

# The Universe

Dr. Paul Lasky



# Question:

How heavy is a semi-trailer truck?



1,800 x



# Question:

## How heavy is Mt. Everest?



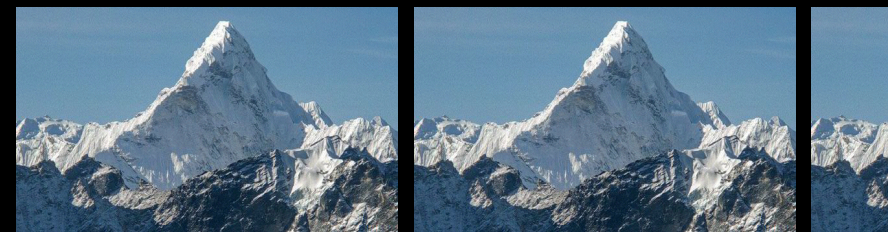
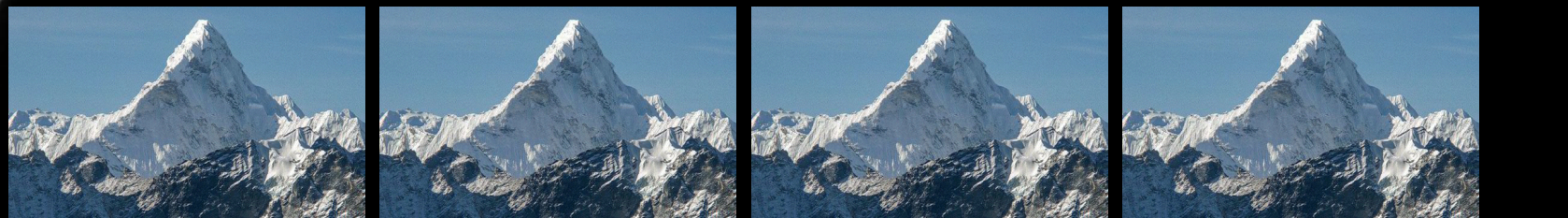
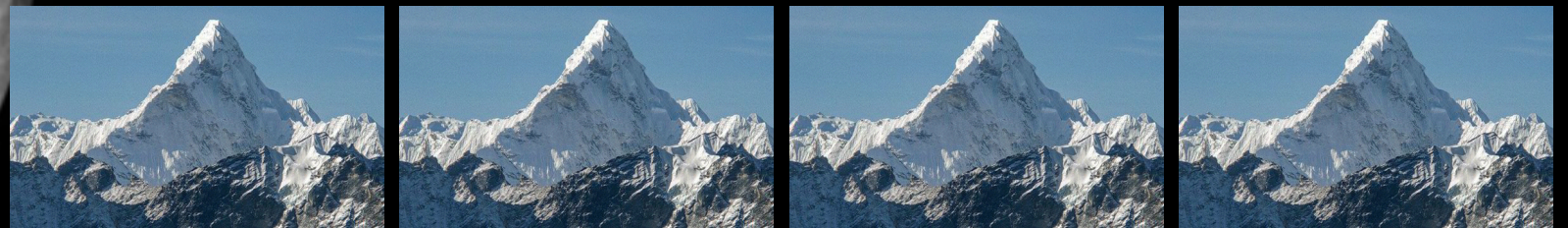
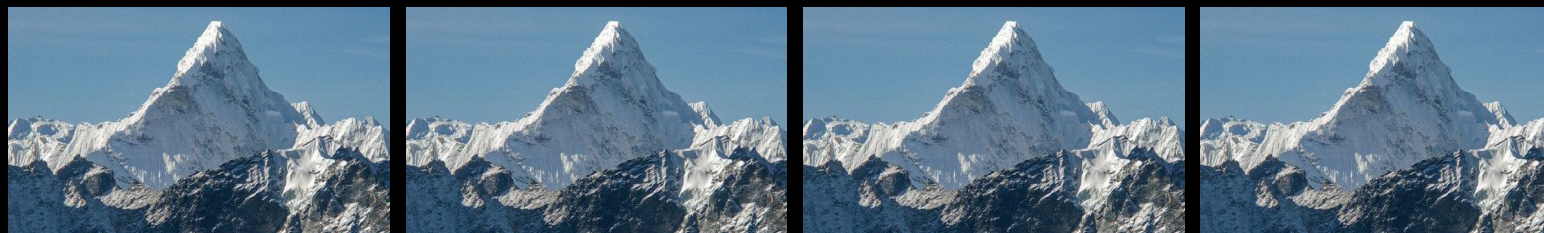
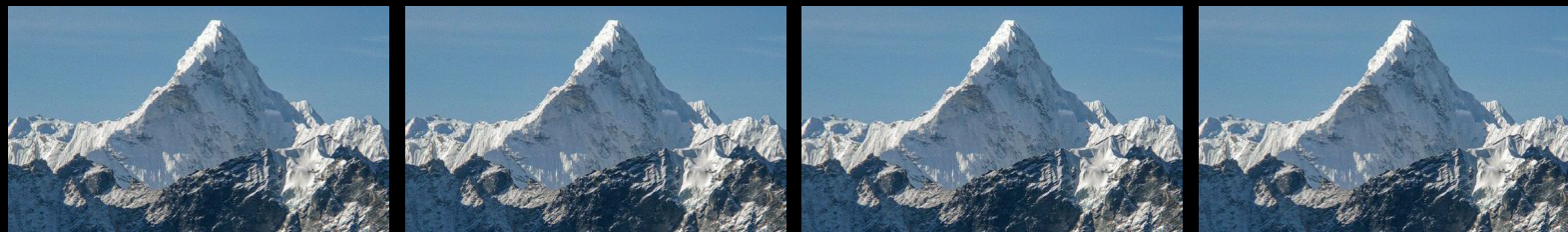
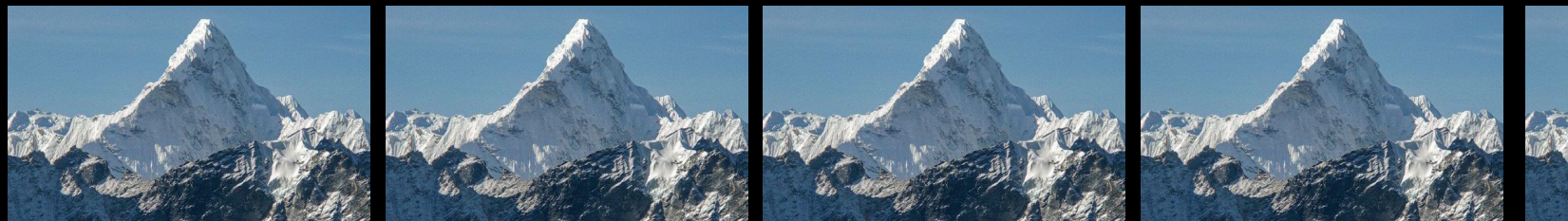
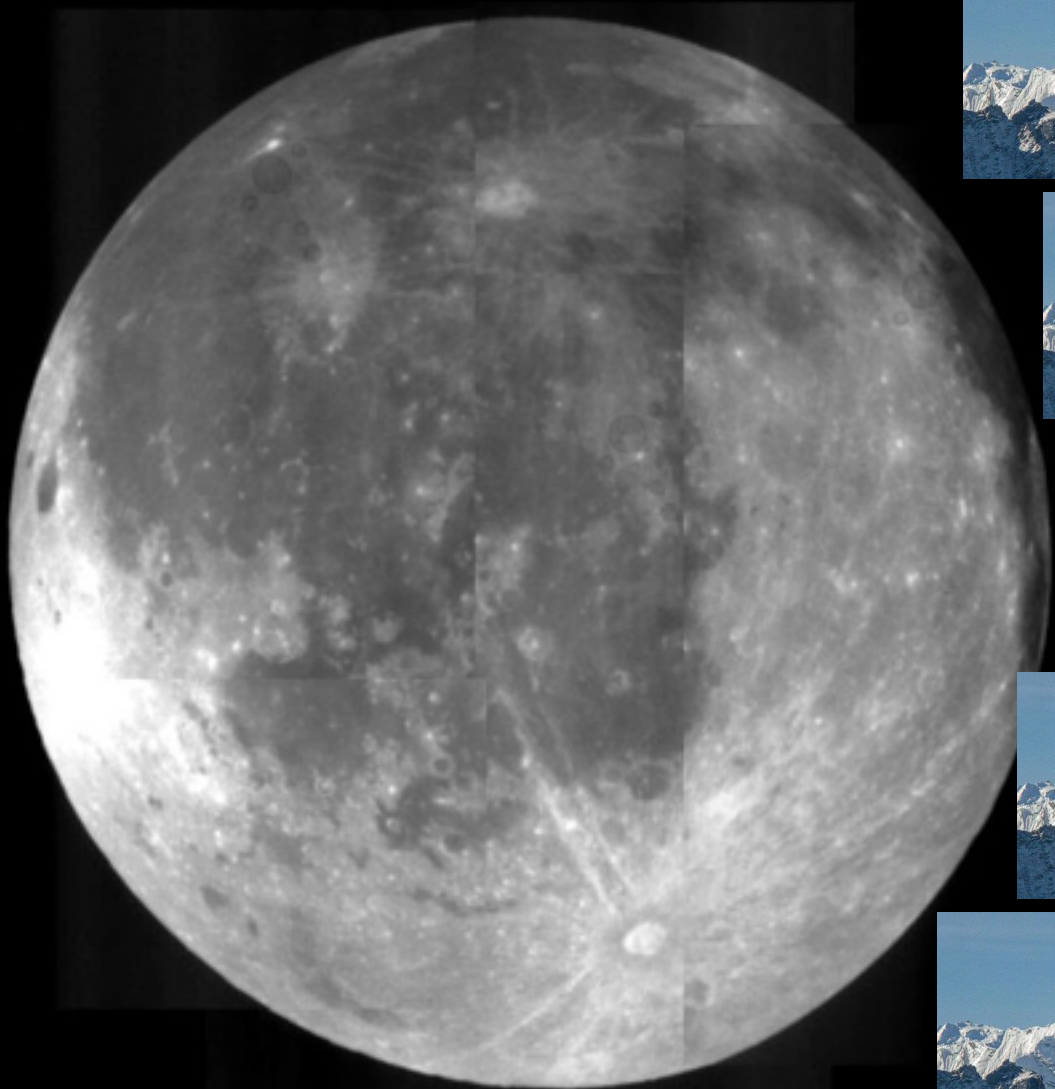
10,000,000 x





