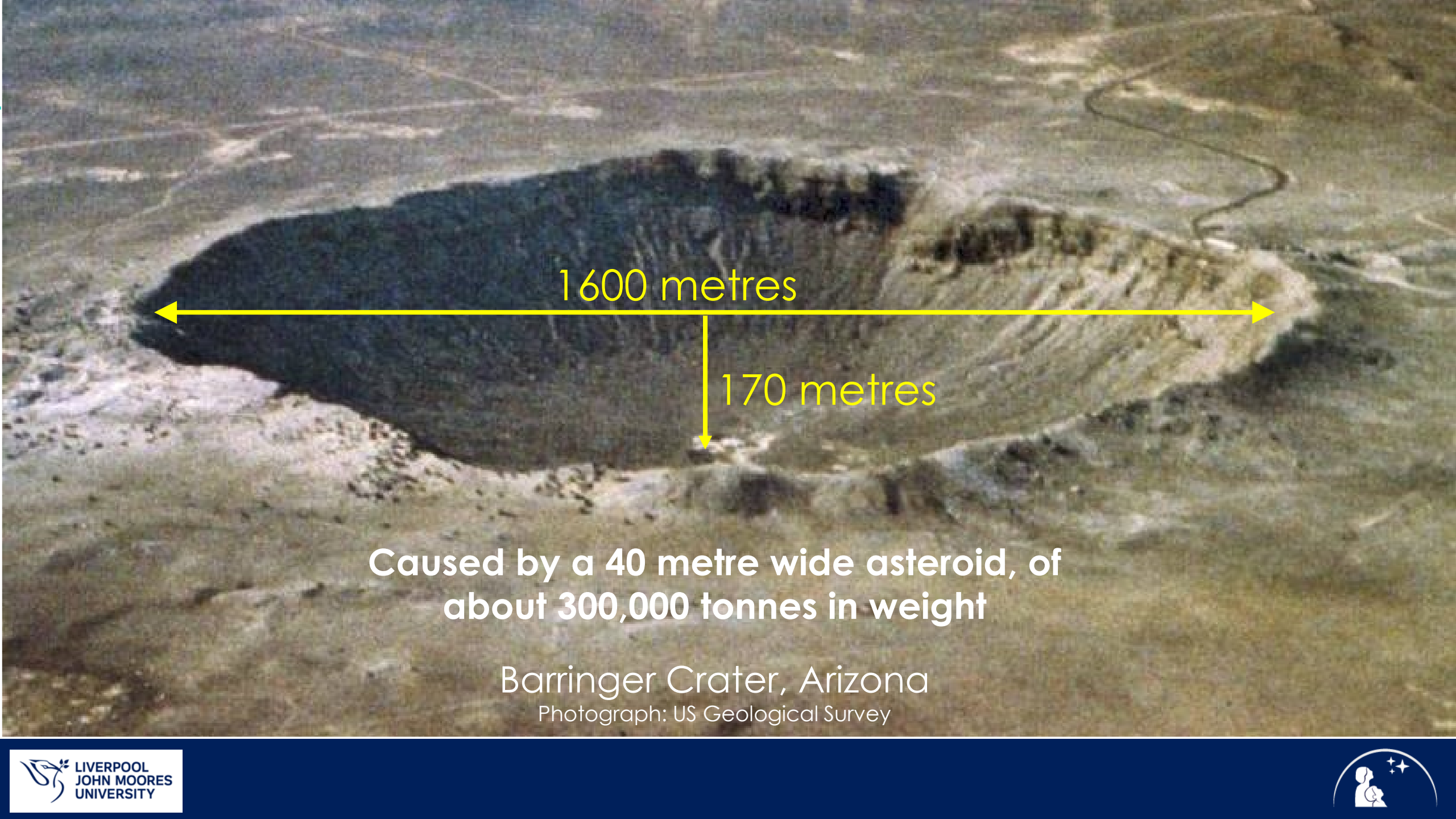


The NEAR probe approaching Asteroid EROS

Feb 12 2000 00:58:00





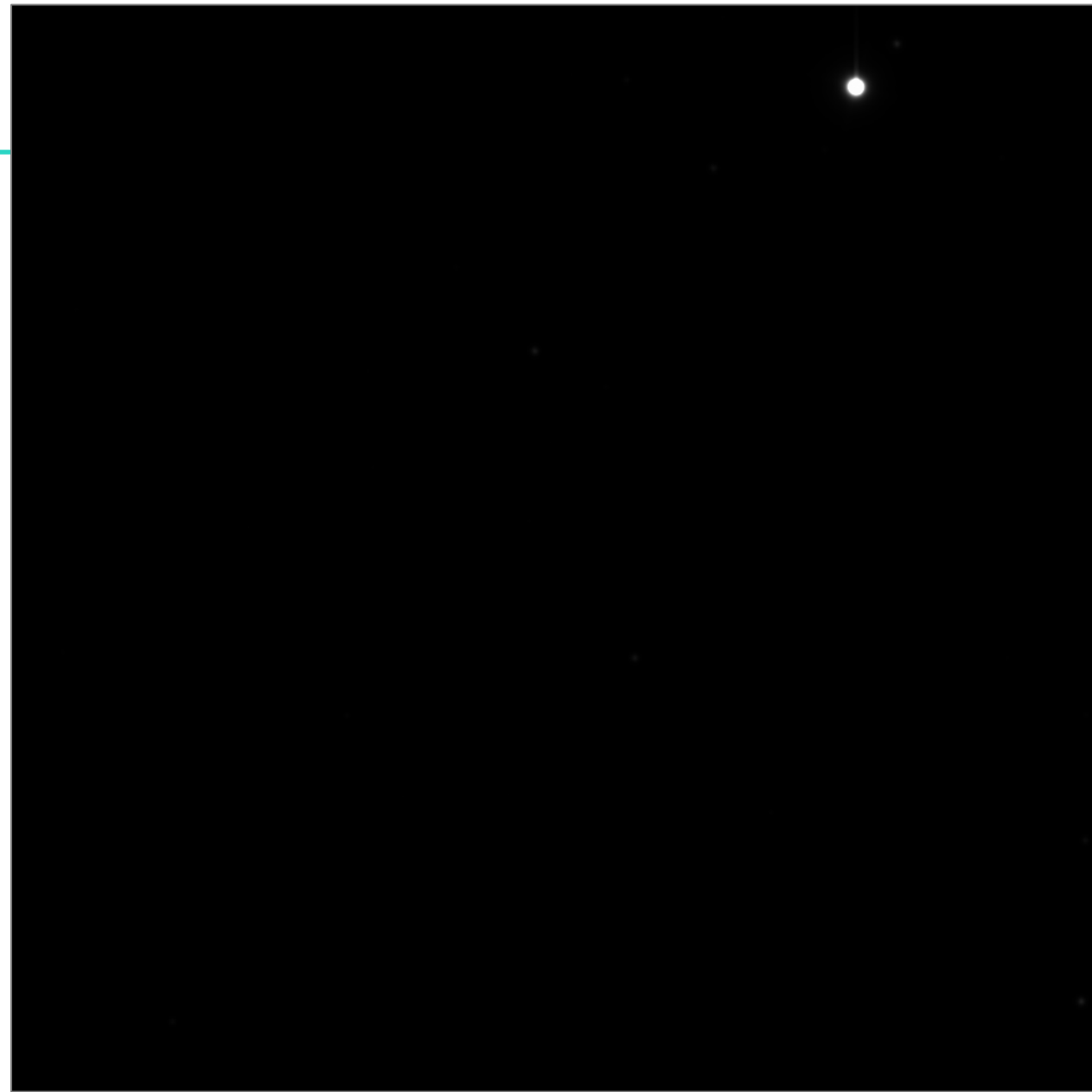


