

# *Les grands observatoires astronomiques et les découvertes associées*

*Fabrice Martins*

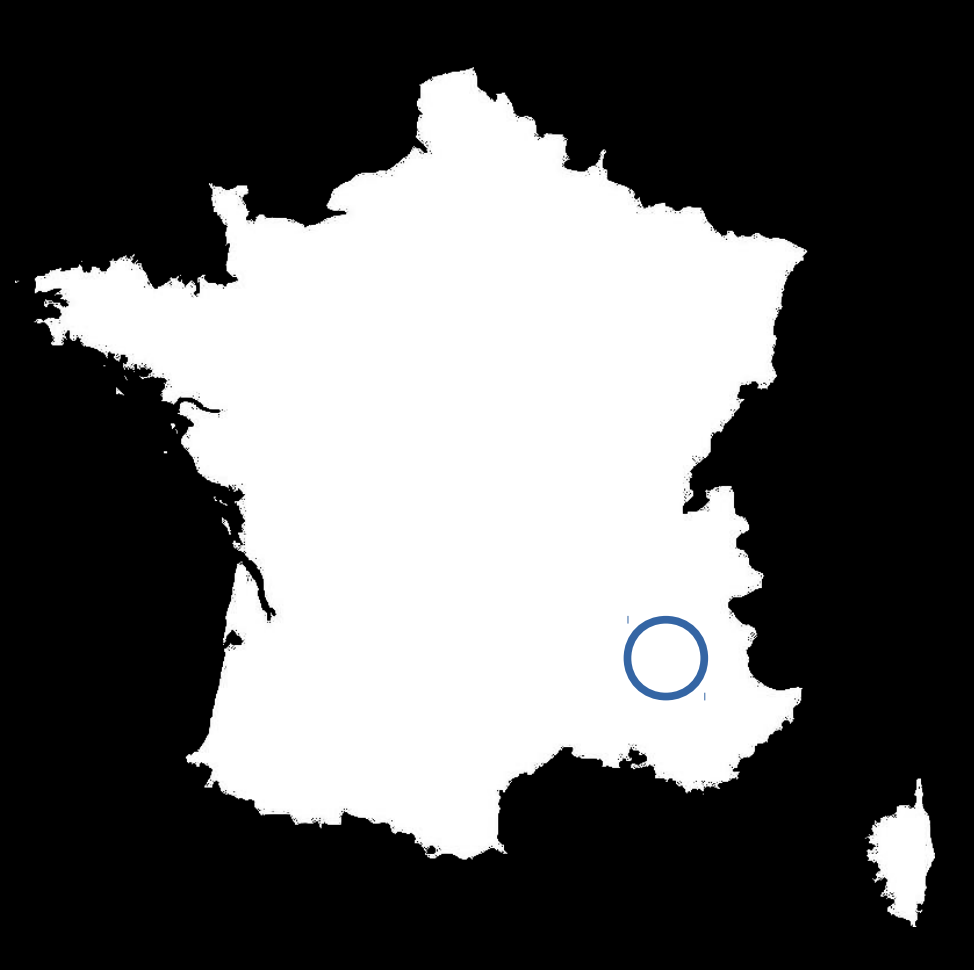
*CNRS*

*Laboratoire Univers et Particules de  
Montpellier*





© OHP/CNRS



***Observatoire de Haute Provence***

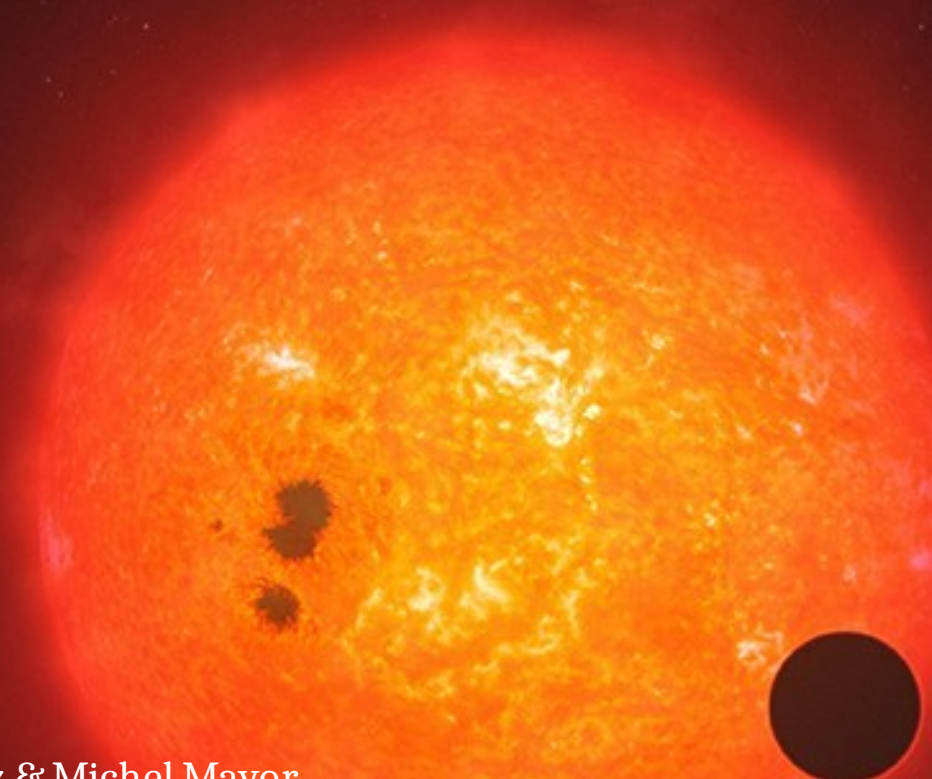




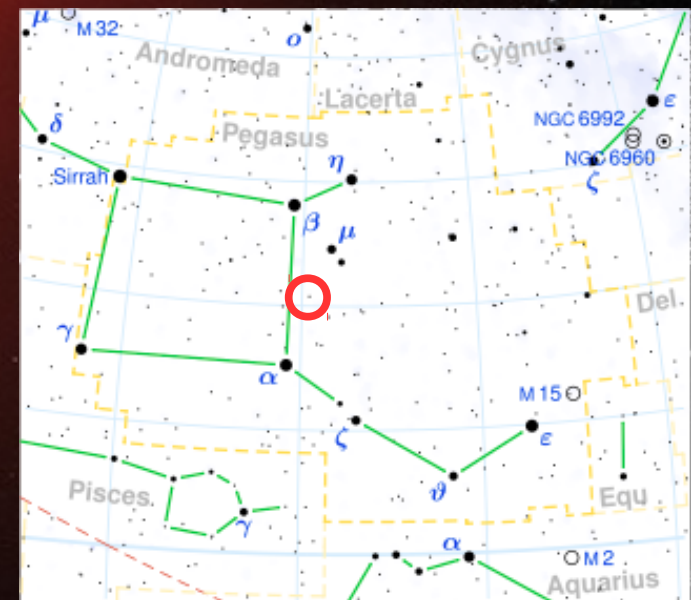