# Question:

## How heavy is the Moon?



200,000,000,000 x





# Question:

## How heavy is the Earth?

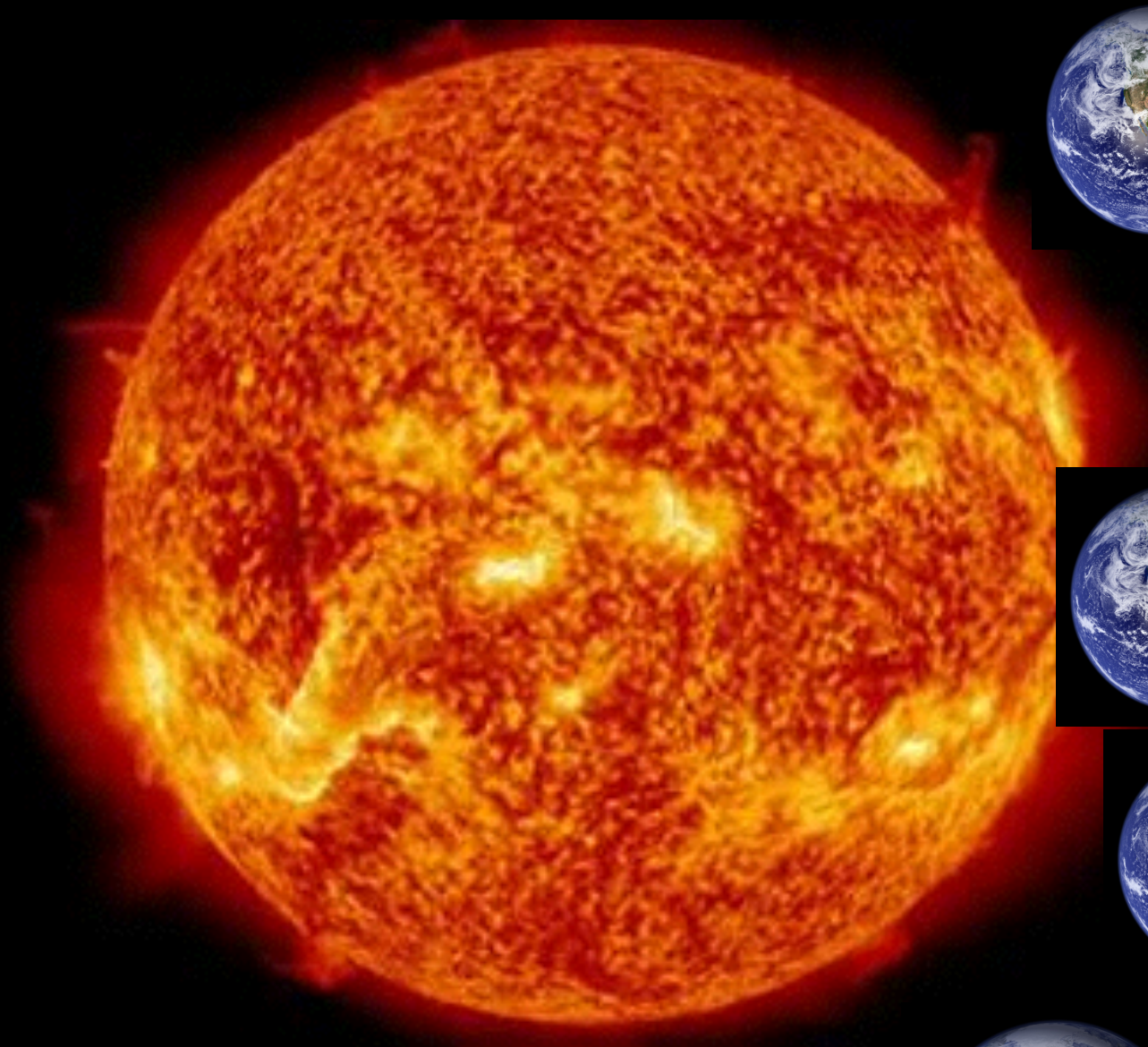


**85 x**

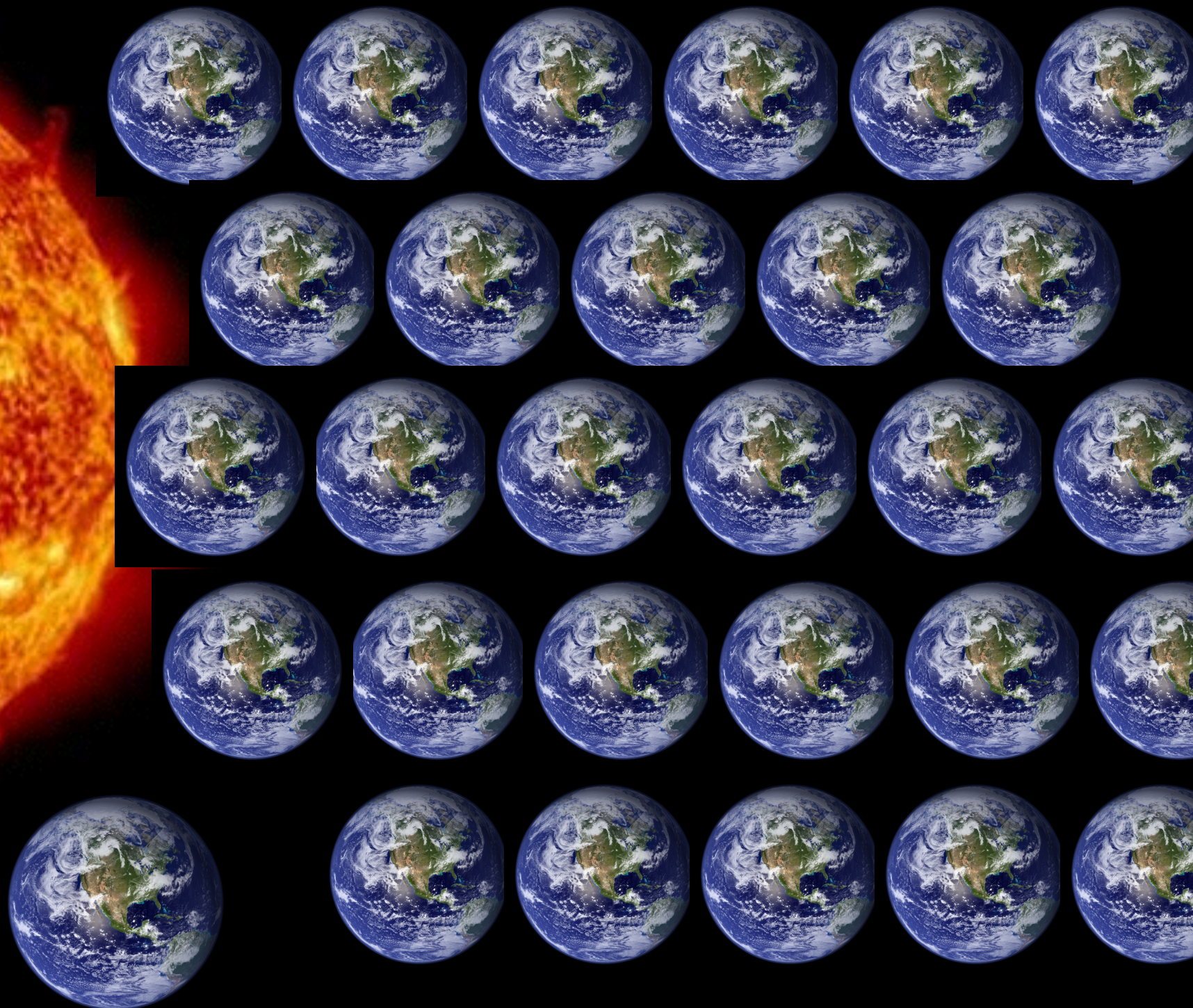




# Question: How heavy is the Sun?



**331,500 x**



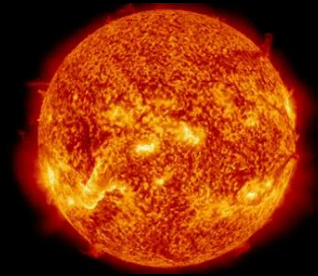




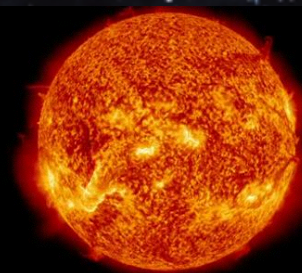


# Question:

## How many stars in the Milky Way?



200,000,000,000 x