Caused by a 40 metre wide asteroid, of  
about 300,000 tonnes in weight

Barringer Crater, Arizona  
Photograph: US Geological Survey

# Hunting for Asteroids...

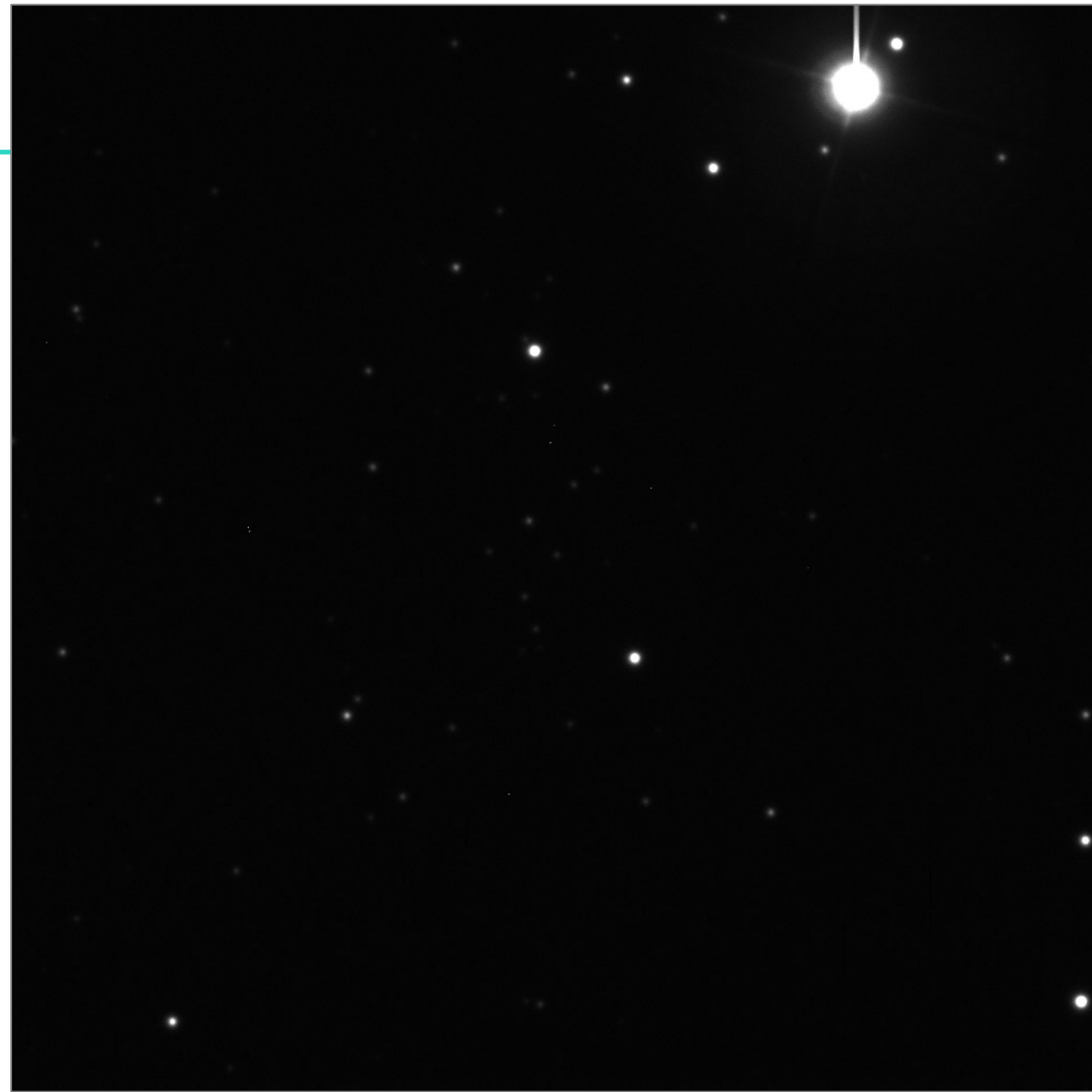
Can you spot the asteroid?





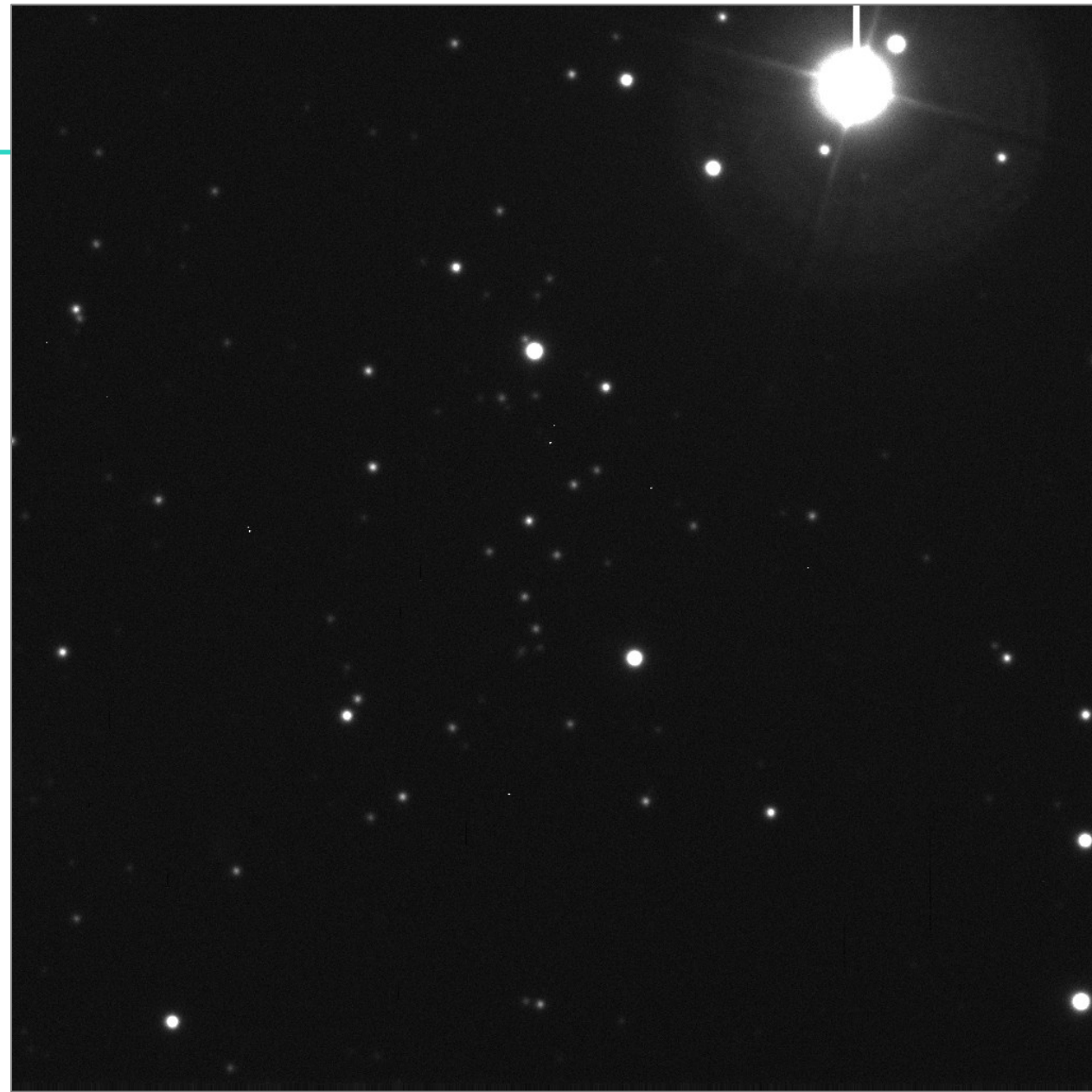
# Hunting for Asteroids...

