

# The Future of Life On Earth

Prof. Roberto Trotta







The Voyager test model

Image credit: NASA/JPL-Caltech

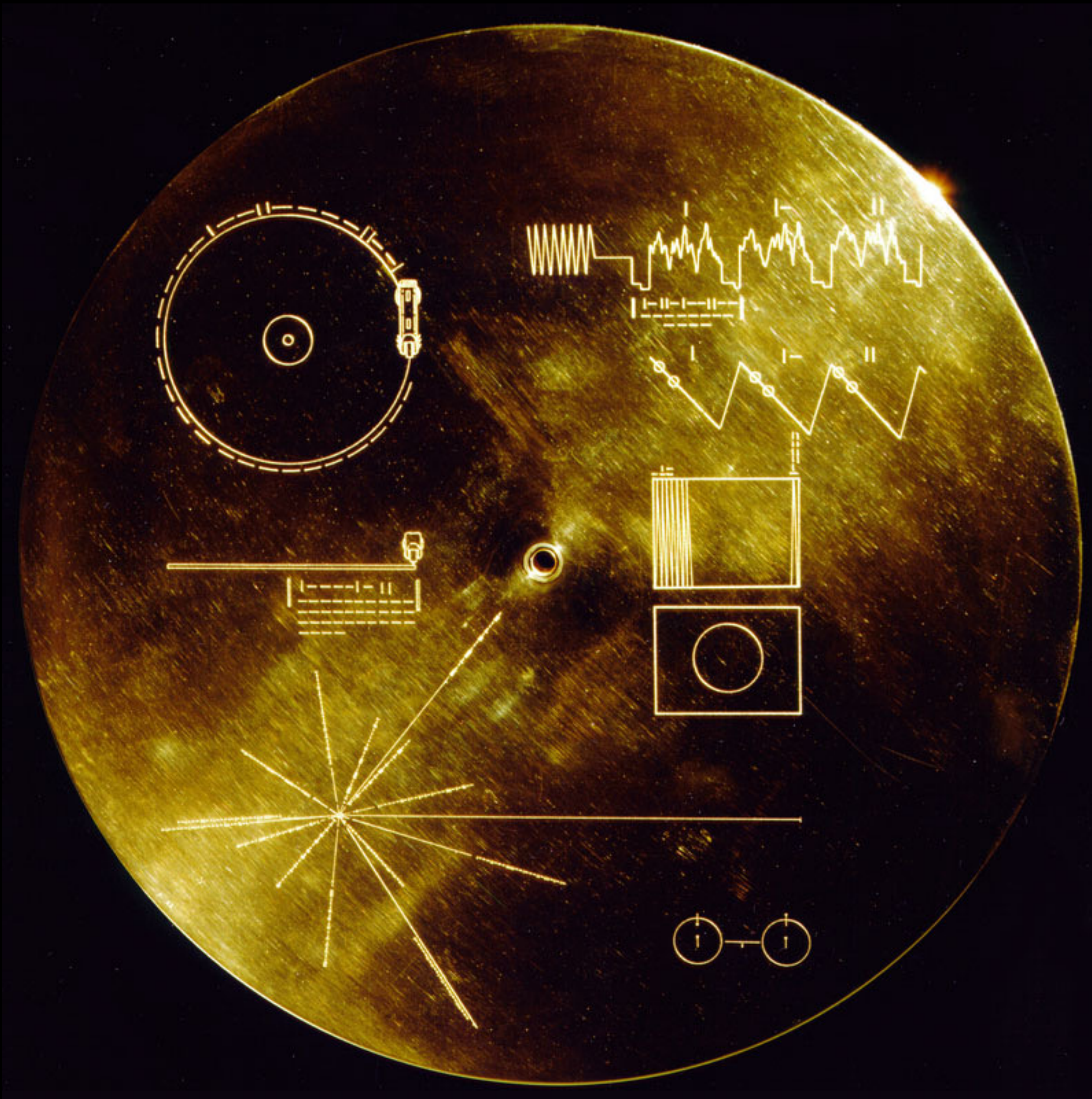




The Golden Record being prepared for launch

Image credit: NASA/JPL-Caltech





## The Voyager Golden Record

Image credit: NASA/public domain