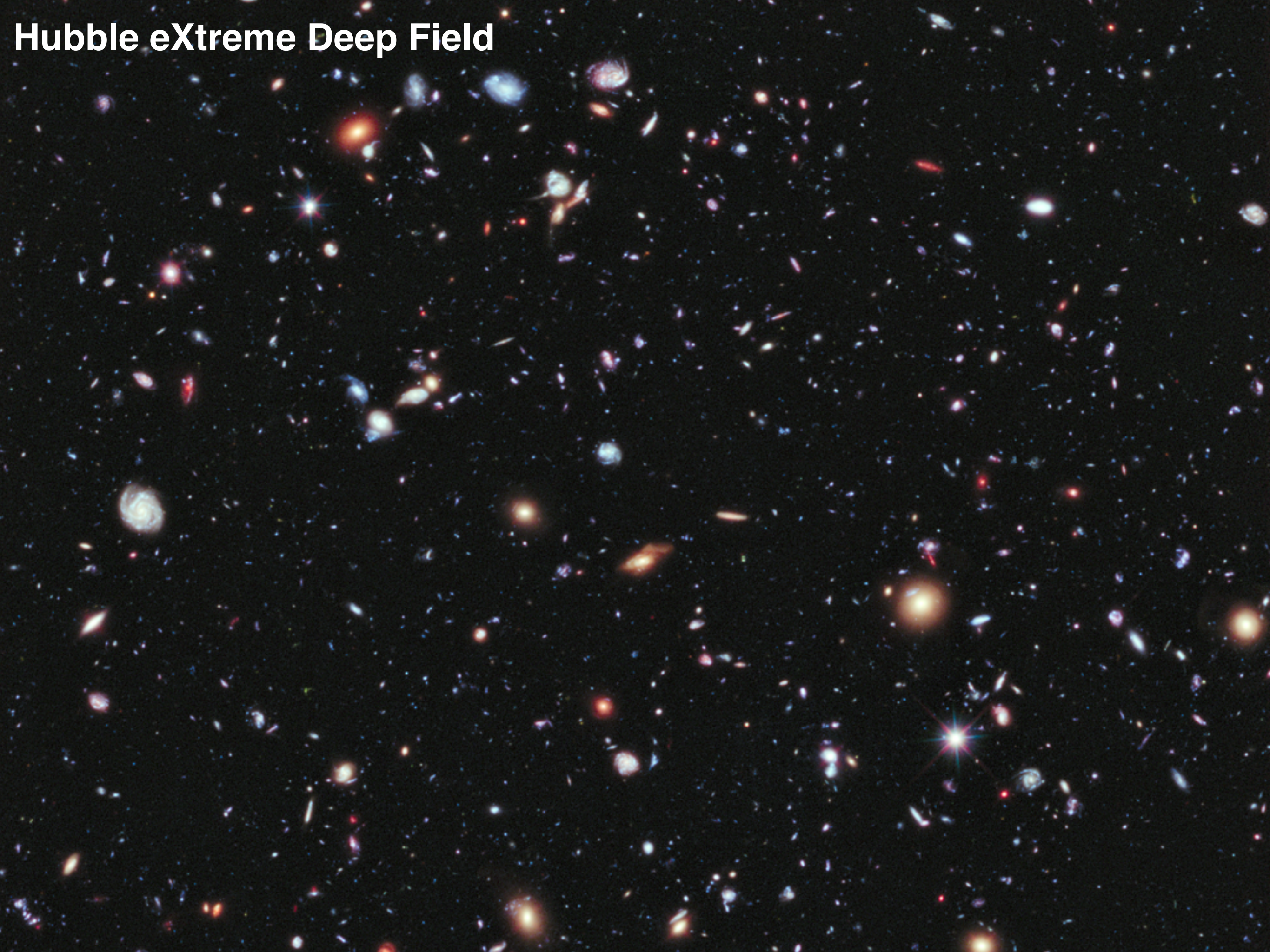






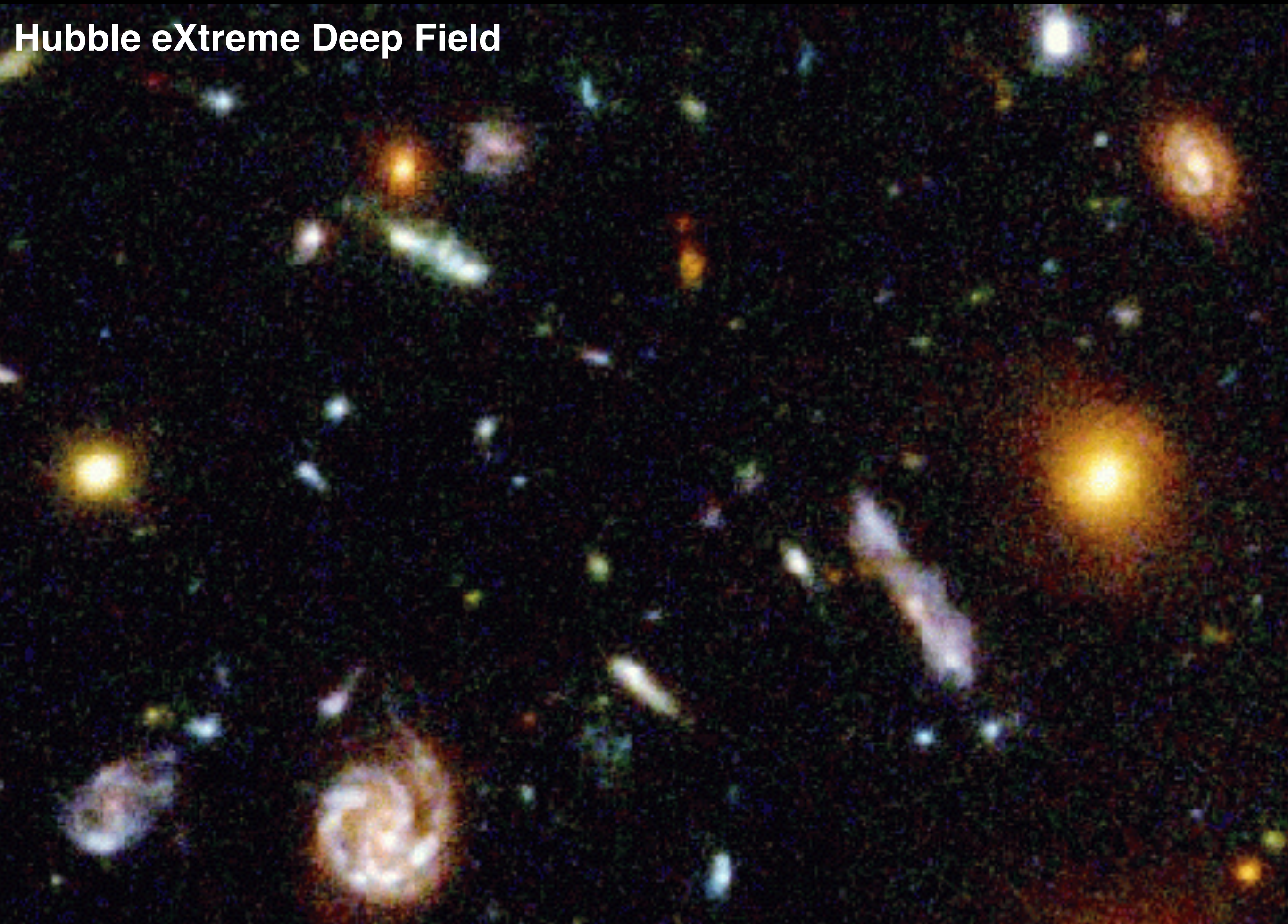


# Hubble eXtreme Deep Field





# Hubble eXtreme Deep Field



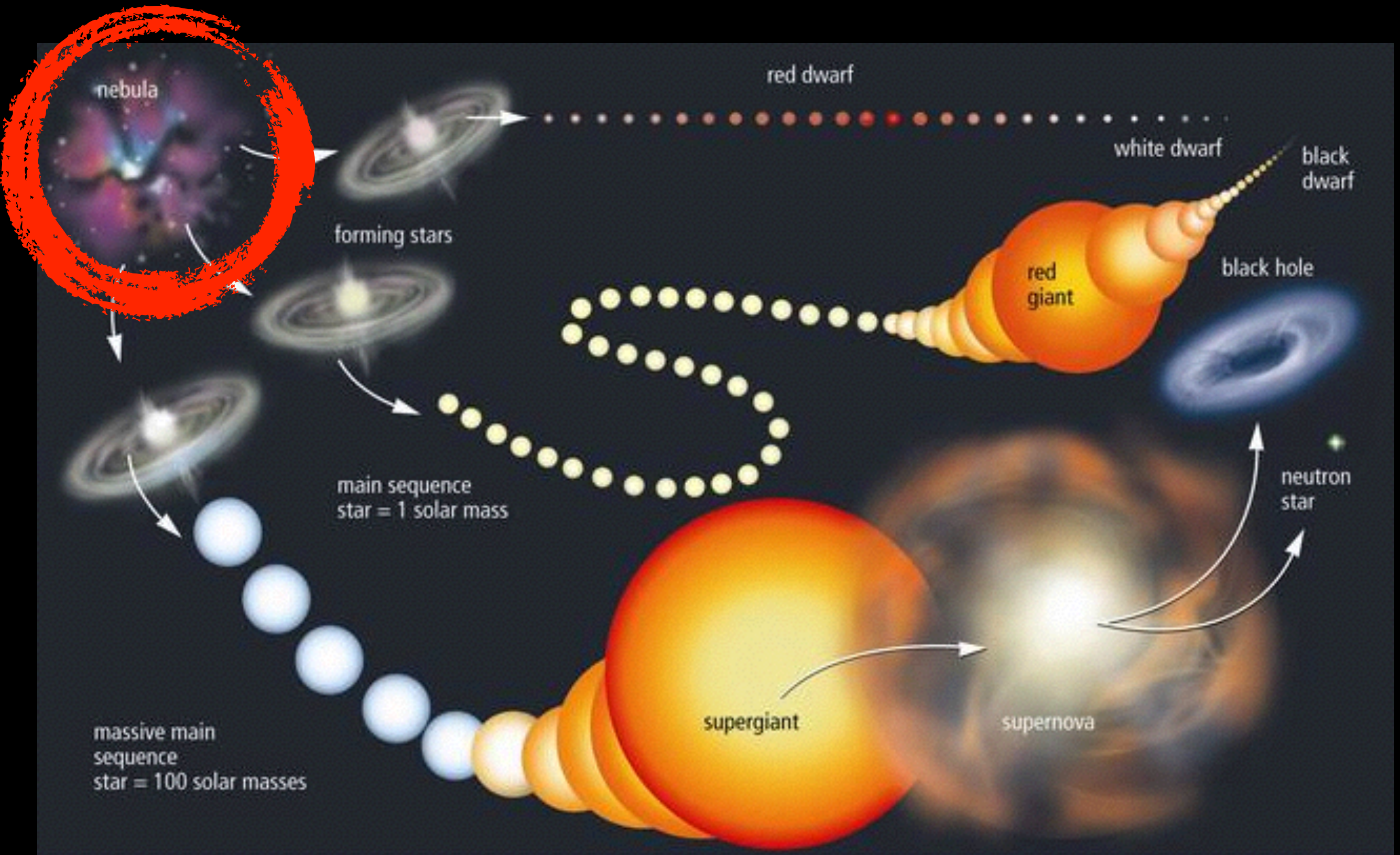


**Question:**  
**How many galaxies in the Universe?**

**100,000,000,000 x**











IC 434 - The Horsehead Nebula 1,500 ly away





Eagle Nebula 'pillars of creation'