Can you spot the asteroid?



# Hunting for Asteroids...

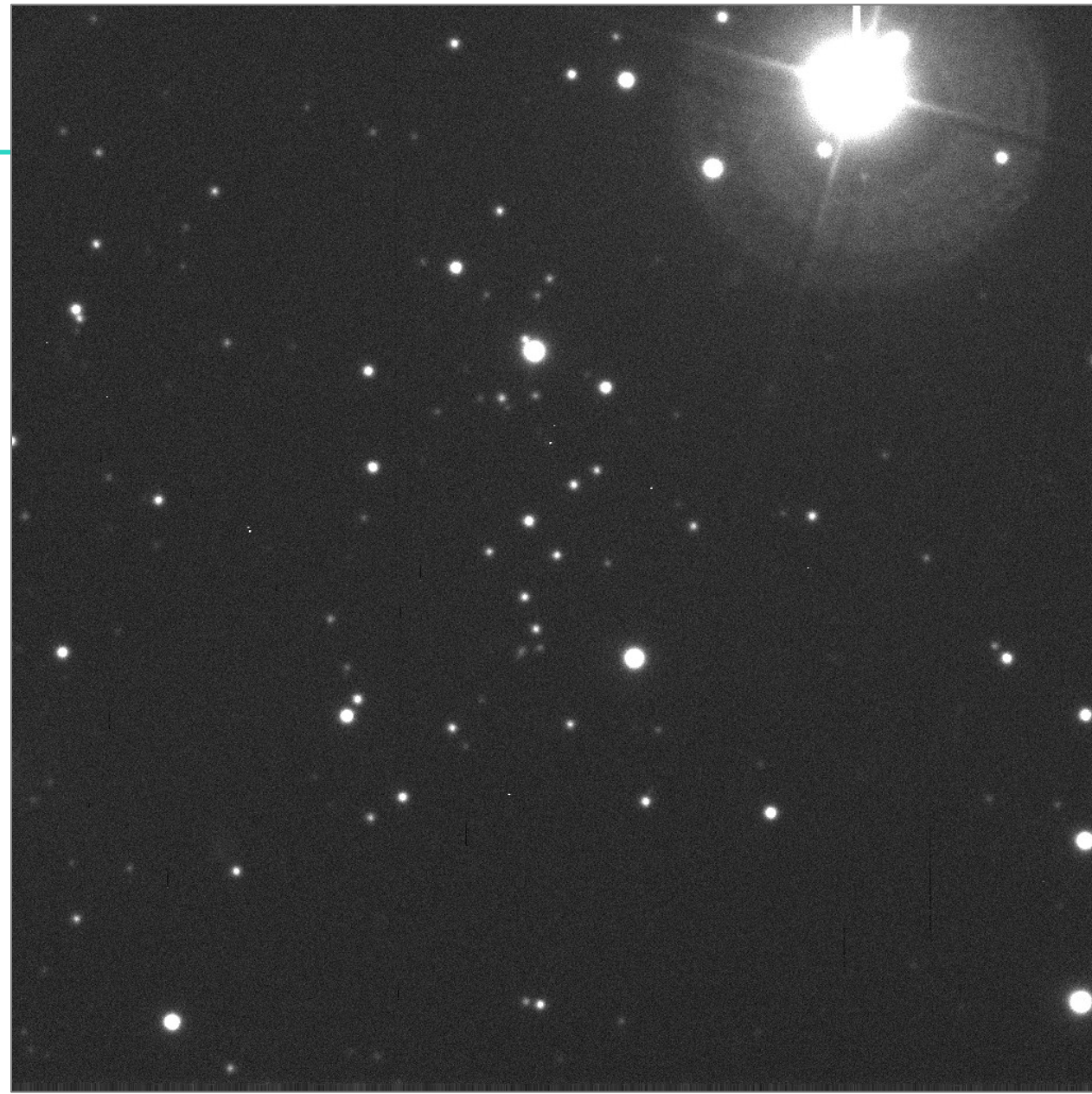
Can you spot the asteroid?