# La première exoplanète

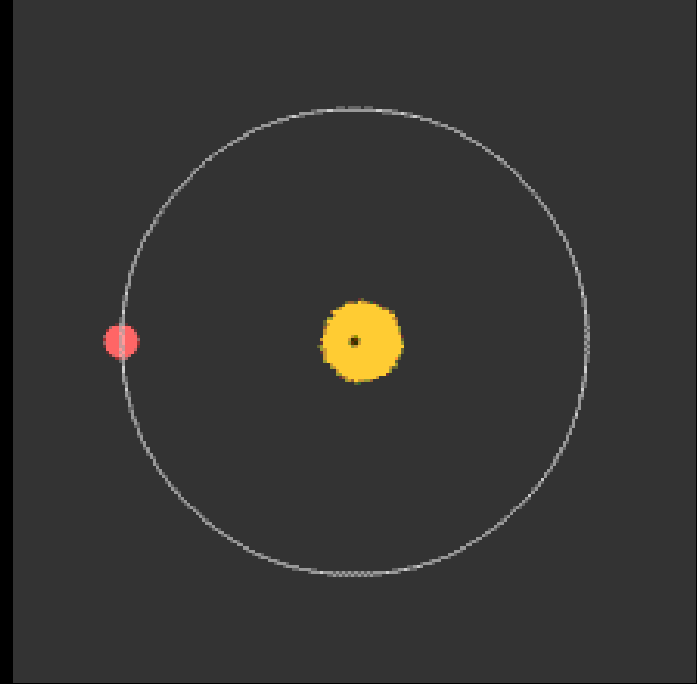
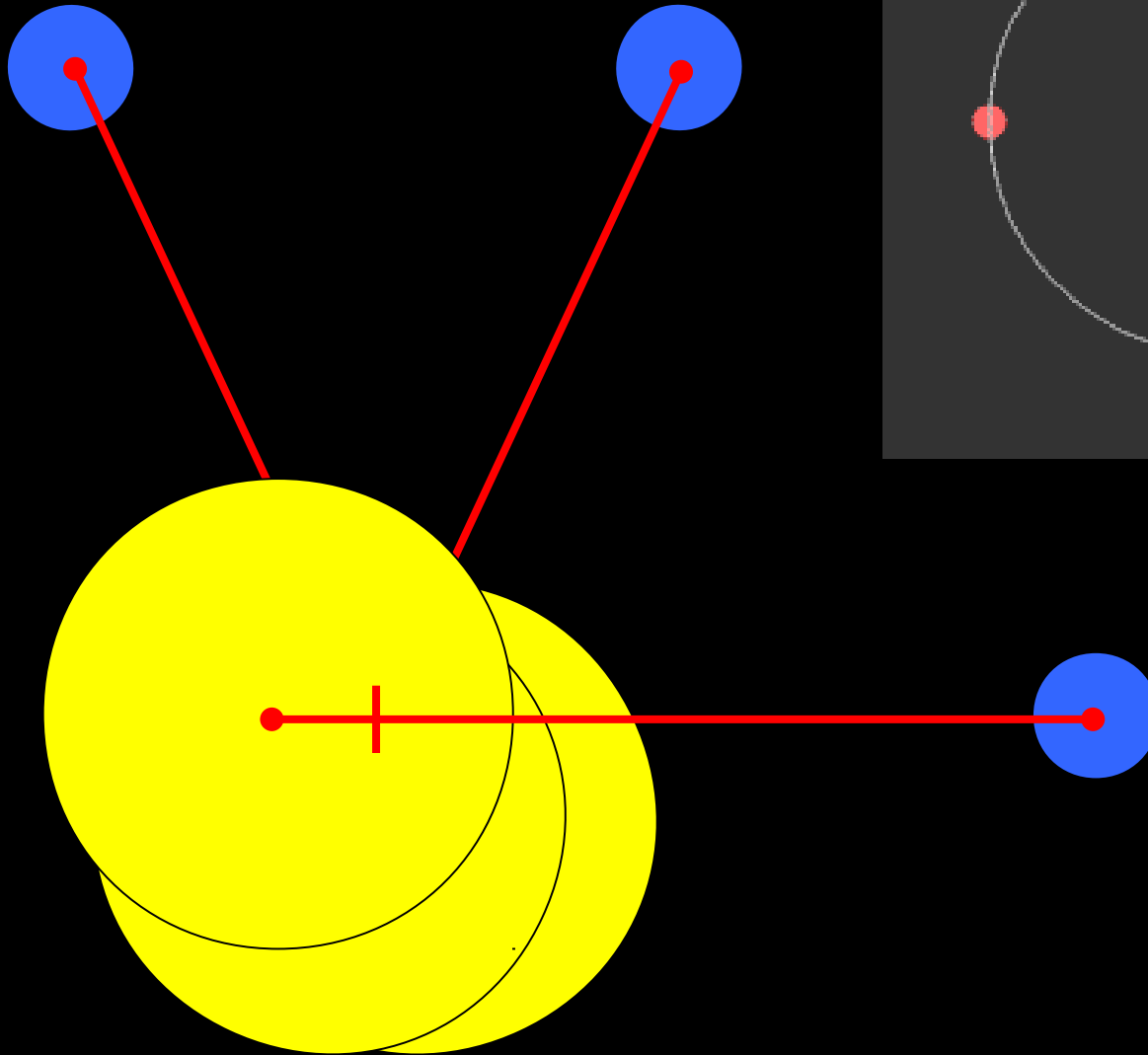
1995

51 Peg b

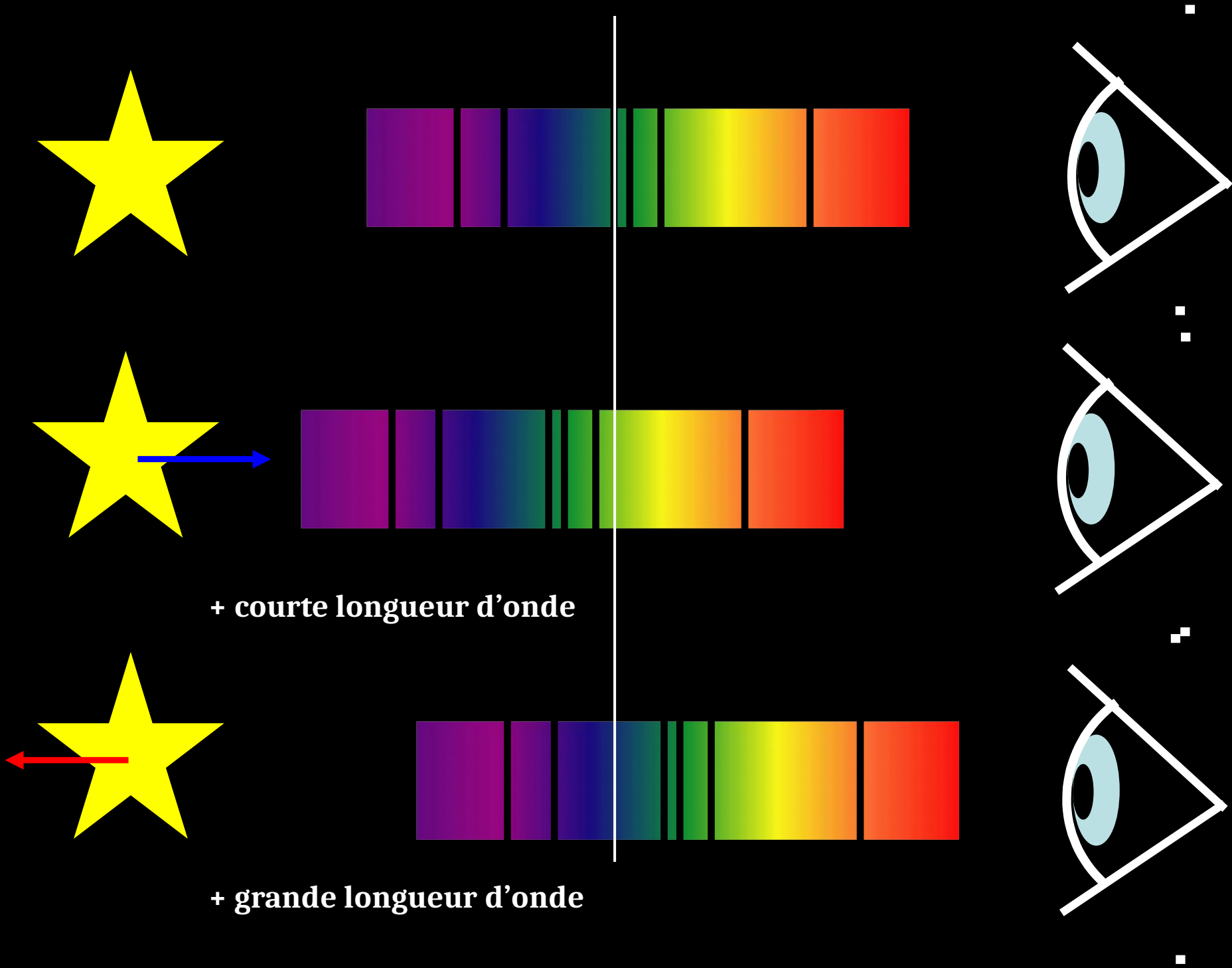


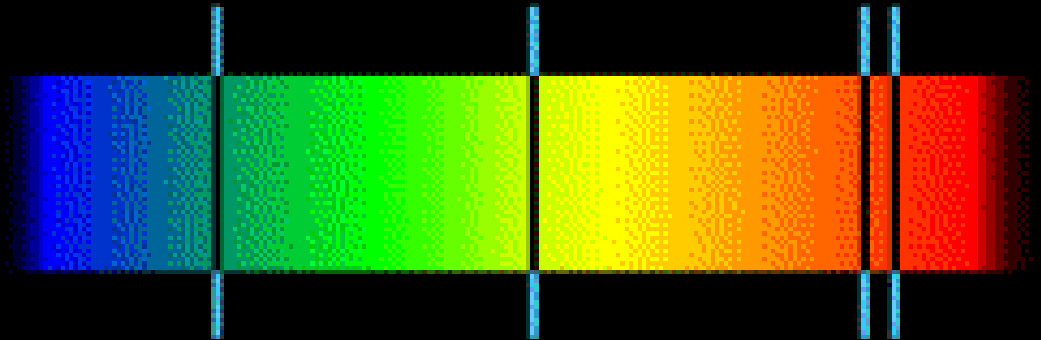
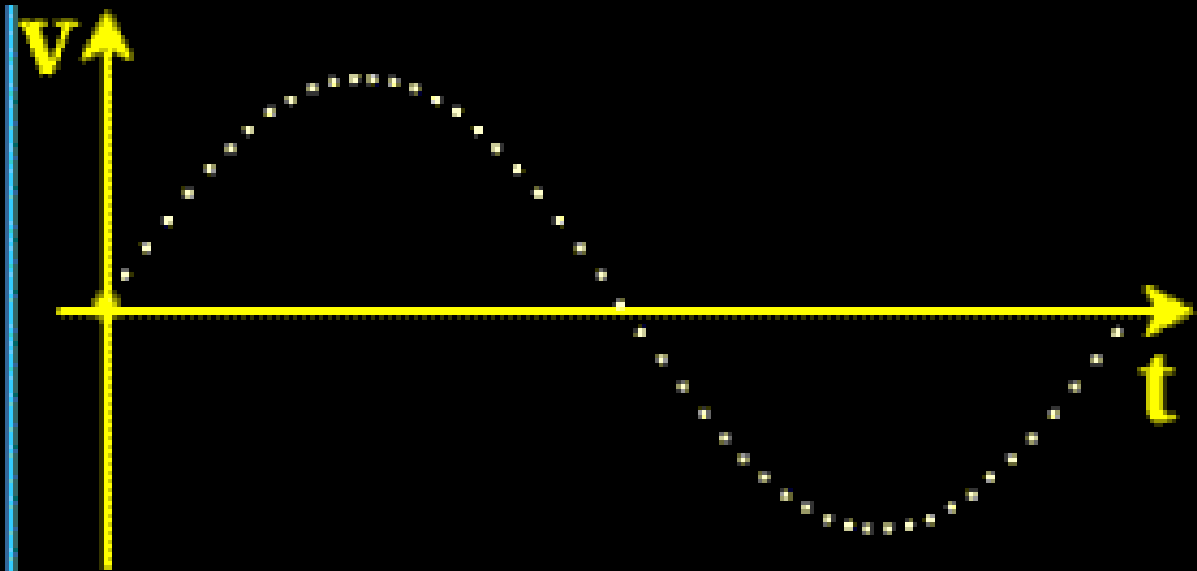
Didier Queloz & Michel Mayor  
*Observatoire de Genève*