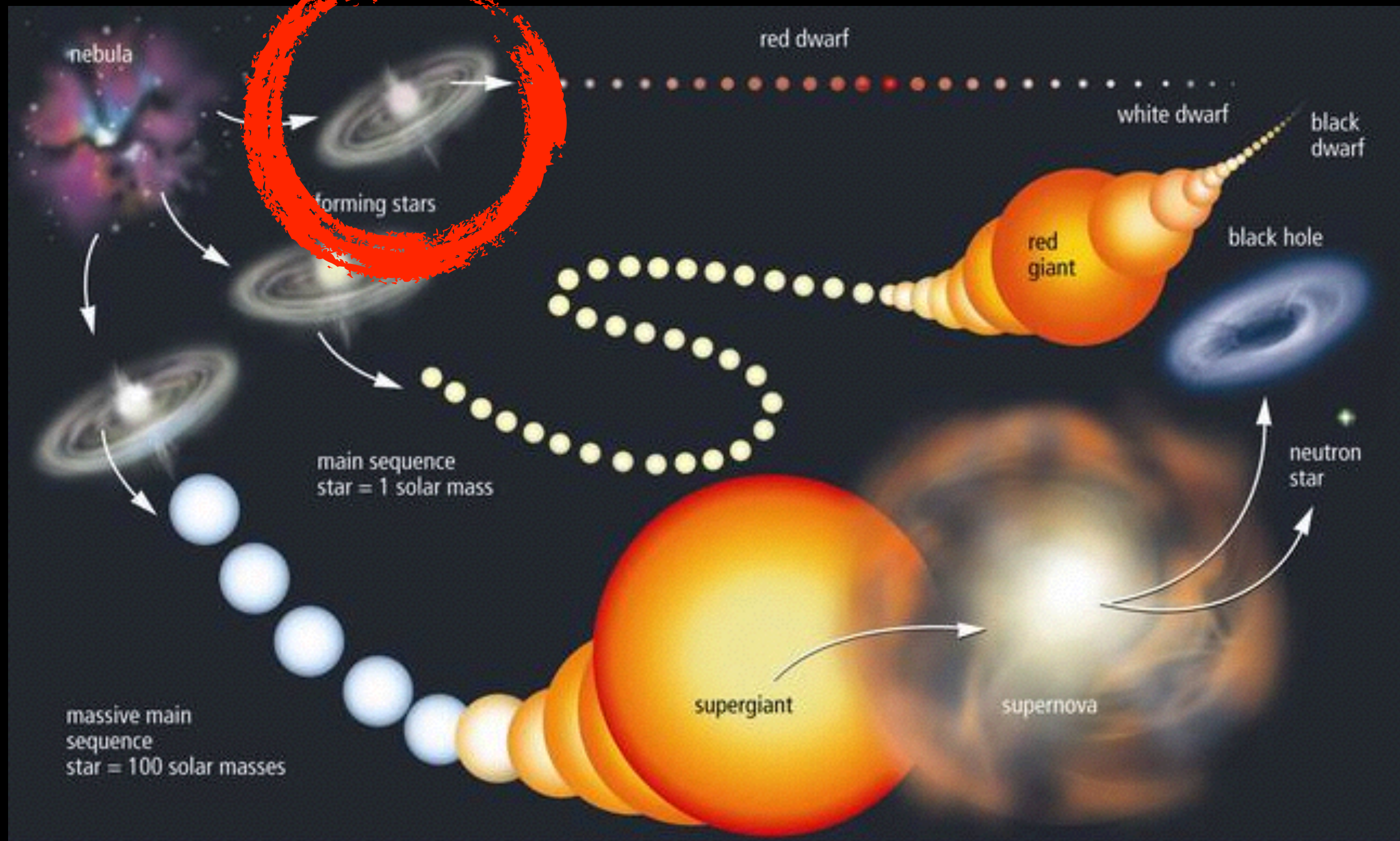




Eagle Nebula 'pillars of creation'