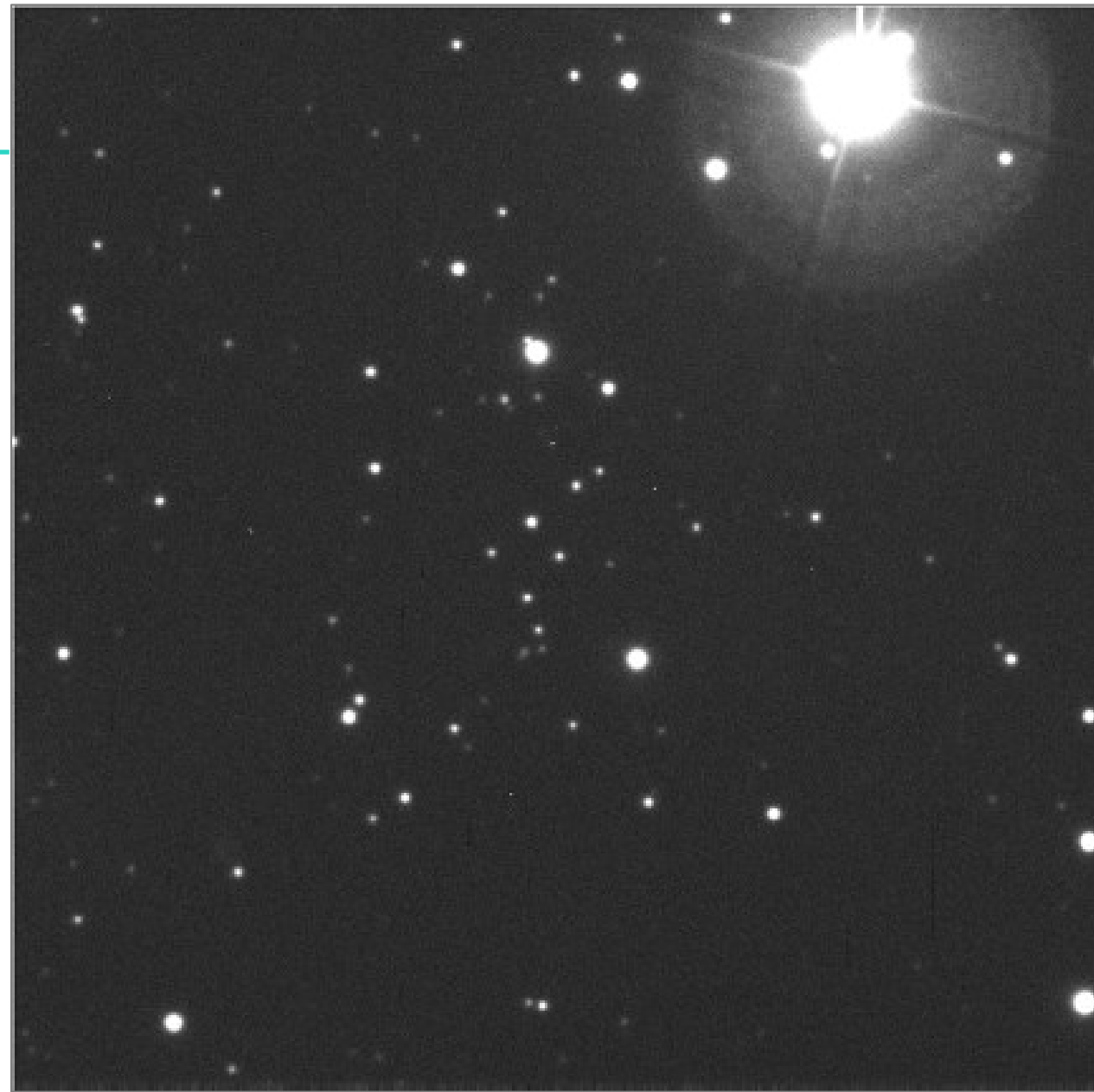
# Hunting for Asteroids...

Can you spot the asteroid?



# Hunting for Asteroids...

Can you spot the asteroid?