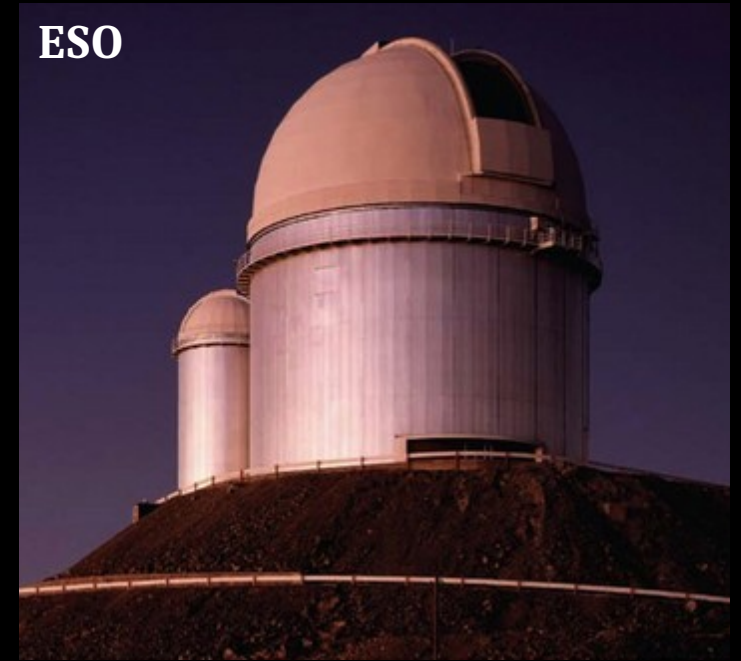




ESO



ESO



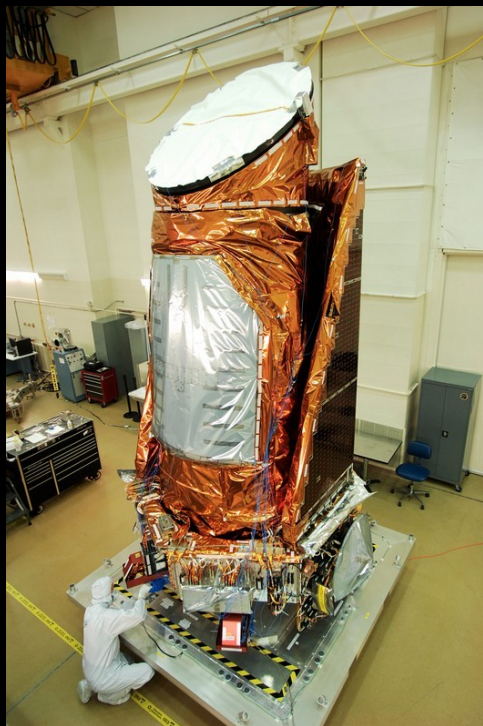
Observatoire de La Silla  
Observatoire Européen du Sud (ESO)

Télescope de 3.6 m



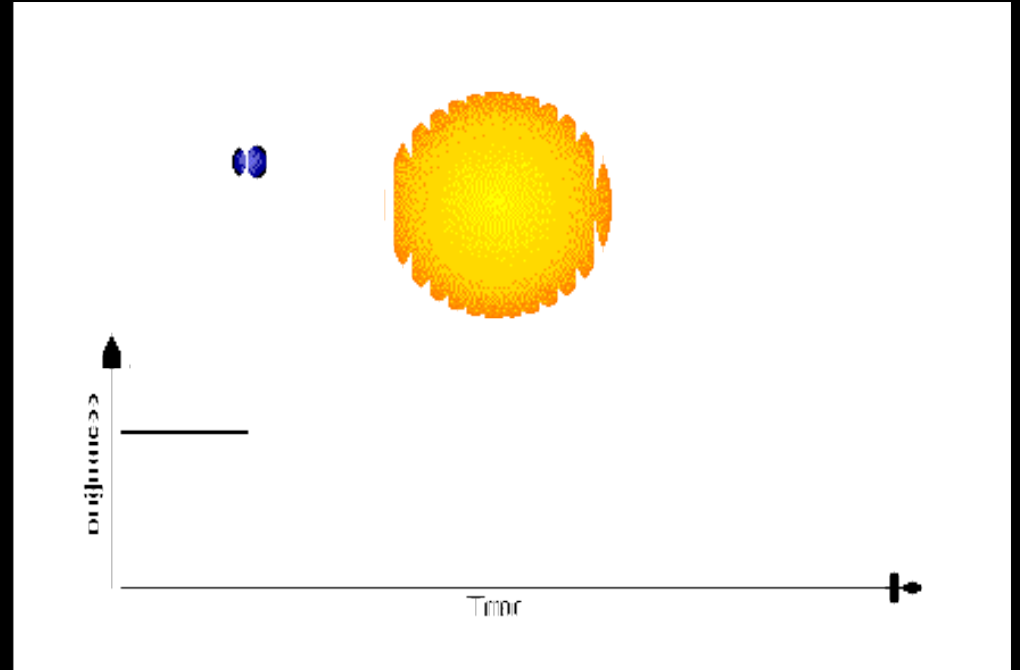


Satellite Corot (CNES)

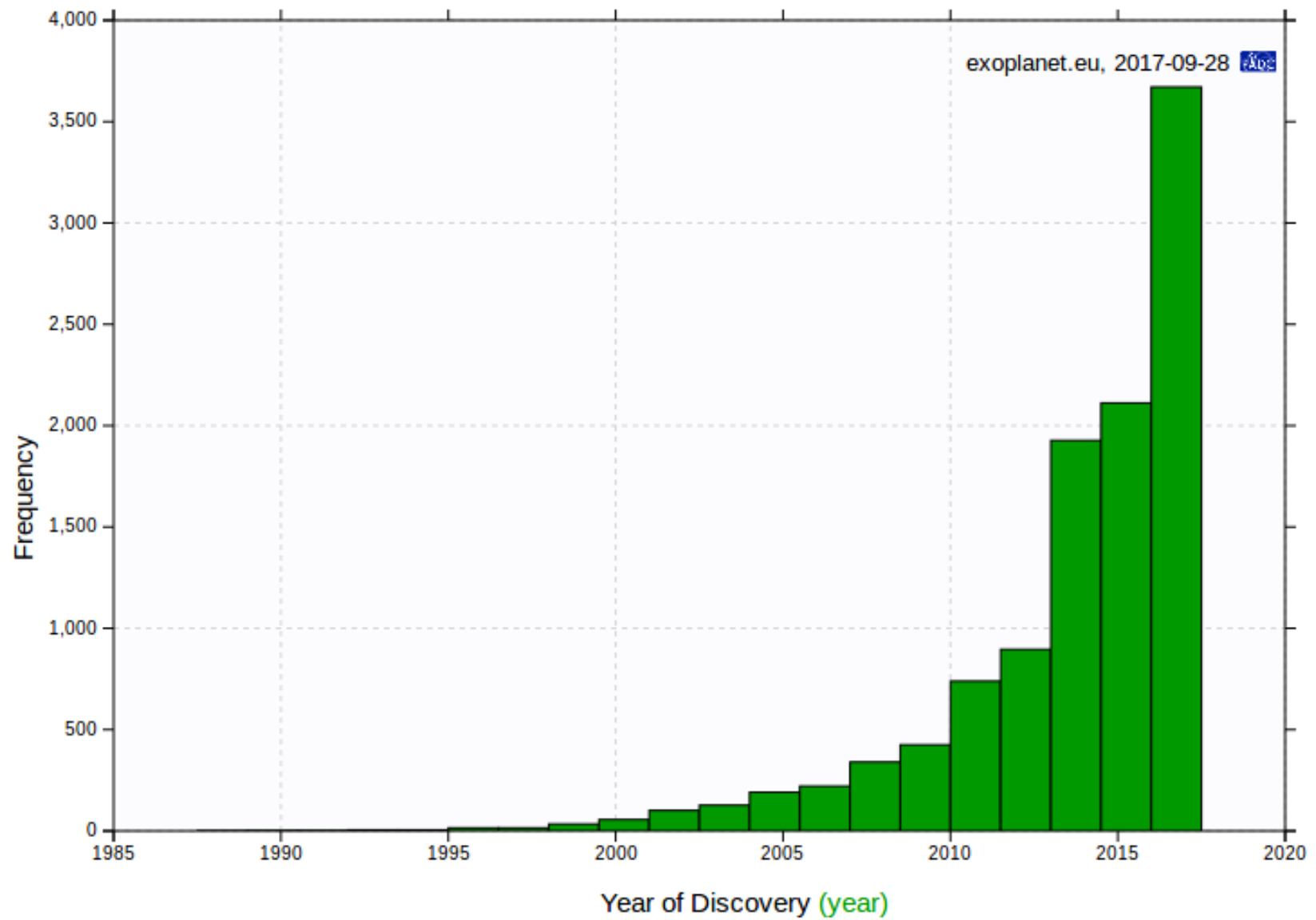


Satellite Kepler (NASA)