# STARBORNED BARS!







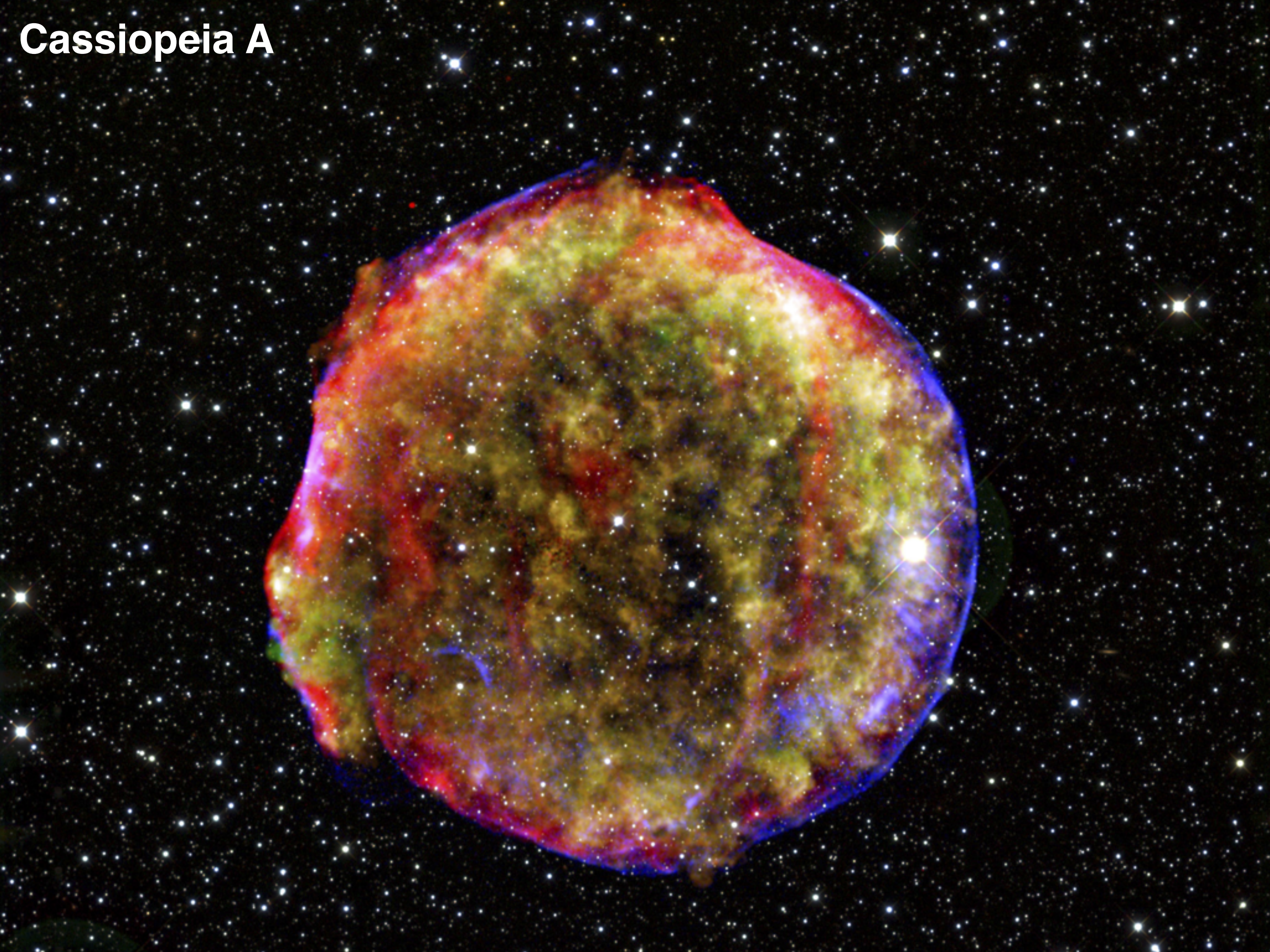


**Crab Nebula**  
**Supernova 1054 AD**  
**(recorded by Chinese)**



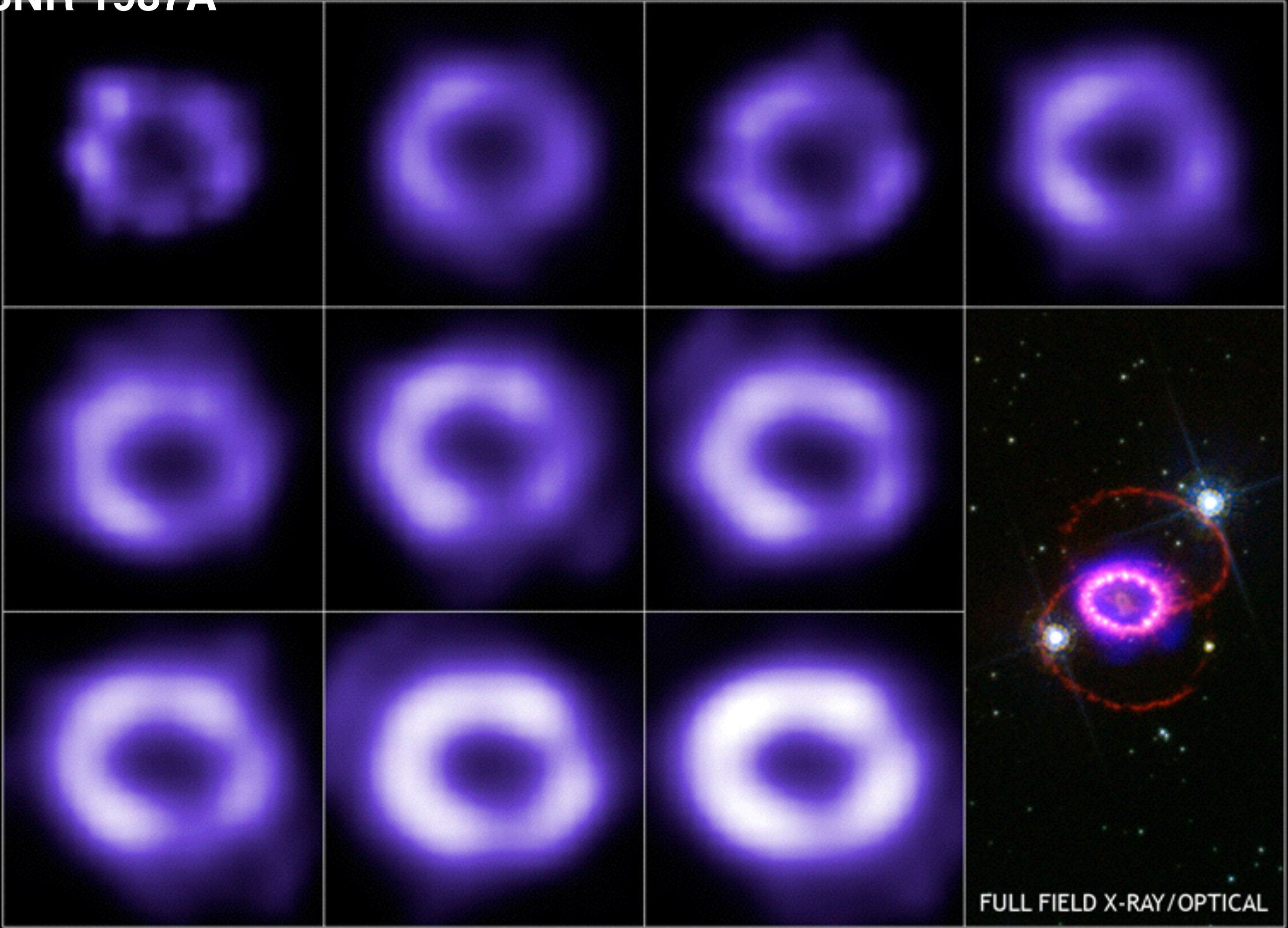


**Cassiopeia A**



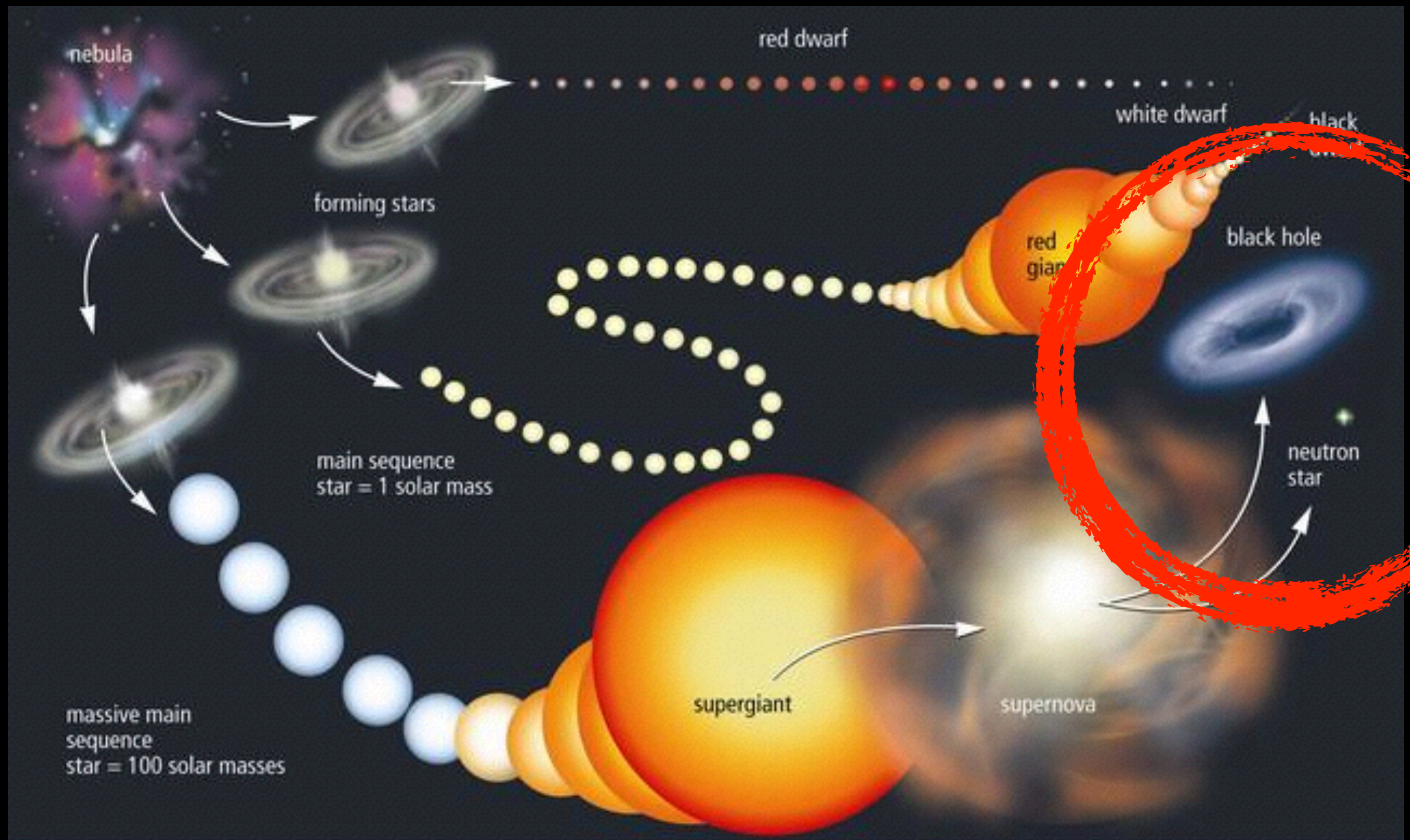