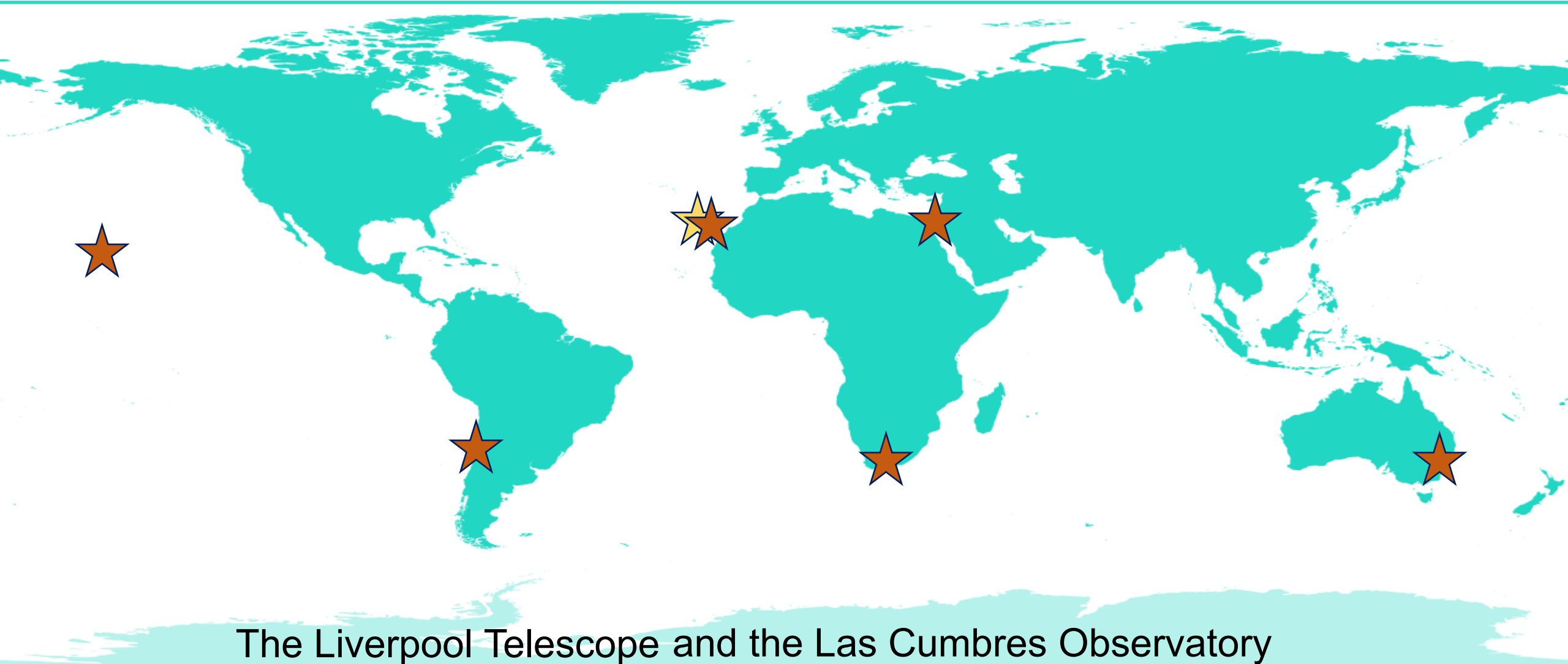
# Human-made “asteroids”?