## Transit planétaire







Aujourd'hui, plusieurs milliers d'exoplanètes connues



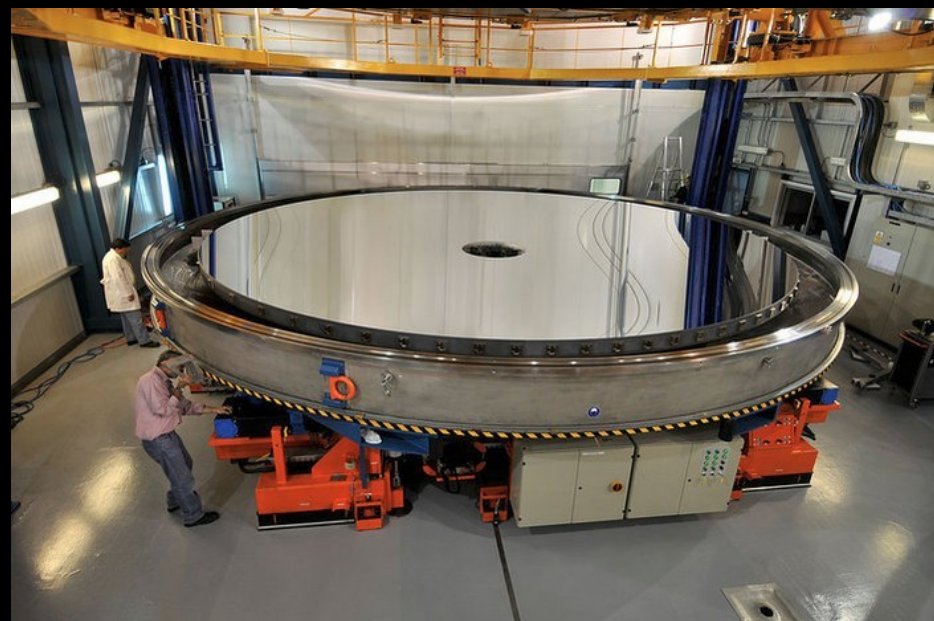
ESO

ESO – Observatoire de Paranal / Very Large Telescope (VLT)



ESO









ESO



Observation en direction du centre de notre Galaxie (la Voie Lactée)

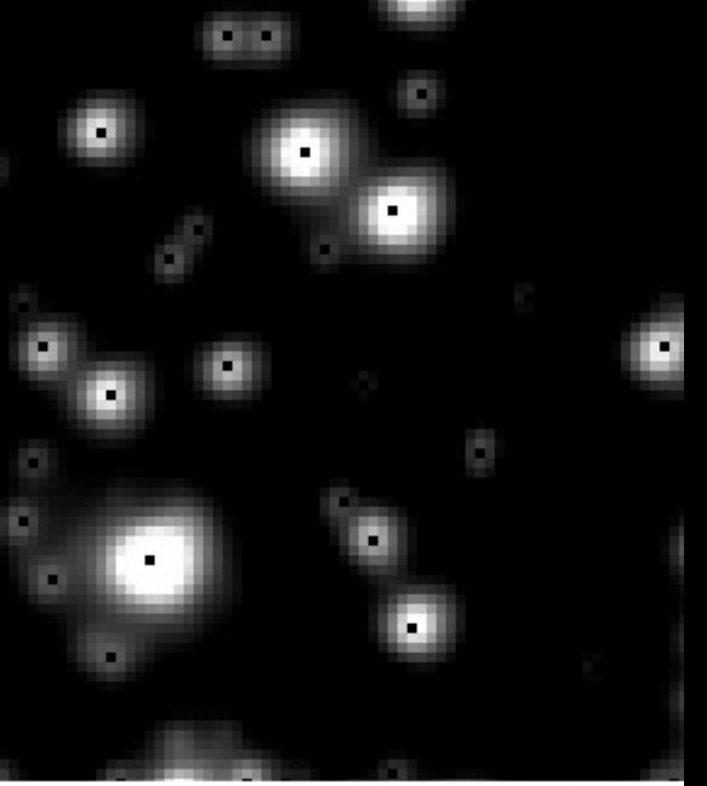
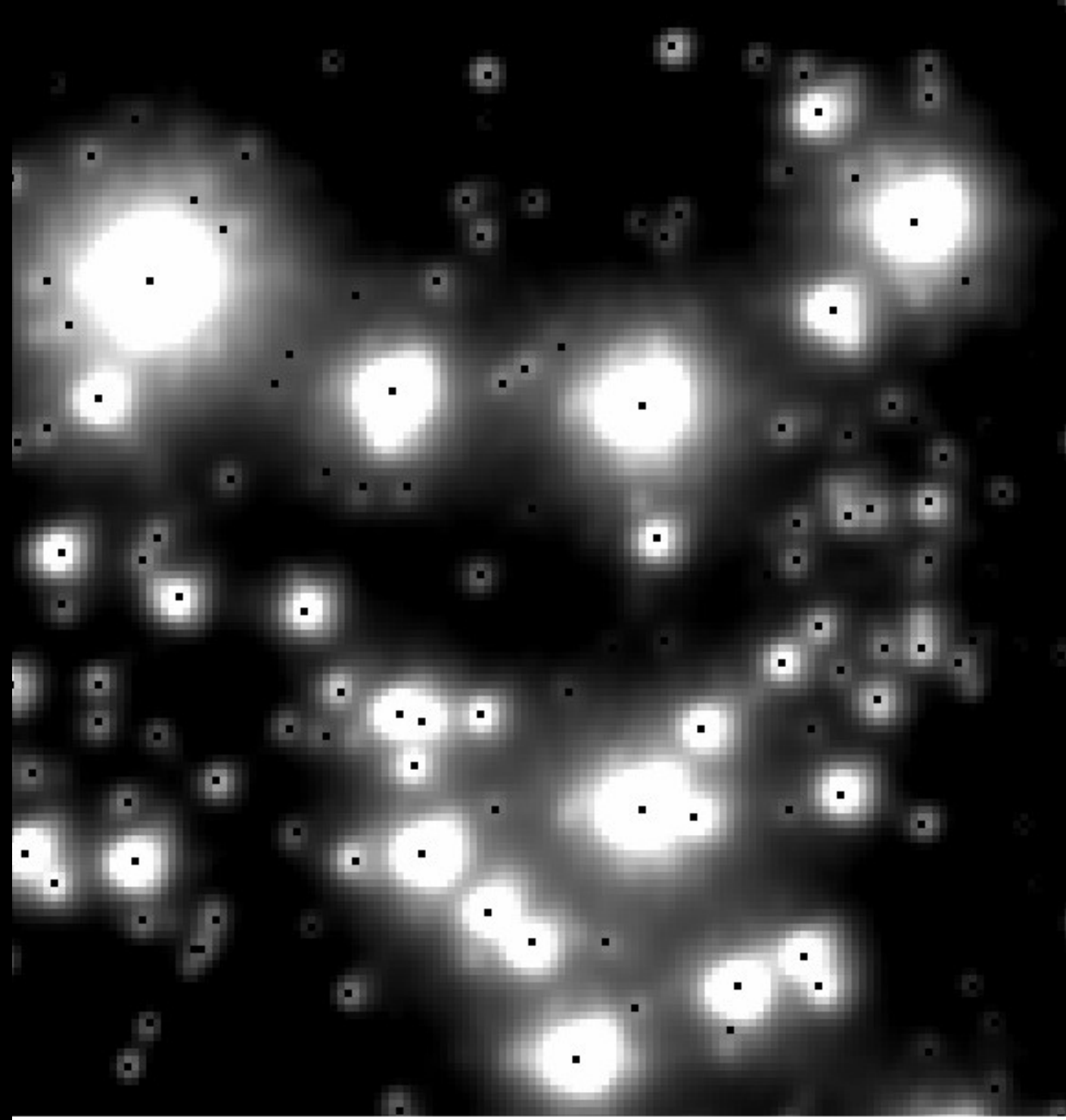