SNR 1987A

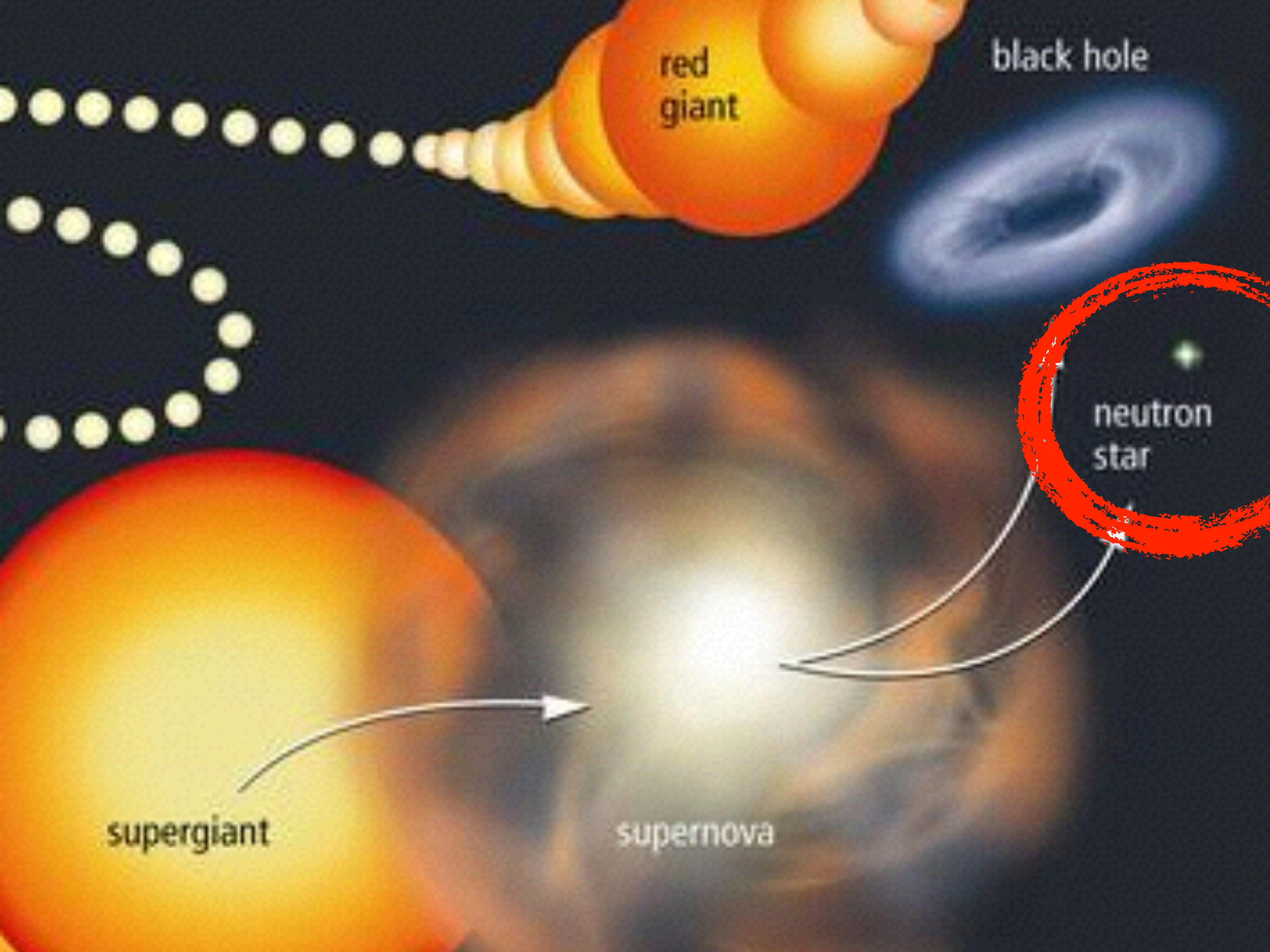


FULL FIELD X-RAY/OPTICAL

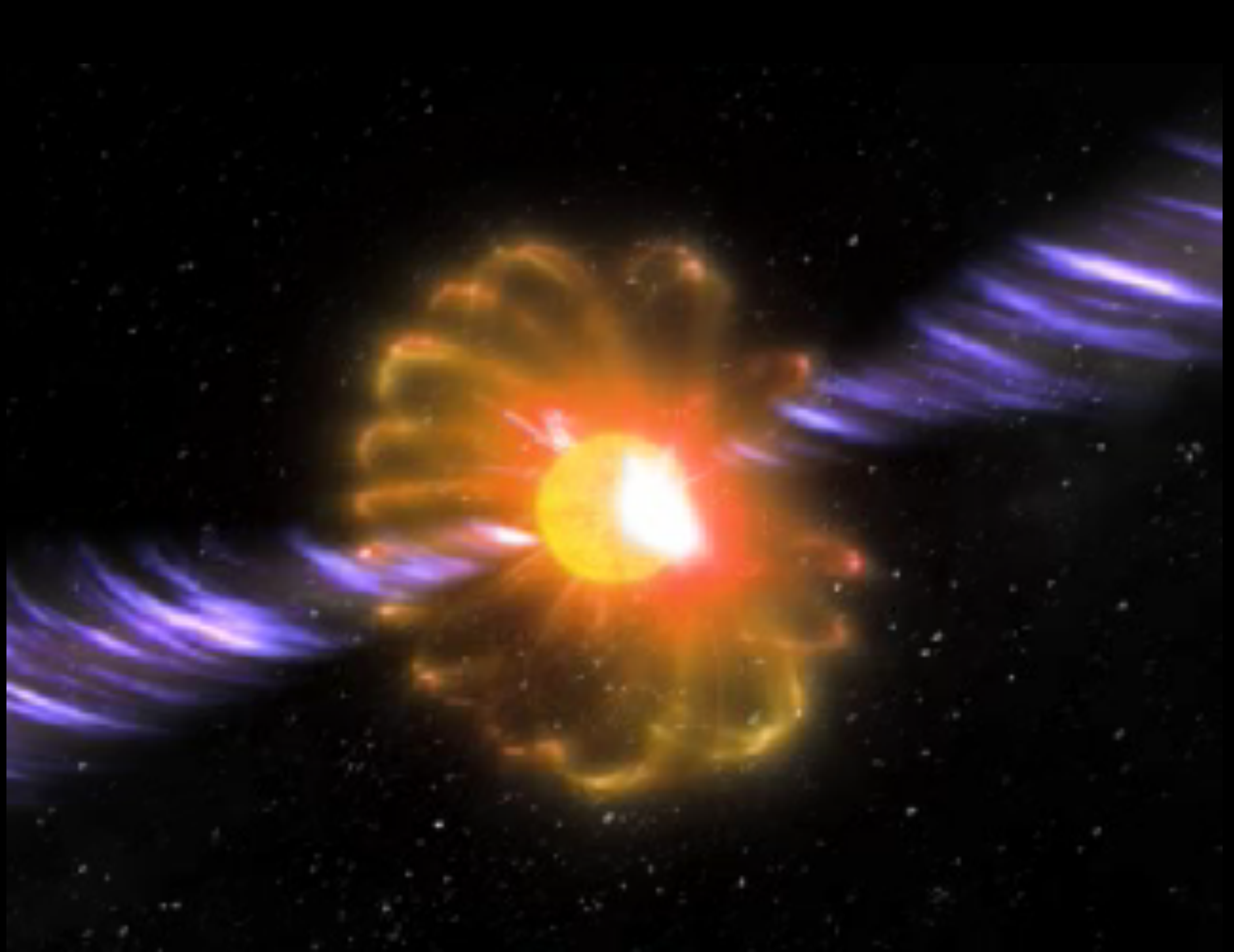




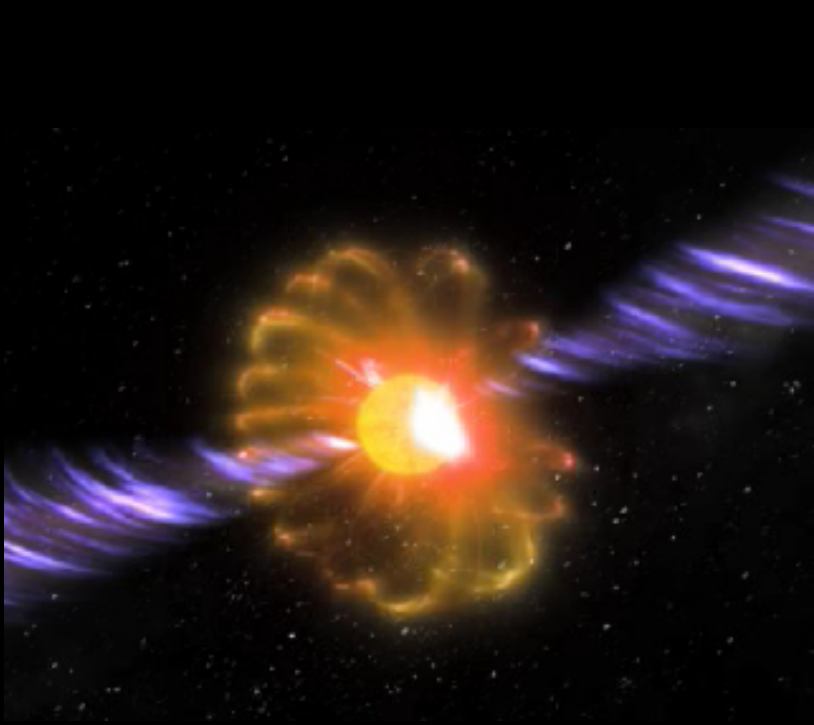