JWST observed  
by LT in January  
2022 on the way  
to its final orbit



Credit: LJMU/LT/J. Marchant

# Anytime, Anywhere



The Liverpool Telescope and the Las Cumbres Observatory



# Open to Explore and Play



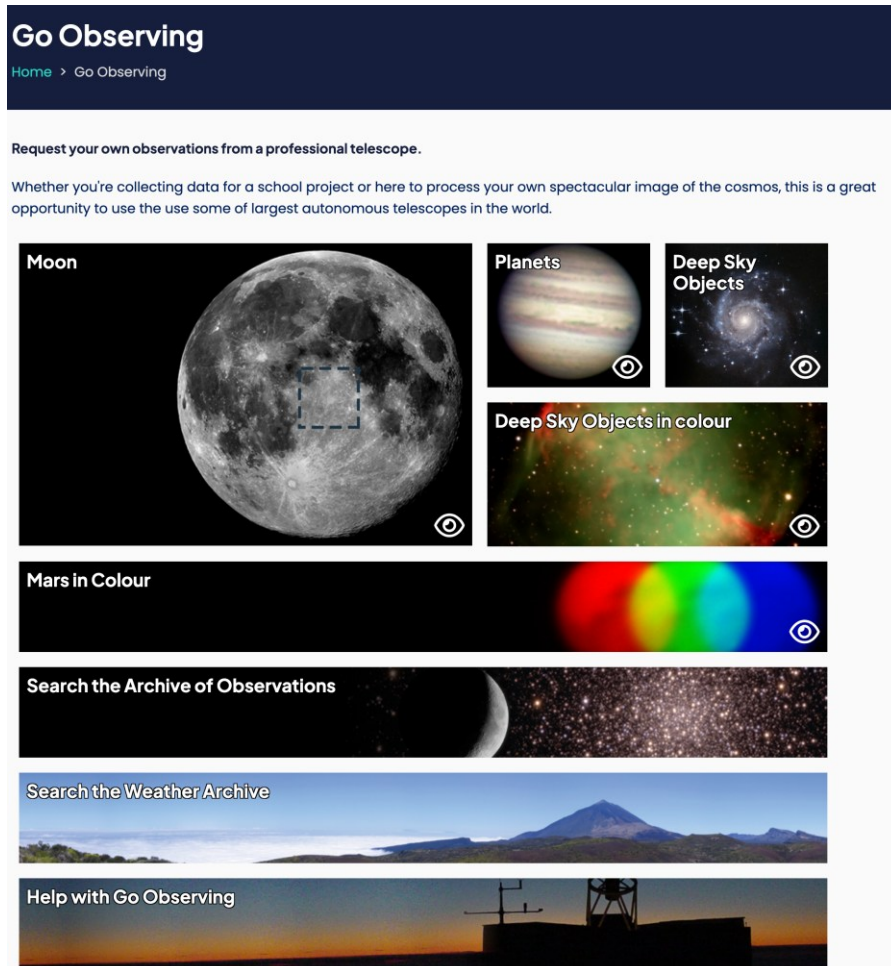
Spiral Galaxy NGC 7479



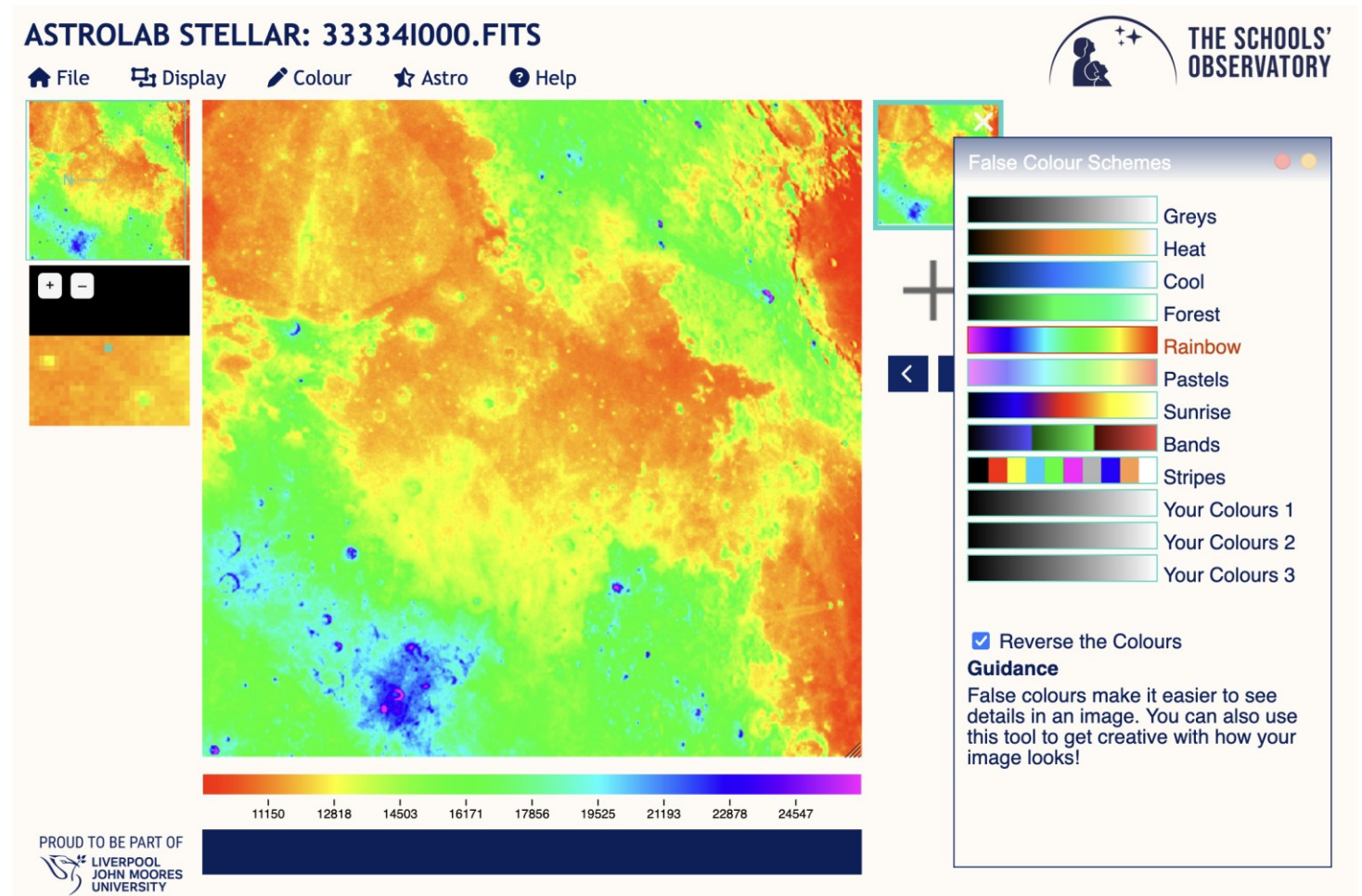
Saturn

**Free to all**  
(LJMU and Dill  
Faulkes Education  
Trust Funded)  
Extra features for  
UK and Irish  
schools

# Easy to use on any device



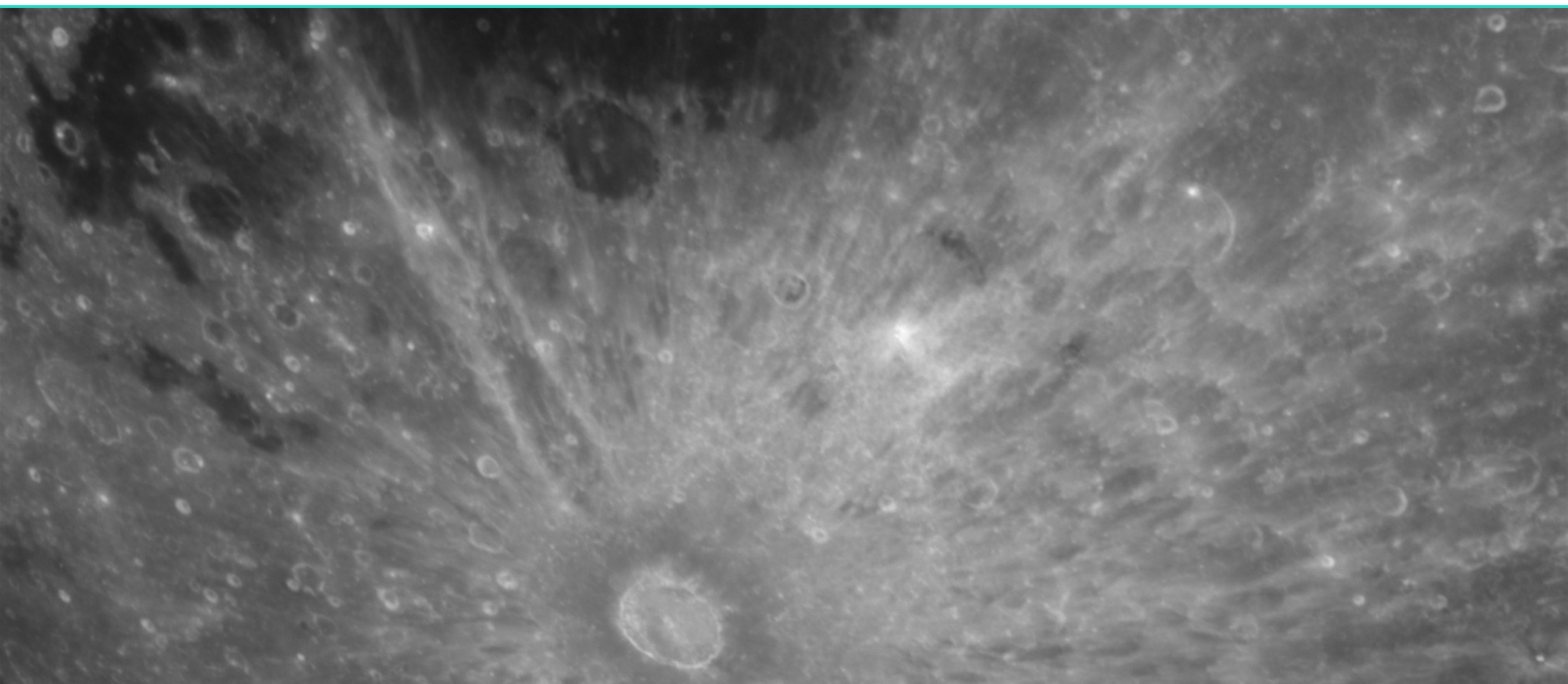
“Go Observing”



“AstroLab”



# From near...



# From near...





...to far

M20: Birth of a Star



Image: NSO/LT/Bryn Davies