1 année lumière



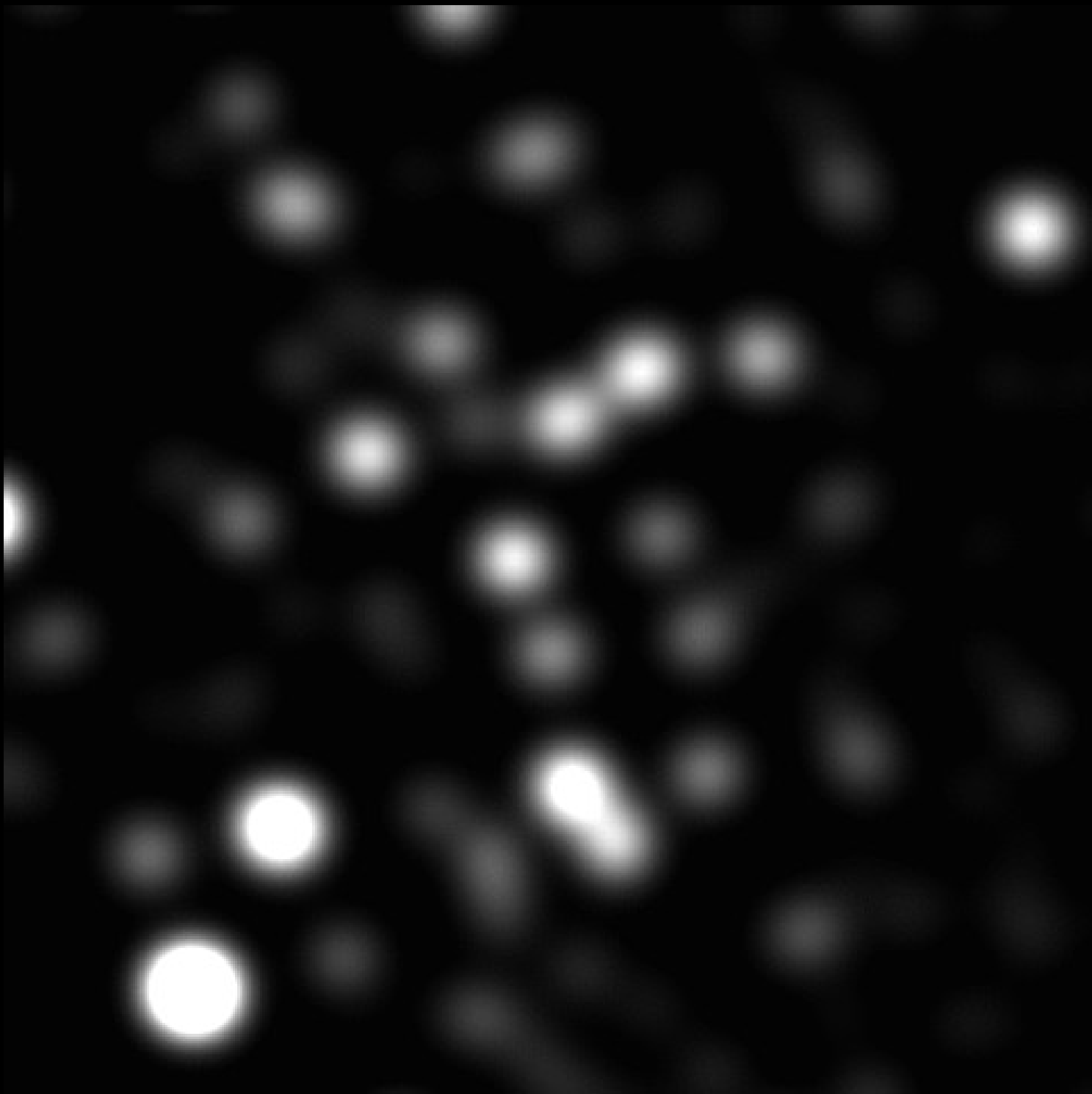
Le coeur de notre Galaxie vu en lumière infrarouge



100 200 300



0,1 année lumière



0,1 année lumière



Les étoiles  
bougent au  
cours du temps.  
La plus  
brillante, au  
centre, fait un  
tour en ~16 ans



Un trou noir de 4 millions de fois la masse du Soleil se trouve au centre de notre Galaxie  
(quasiment toutes les galaxies en contiennent un)  
On parle de trou noir supermassif (pour les différencier des trous noirs résultant de l'explosion  
d'étoiles, qui ont une masse de quelques fois la masse du Soleil)