Our pale blue dot

Image credit: NASA/public domain





Image credit: Natural History Museum, London

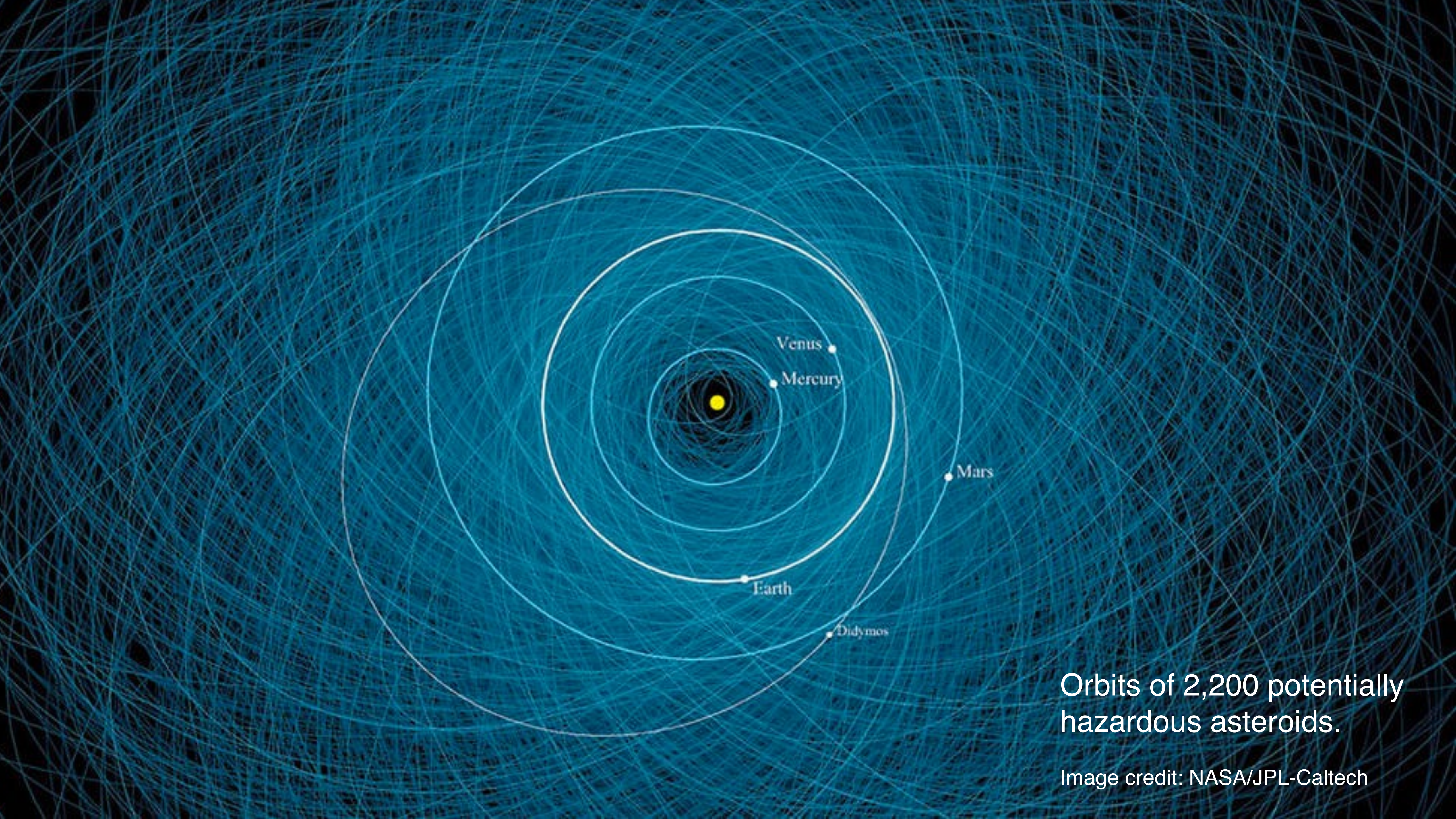




Trees flattened by the  
Tunguska event in 1908

Image source: public domain





Orbits of 2,200 potentially hazardous asteroids.