M74: Spiral Galaxy



Image: NSO/LT/Daniel Duggan



# Start Exploring!



Les Brand/Liverpool Telescope/Schools' Observatory



Les Brand/LT/TSO



Andy Newsam/LT/TSO



# Thank you!

## The amazing Schools' Observatory team



Alison Keen



Chris Leigh



Georgia Hurst



Soli Daoud



Stacey Habergham-Mawson



# The Schools' Observatory

[www.schoolsobservatory.org](http://www.schoolsobservatory.org)



SchoolsObs

Image: Daniel López/IAC/LT





# Book Charity Appeal



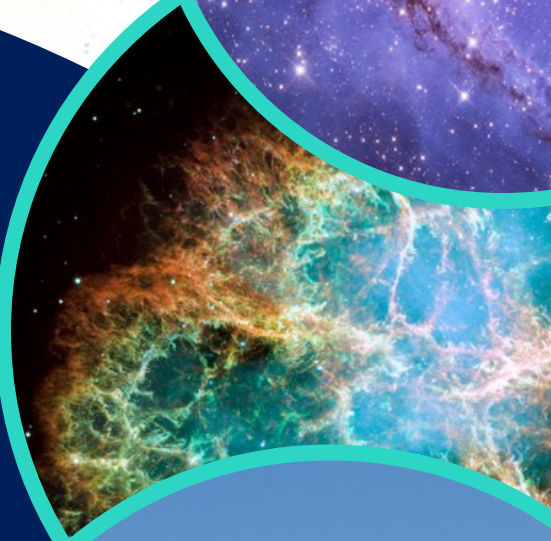


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In-depth Curriculum  
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