# CFHT (Canada France Hawaii Telescope)



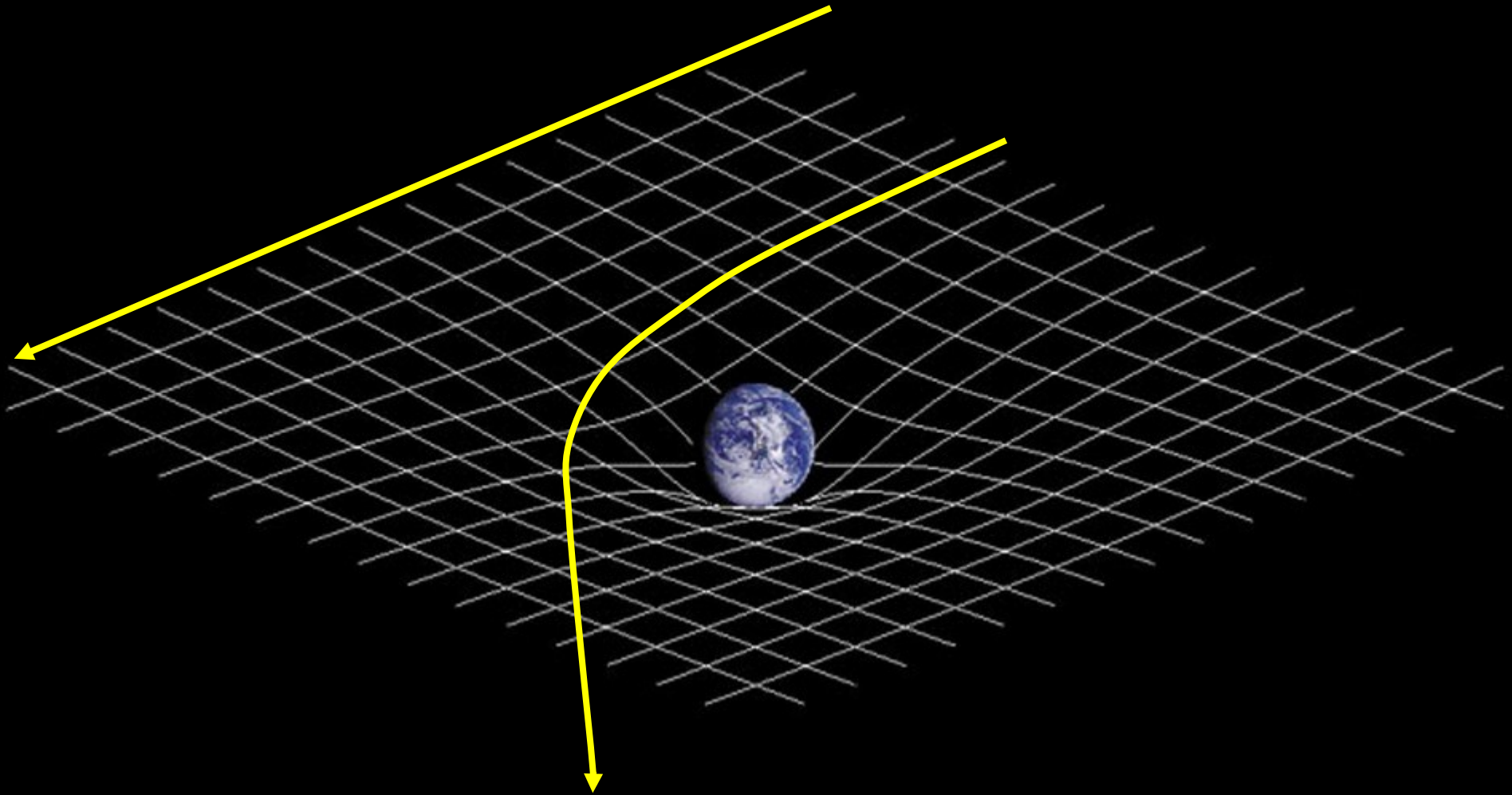


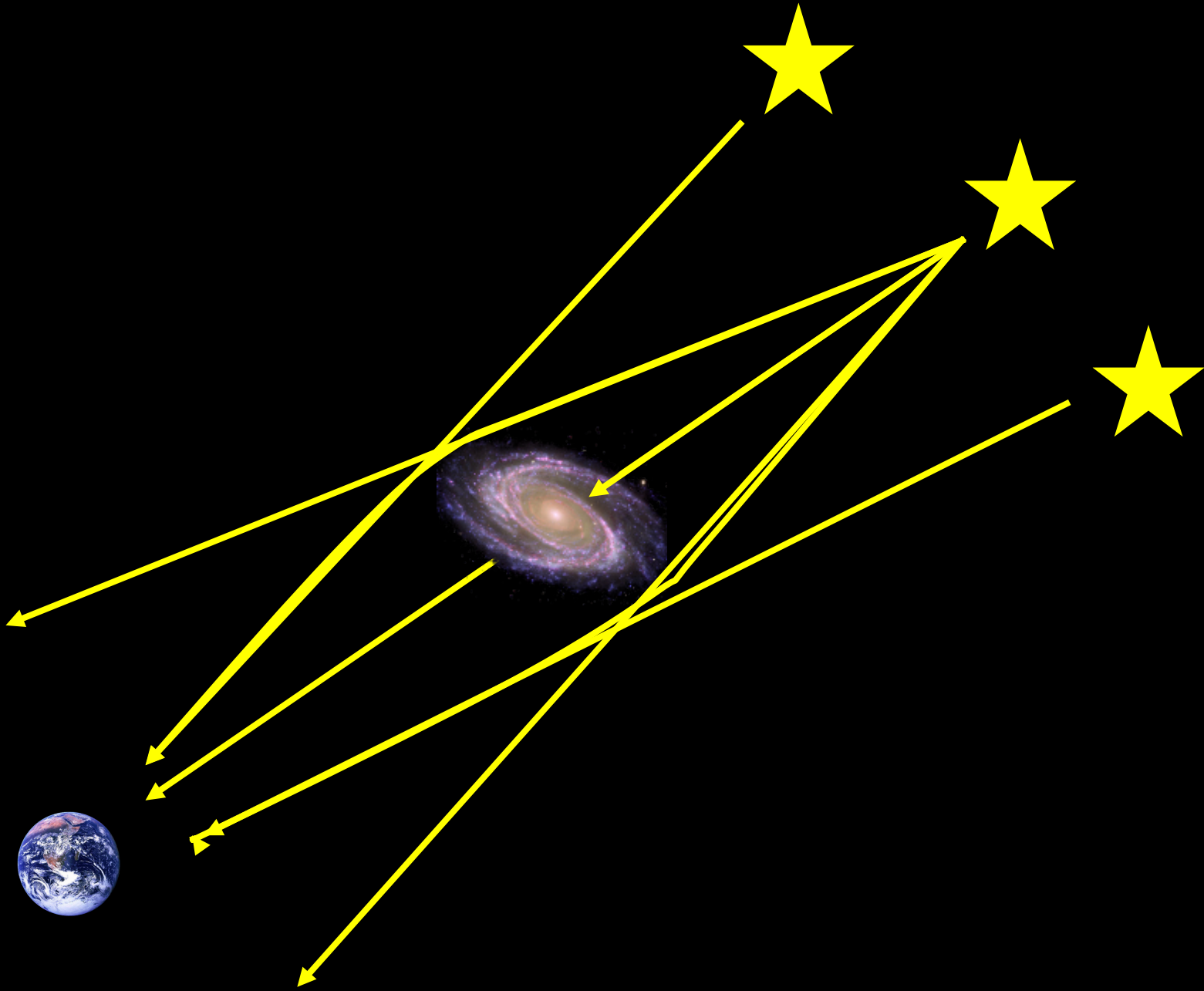




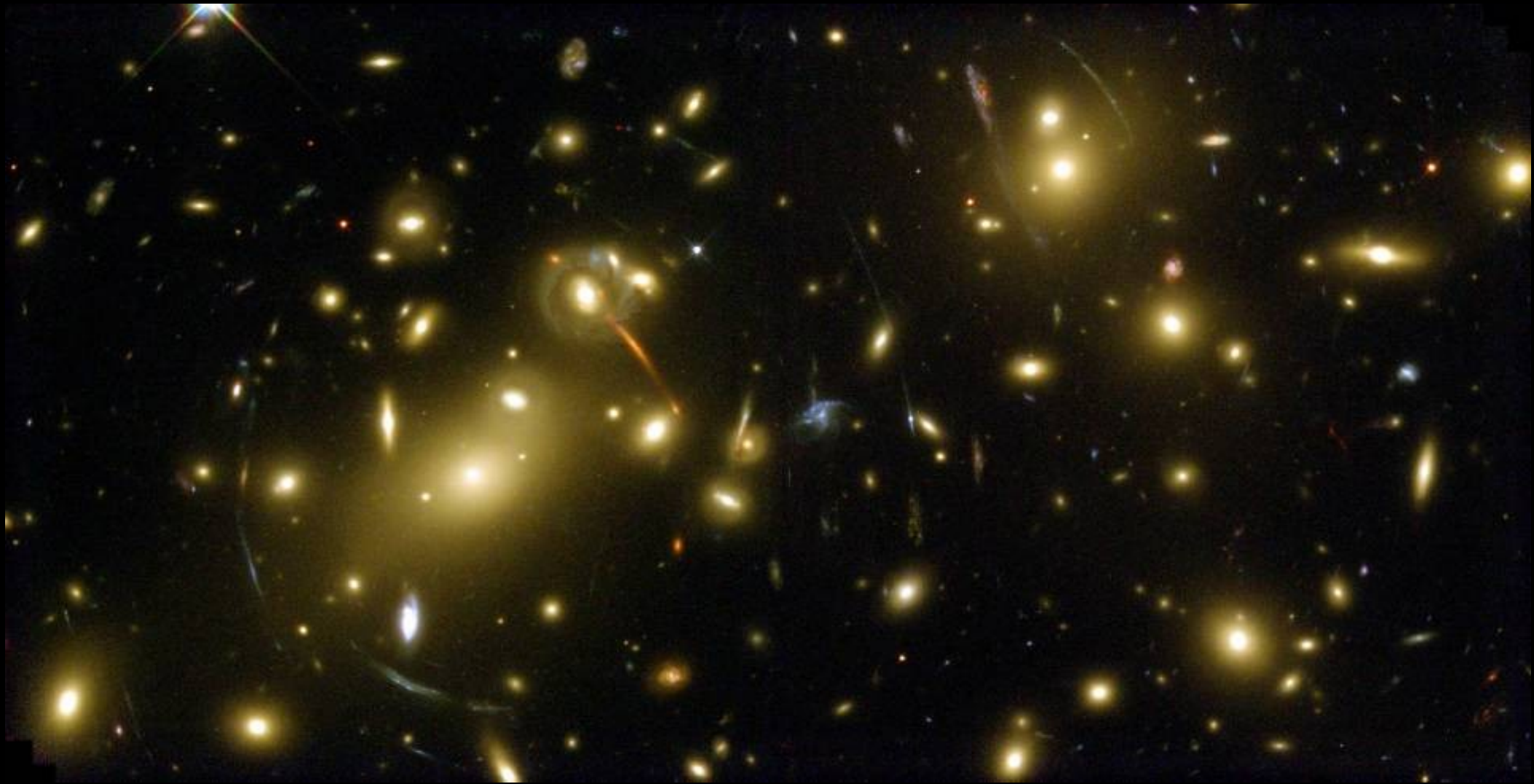
La présence de matière déforme l'espace-temps.

La lumière a une trajectoire courbe si elle passe près d'une masse importante.