Image credit: NASA/JPL-Caltech





Fragments of comet  
Shoemaker-Levy 9  
crashing on Jupiter

Image credit: NASA/JPL-  
Caltech/Galileo Imaging Team





A corona mass ejection on the Sun  
Image credit: NASA Goddard Space Flight Center

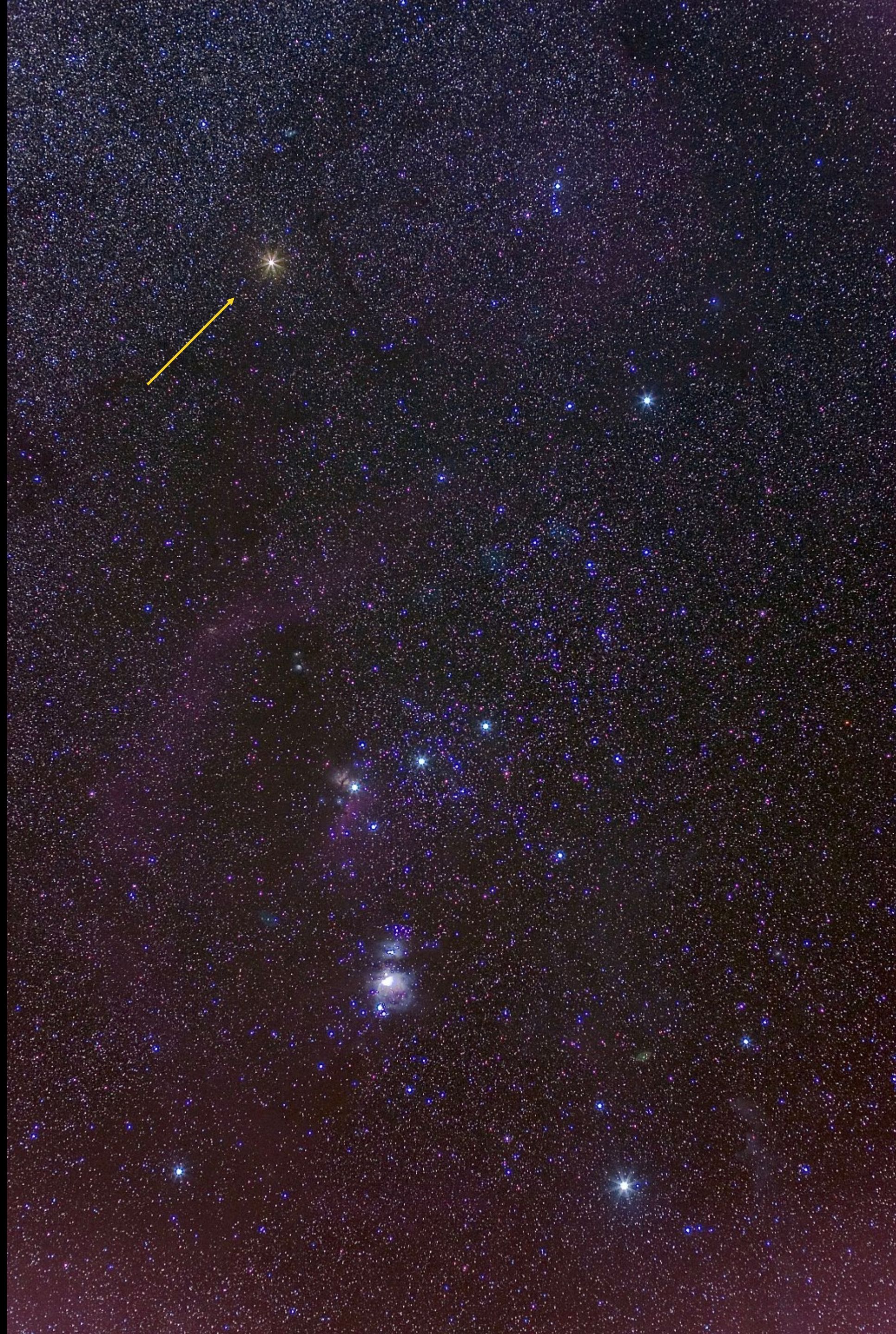




Supernova 1987A, surrounded by expanding gas rings

Image credit: NASA, ESA, R. Kirshner (Harvard-Smithsonian Center for Astrophysics and Gordon and Betty Moore Foundation), and M. Mutchler and R. Avila (STScI)