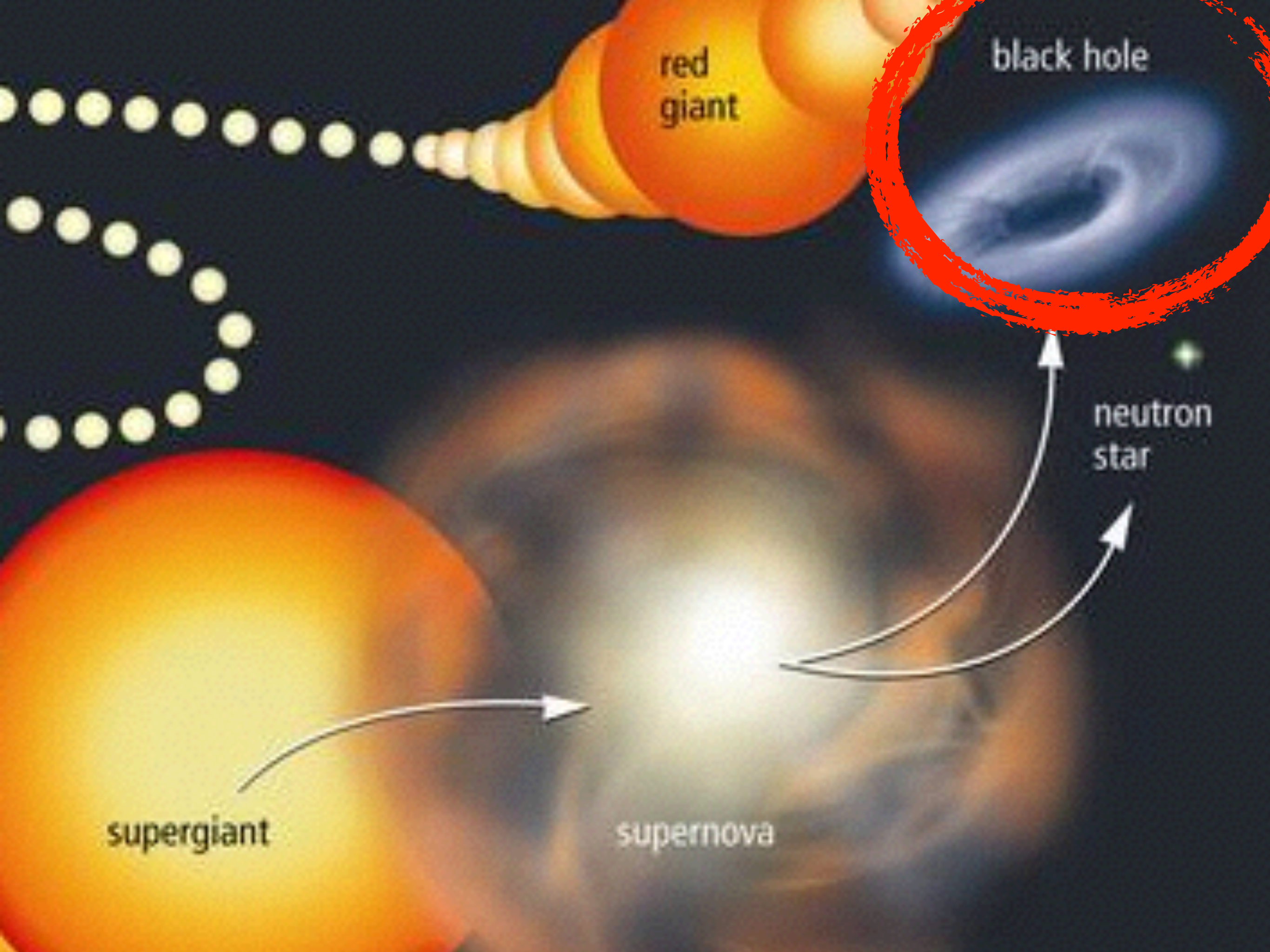




**1 teaspoon ~ 1,000,000,000,000 kg**  
**(900 Pyramids of Giza!)**

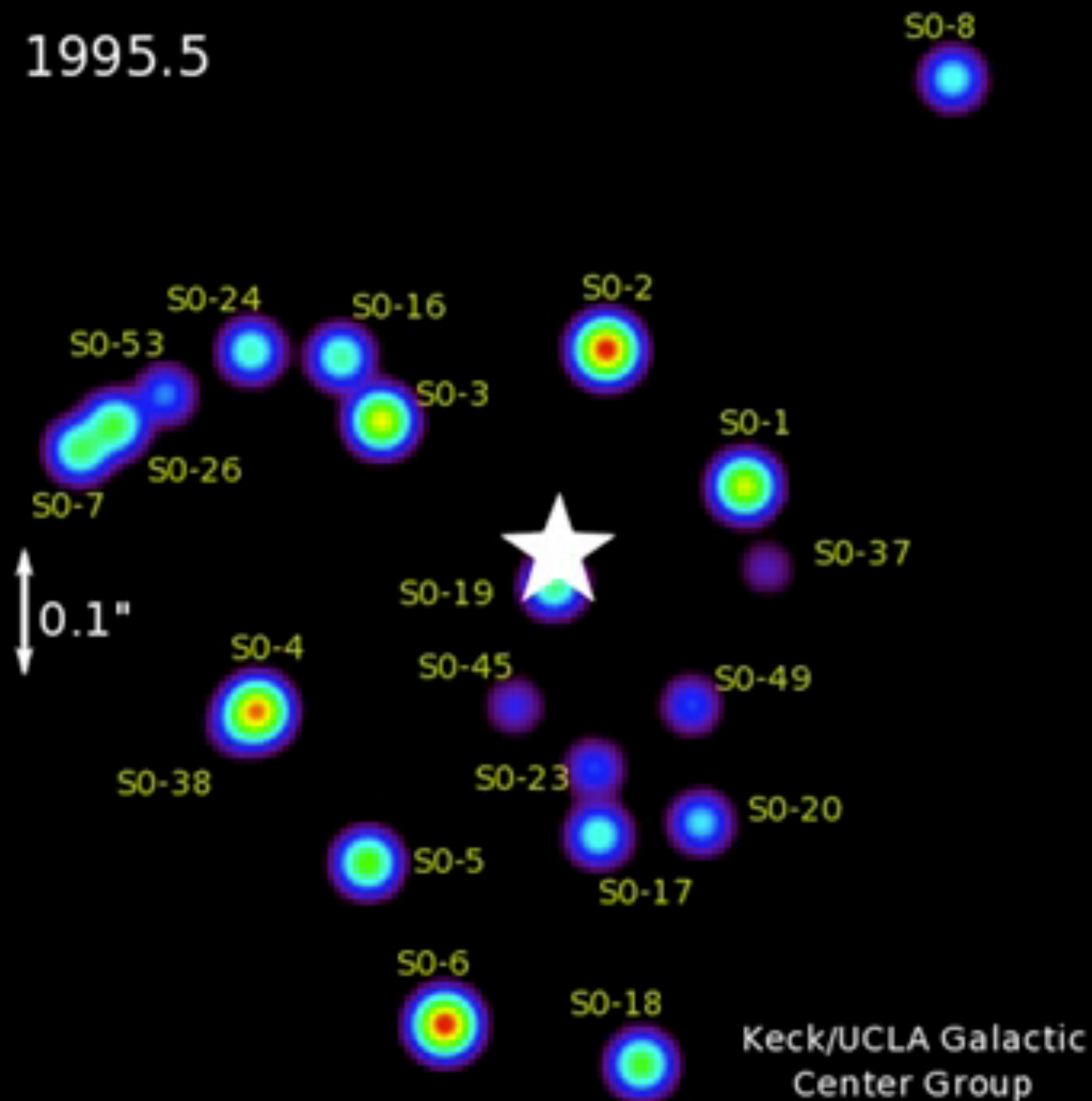






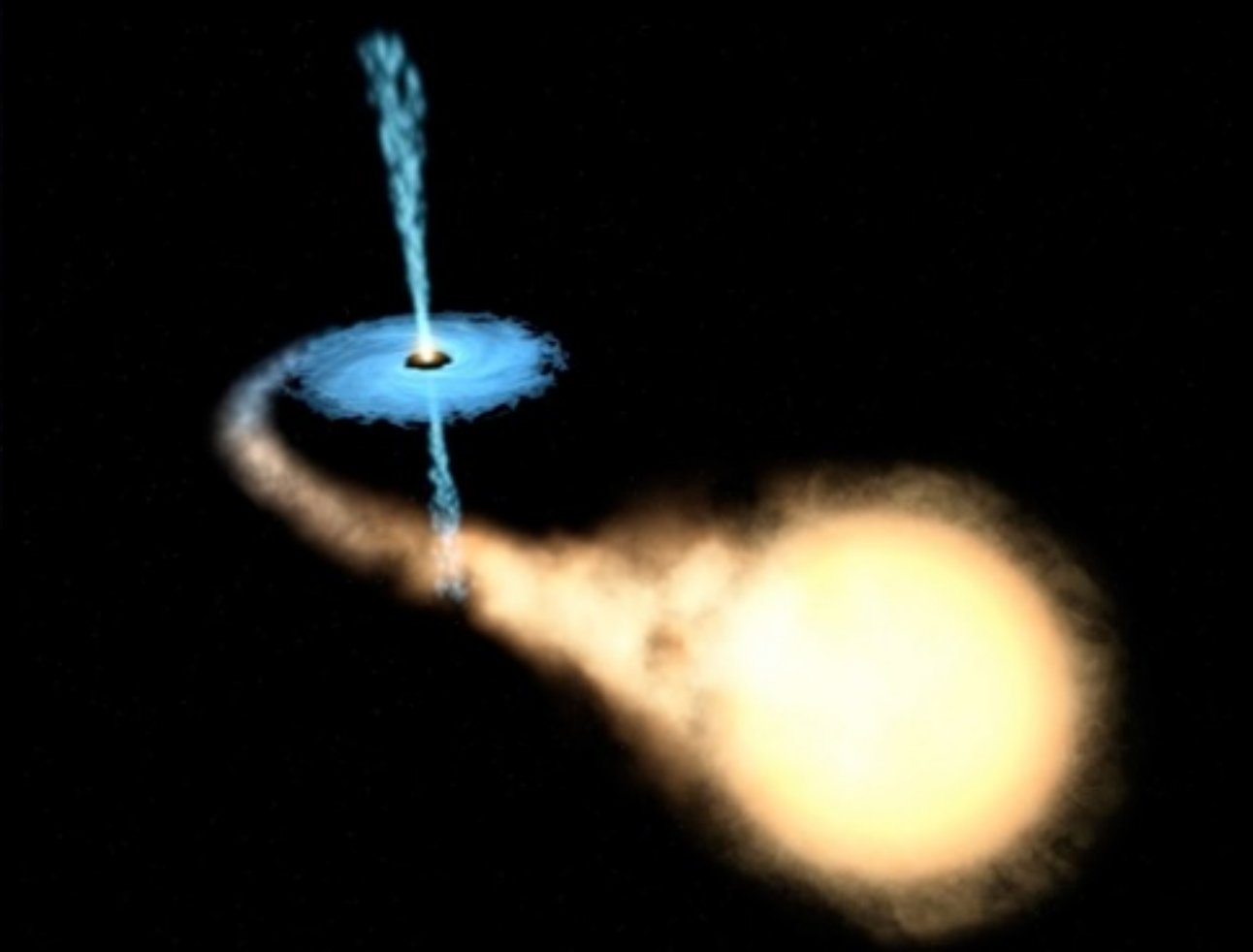
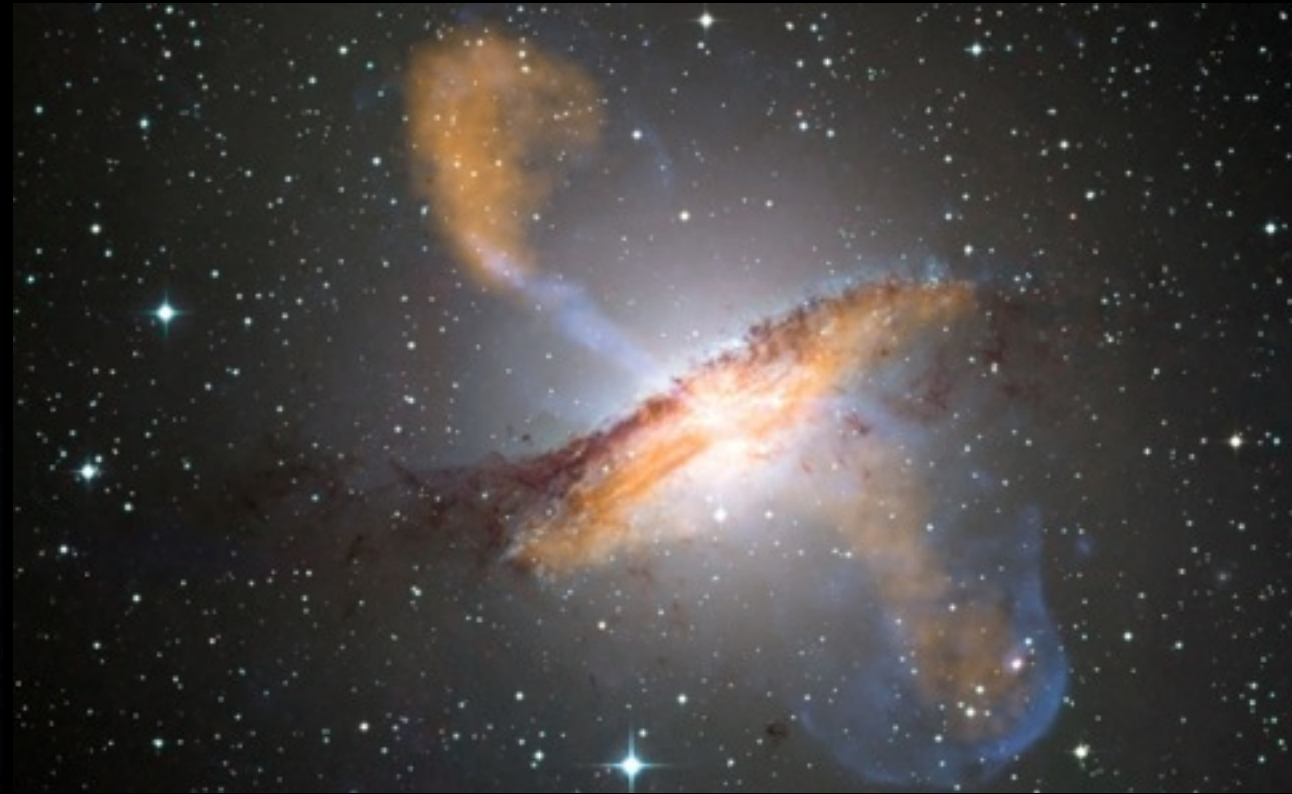