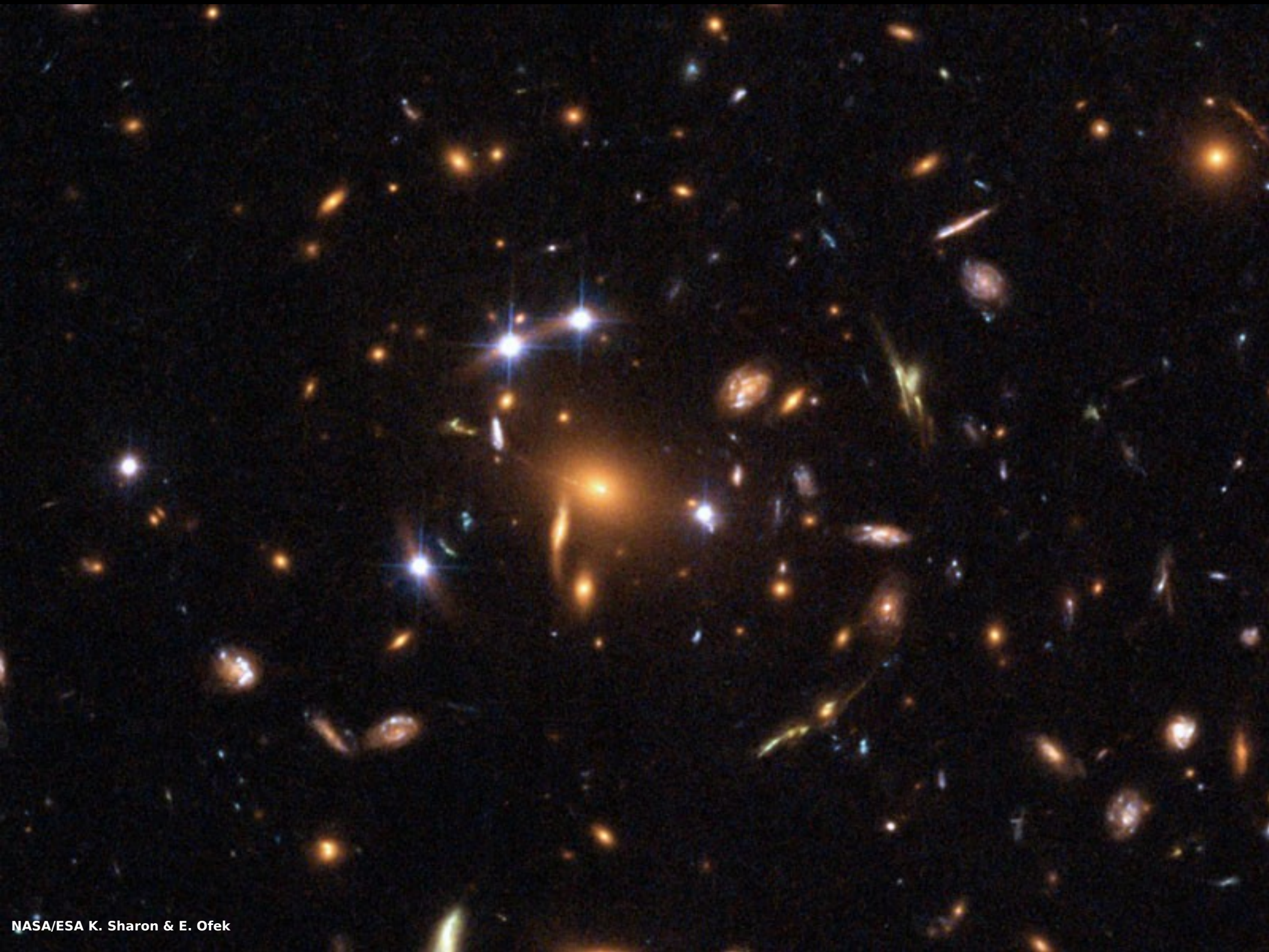




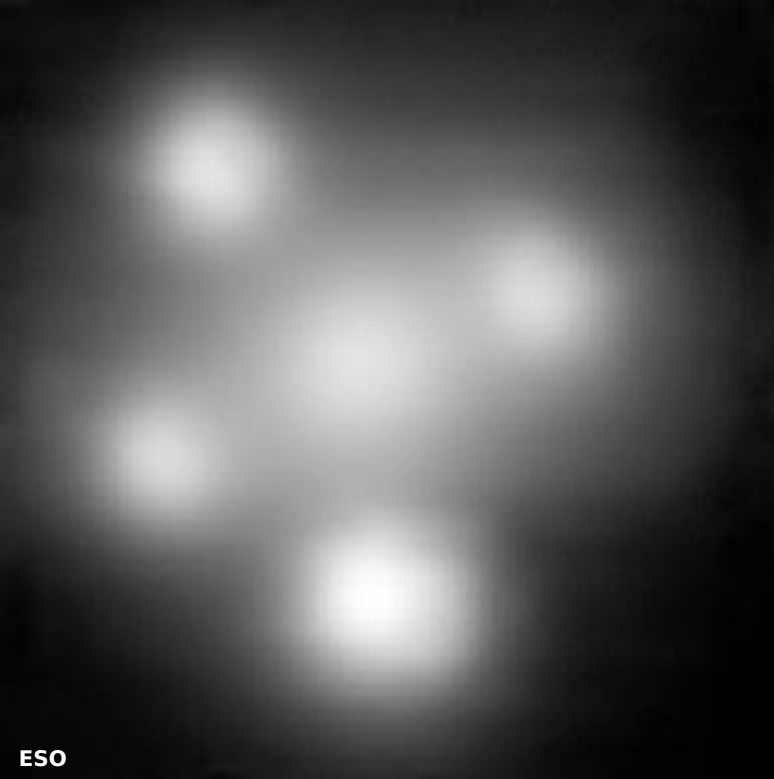












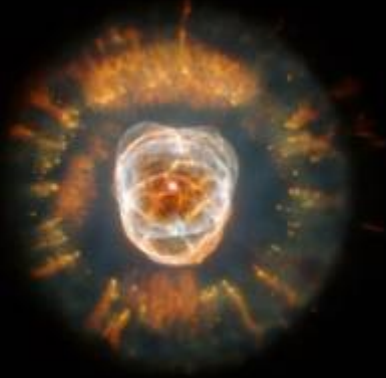
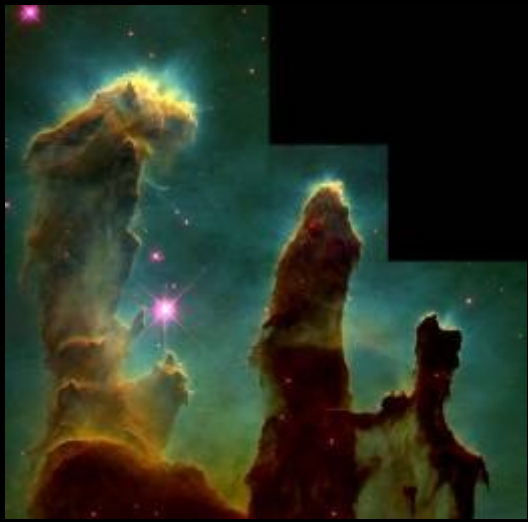
ESO