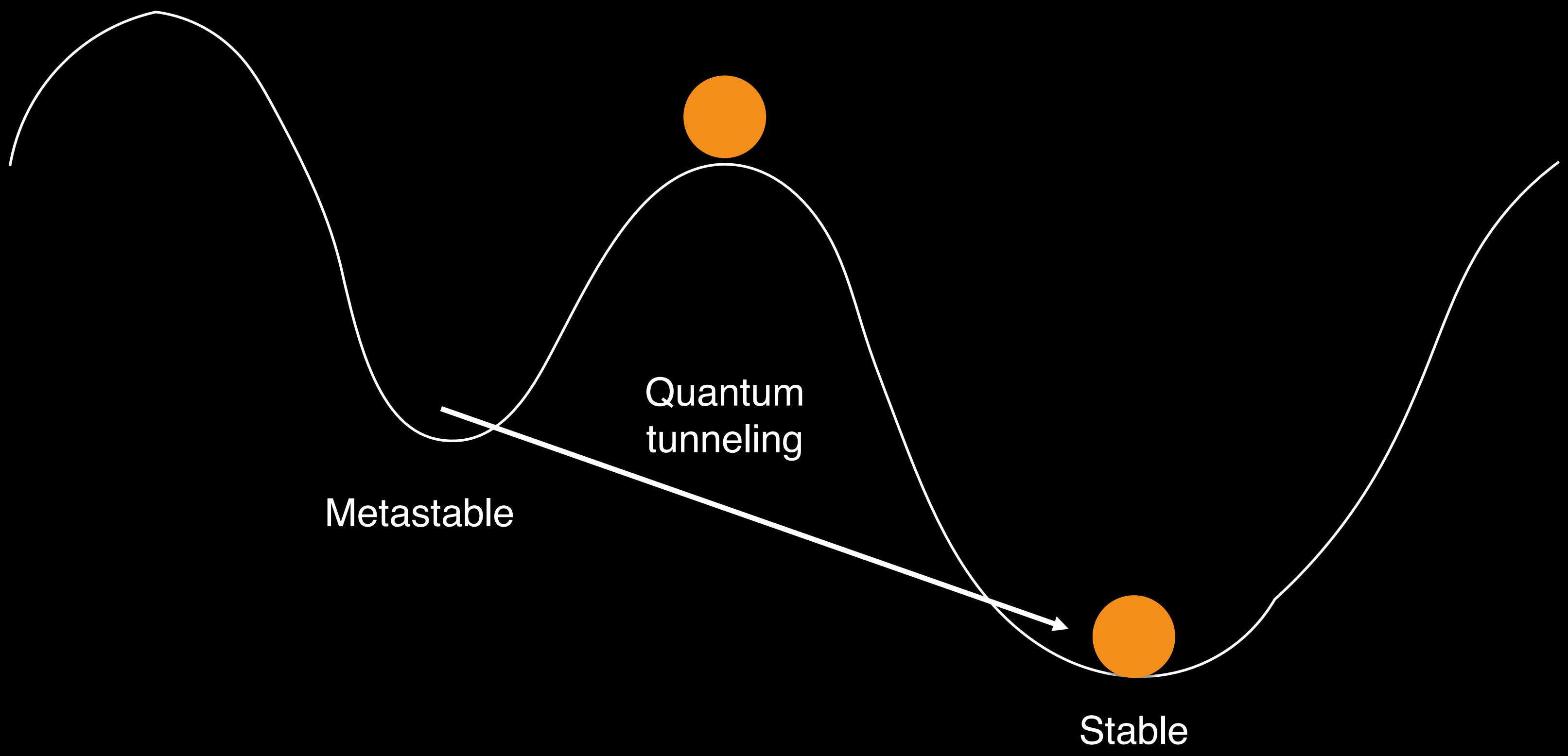




## The constellation of Orion

Image source: Wikipedia/GNU free doc licence





Metastable

Quantum  
tunneling

Stable

Higgs vacuum stability: an analogy

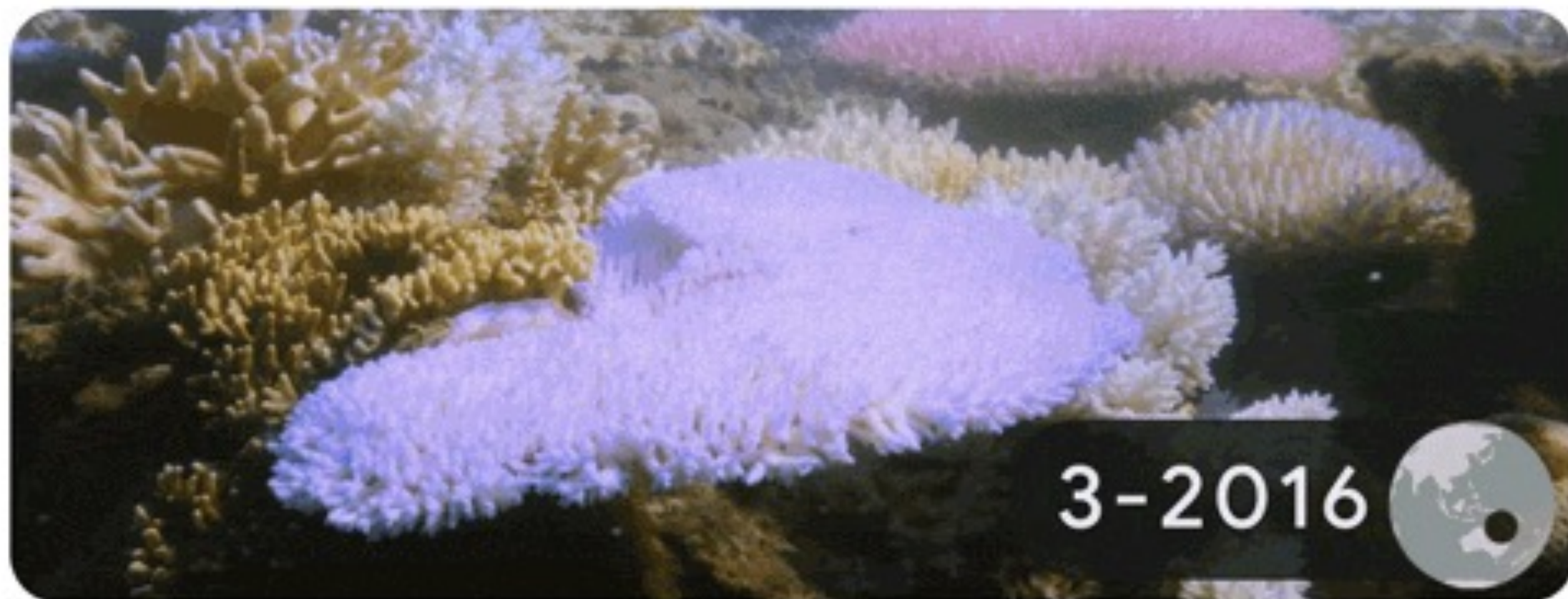




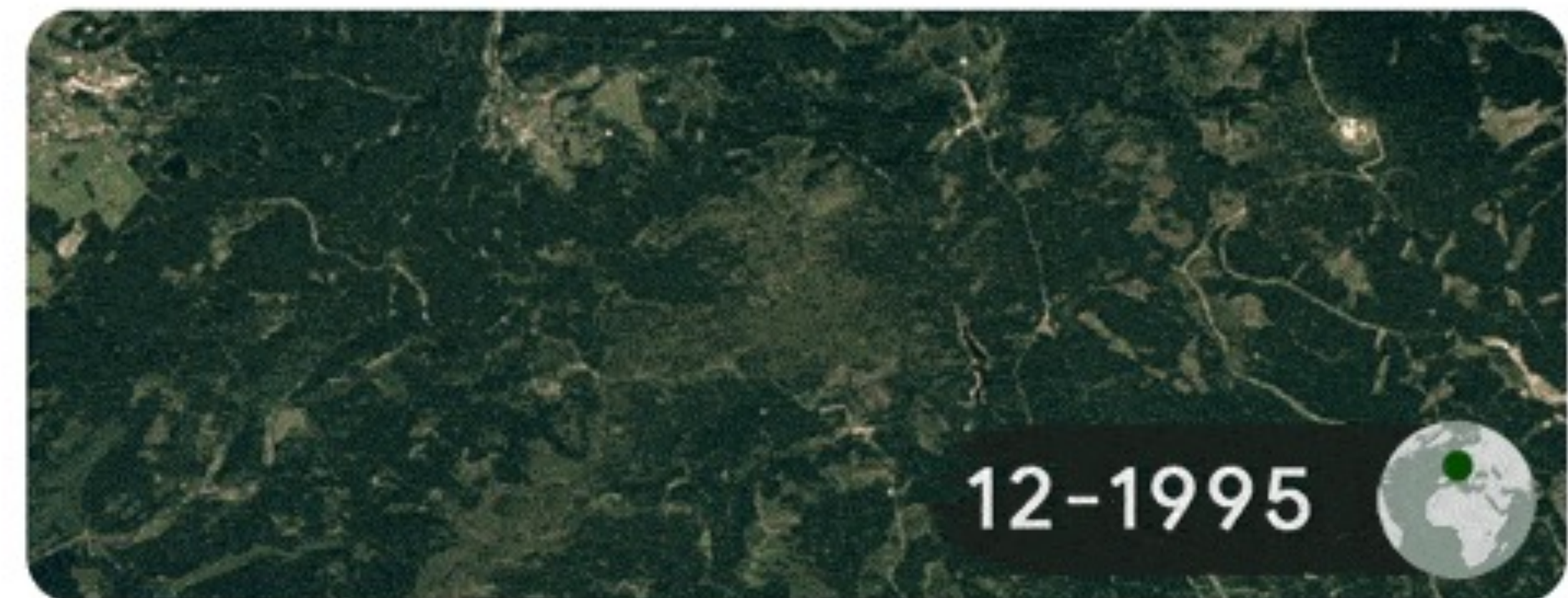