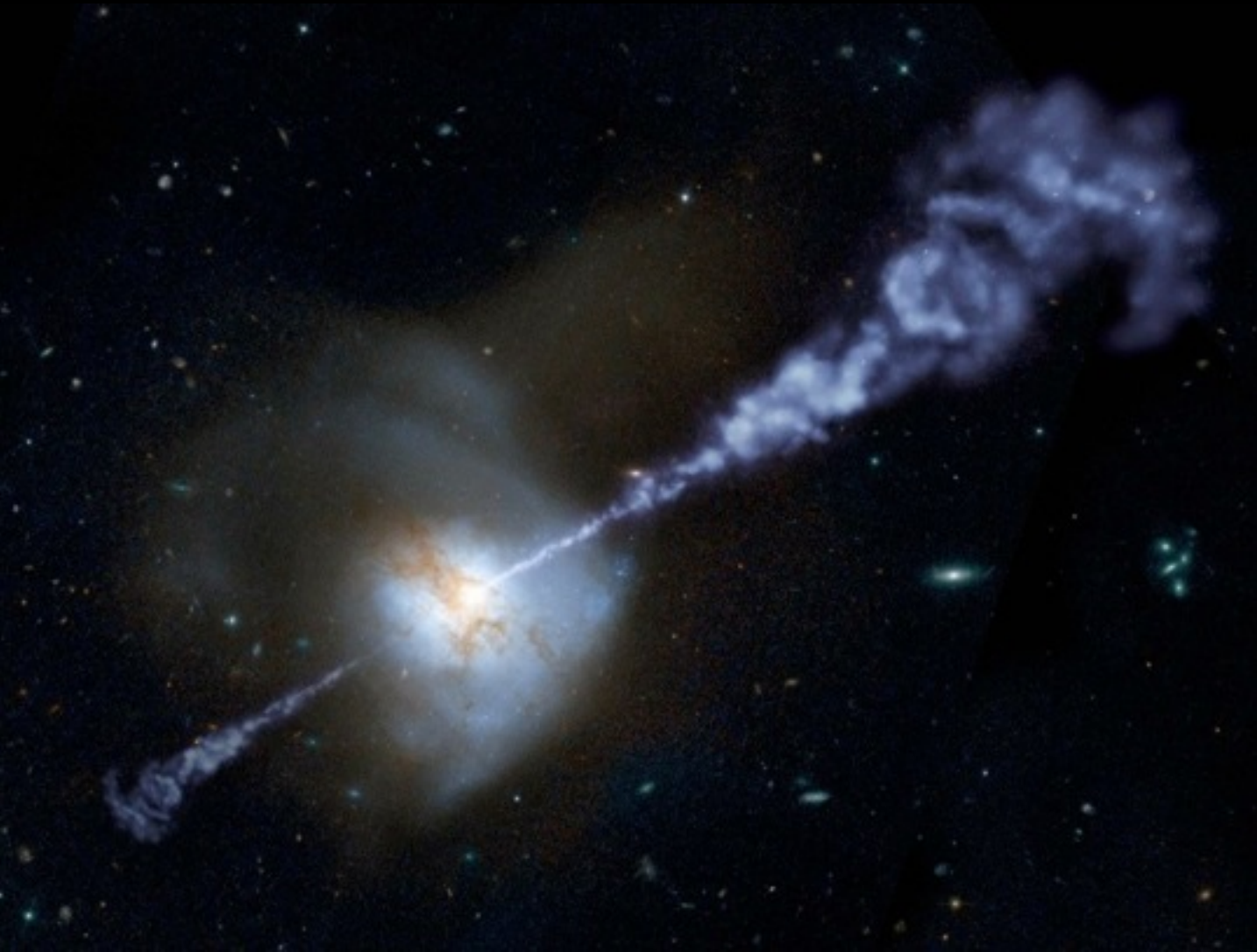


# Do black holes exist?



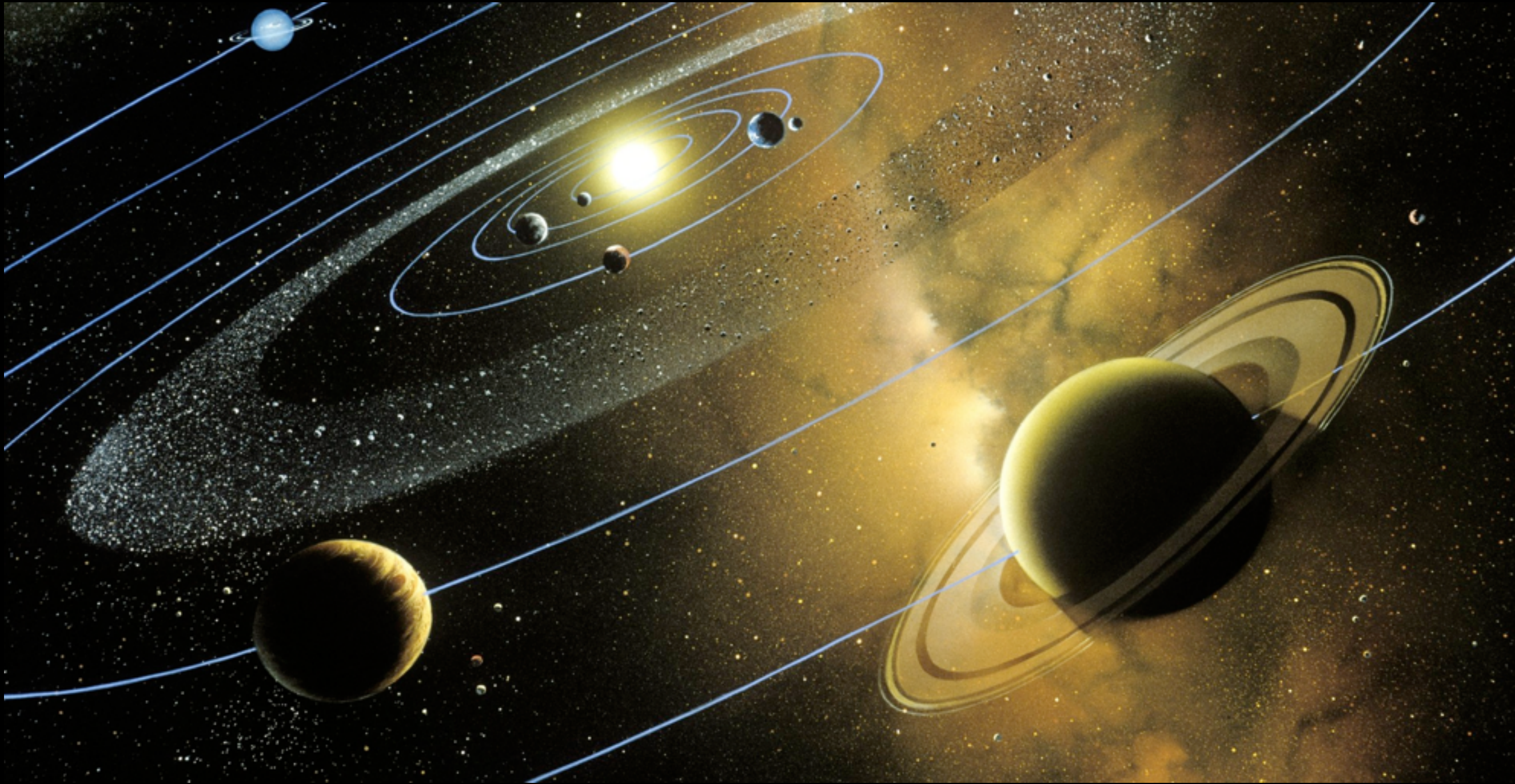


# Do black holes exist?





# A thought experiment?





# A thought experiment?