Glaciers retreating in Greenland

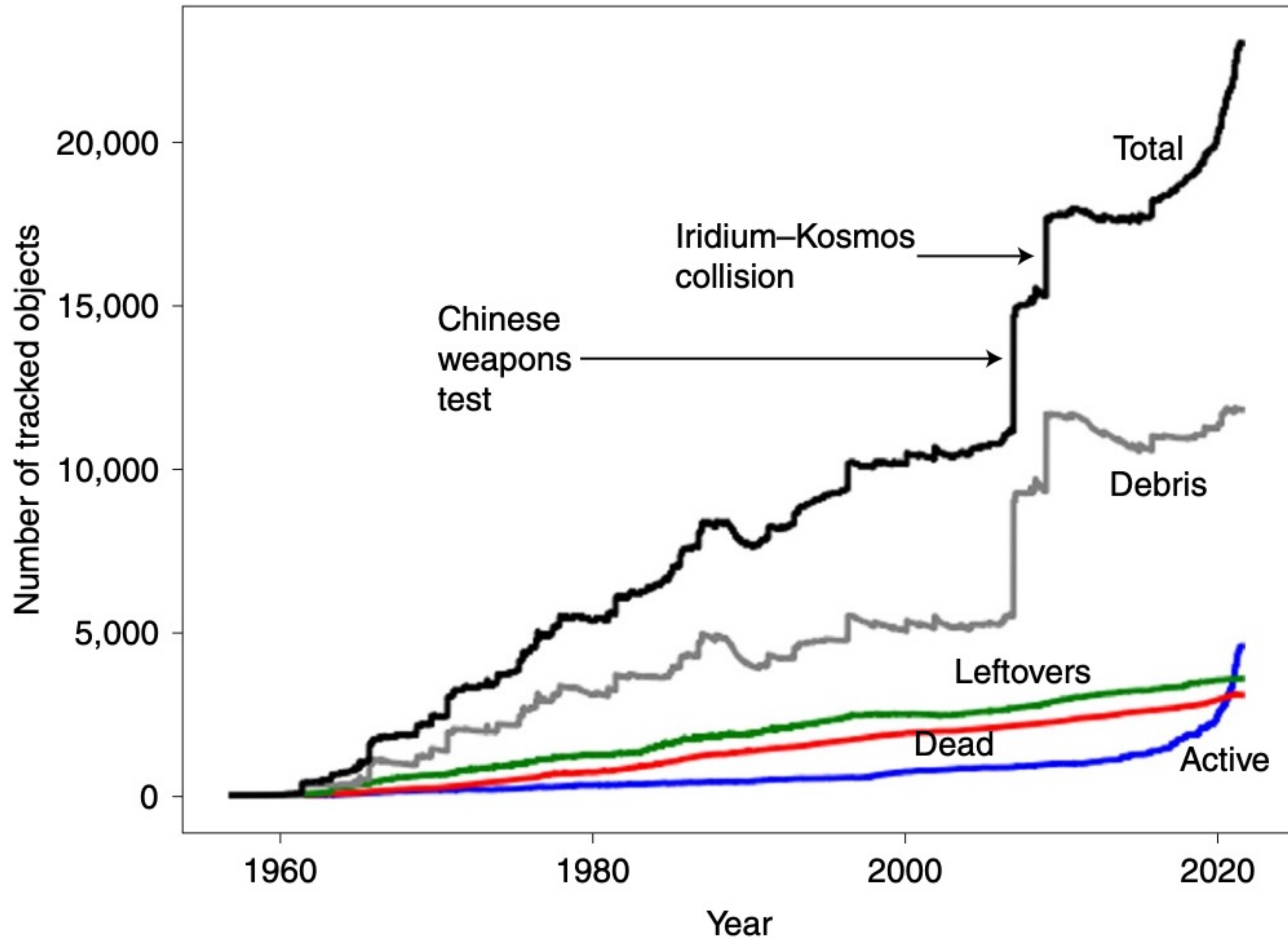


Coral bleaching in Australia



Forest loss in Germany

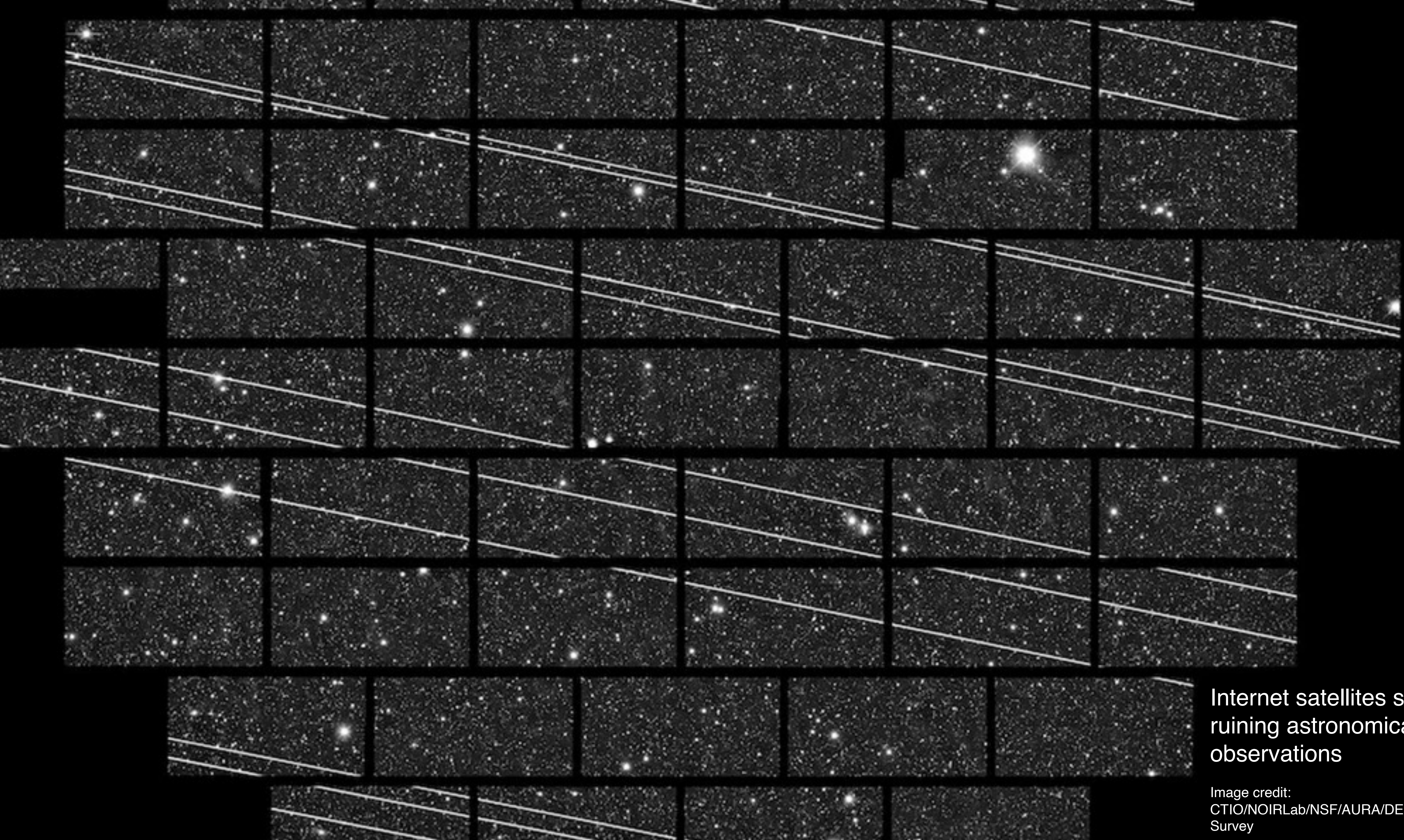




The growth of tracked space junk over time

Image credit: Lawrence, A., Rawls, M.L., Jah, M. et al. The case for space environmentalism. *Nat Astron* 6, 428–435 (2022). <https://doi.org/10.1038/s41550-022-01655-6>





Internet satellites streaks  
ruining astronomical  
observations

Image credit:  
CTIO/NOIRLab/NSF/AURA/DECam DELVE  
Survey





Shooting the passenger pigeon

Image source: The Illustrated Sporting and Dramatic News, July 3, 1875.





1970s space colony design

Image credit: NASA Ames Research Center / Rick Guidice





The surface of Mars, as seen by the Curiosity Rover

Image credit: NASA/JPL-Caltech/MSSS





*PLANET HOP* FROM  
**TRAPPIST-1e**



VOTED BEST "HAB ZONE" VACATION WITHIN 12 PARSECS OF EARTH





The Earth as seen from the Moon's orbit by the Lunar Reconnaissance Orbiter

Image credit: NASA/Goddard/Arizona State University



# Thank you!

[www.robertotrotta.com](http://www.robertotrotta.com)

 @R\_Trotta