# Le télescope spatial Hubble







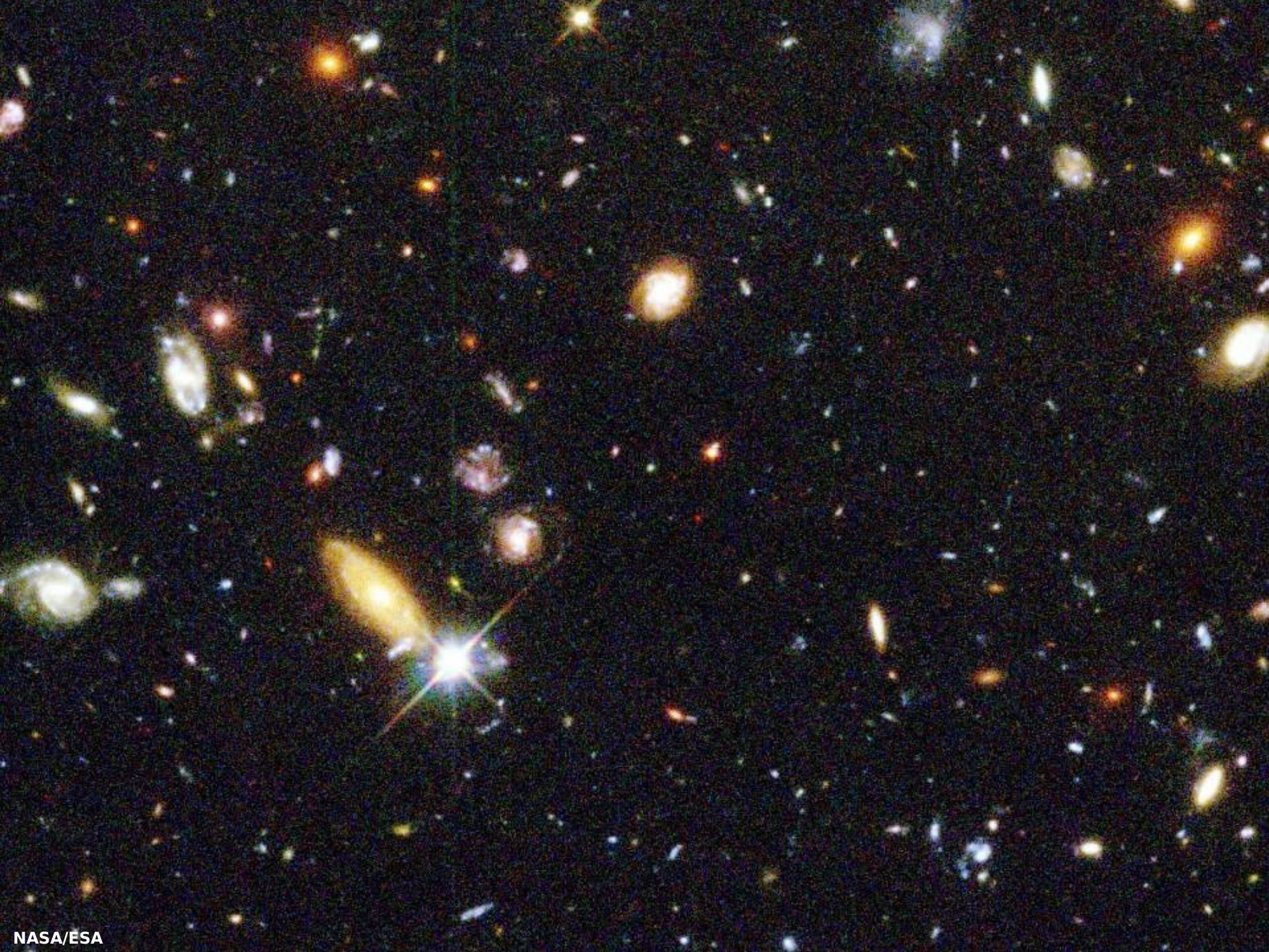
















3 Avril



15 Juin



22 Octobre







HUBBLE ULTRA DEEP FIELD

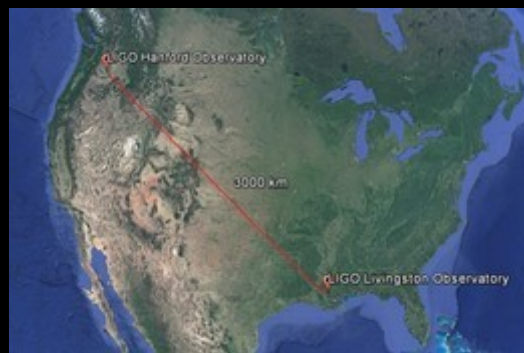
HUBBLE



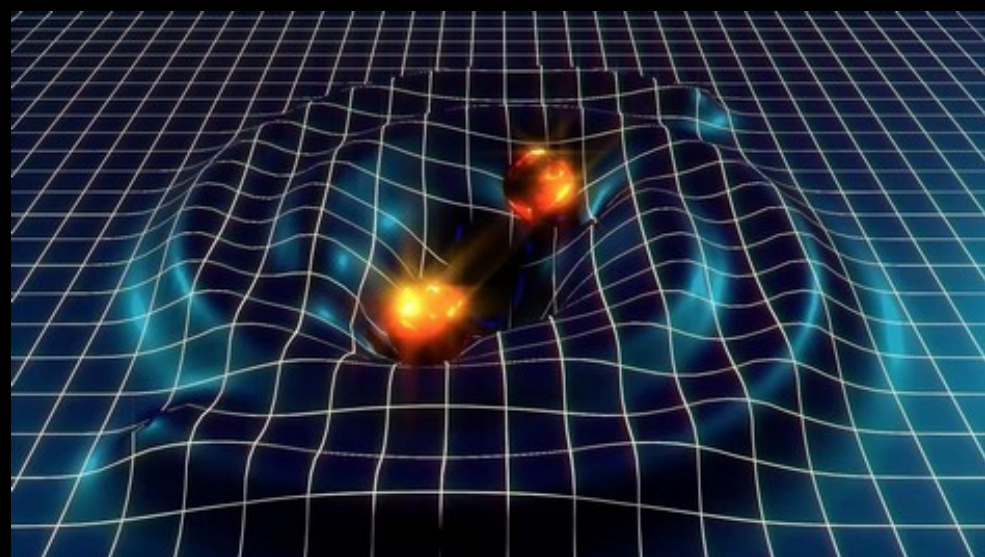
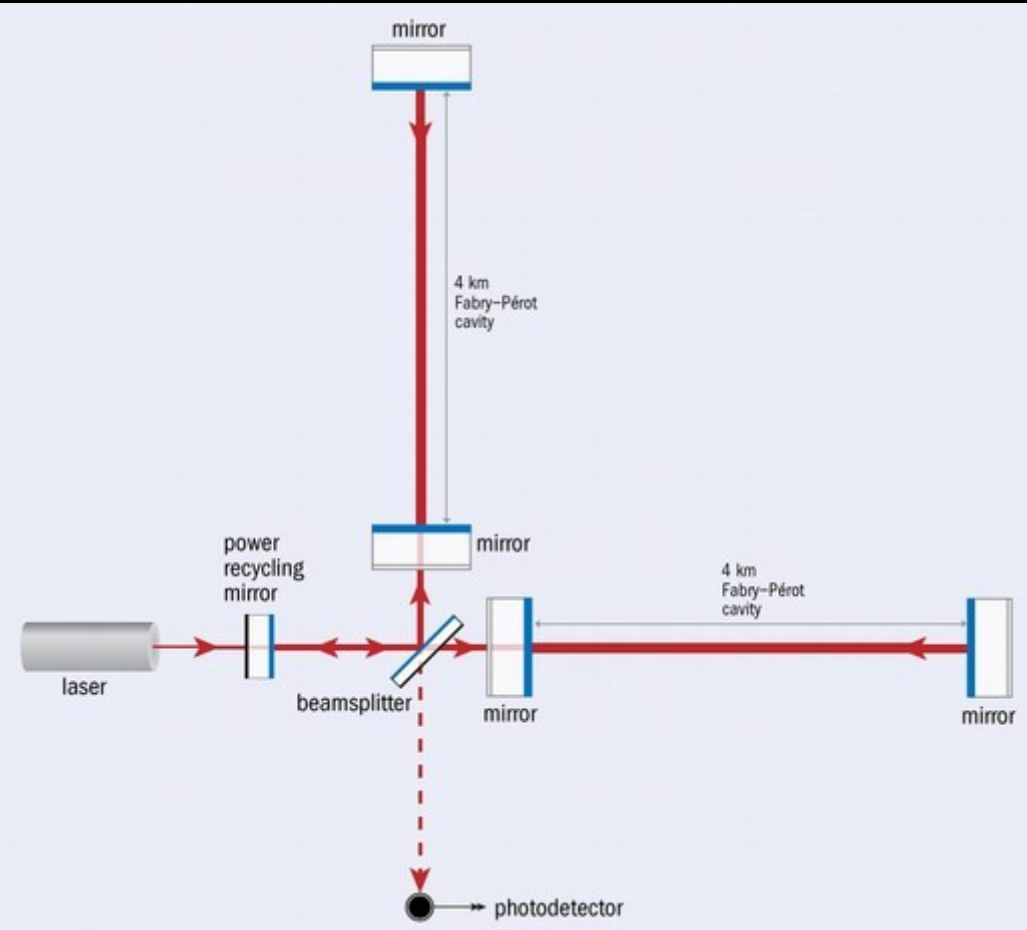
© 2003 NASA, ESA, and STScI. All rights reserved. www.spacetelescope.org



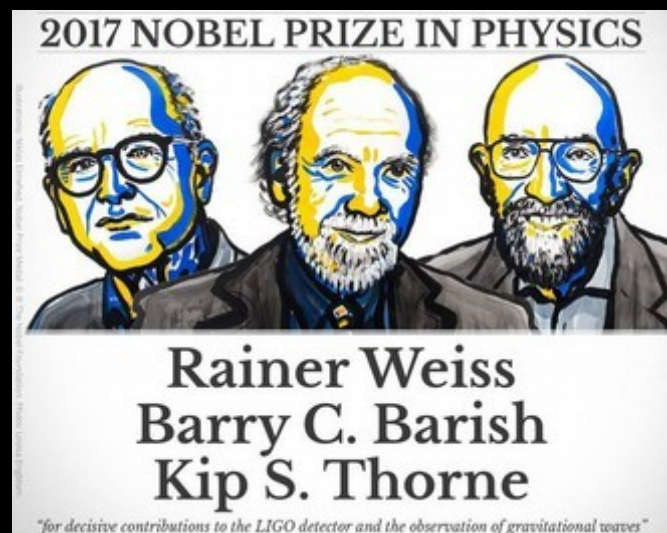
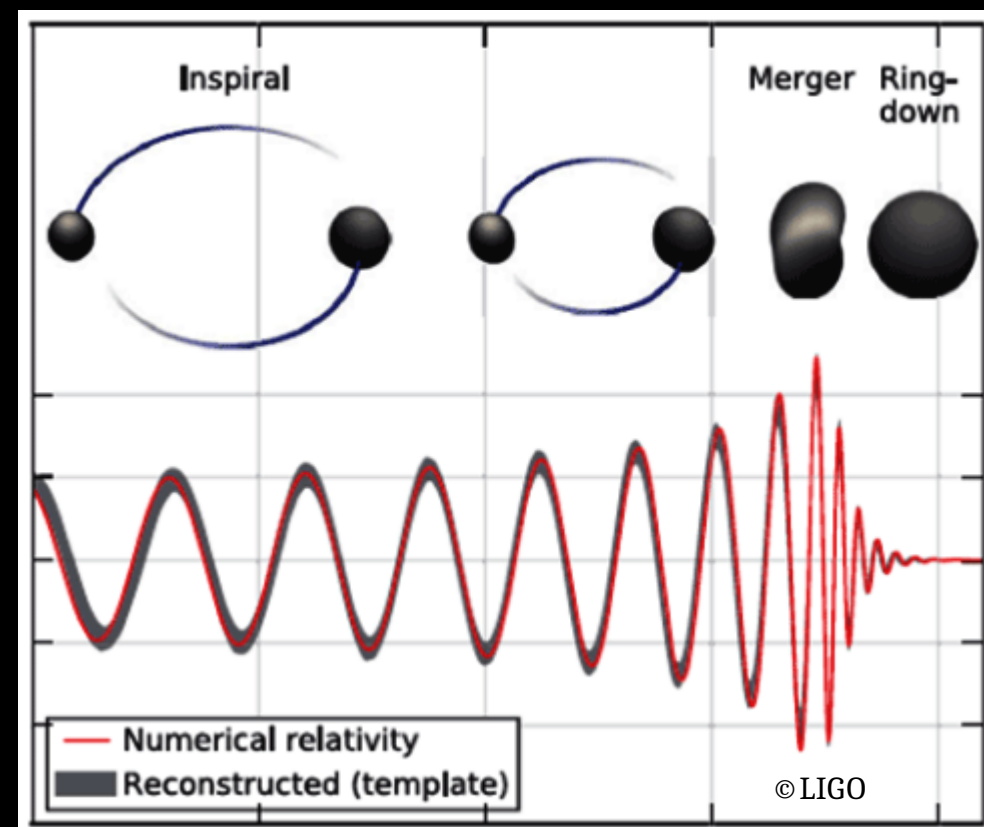
# L'interféromètre LIGO





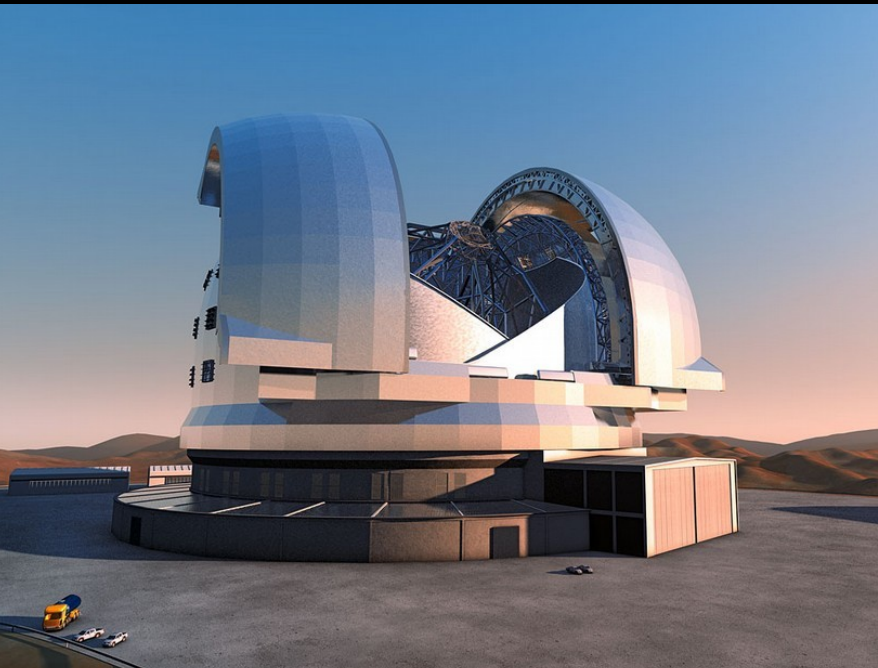


© world science festival

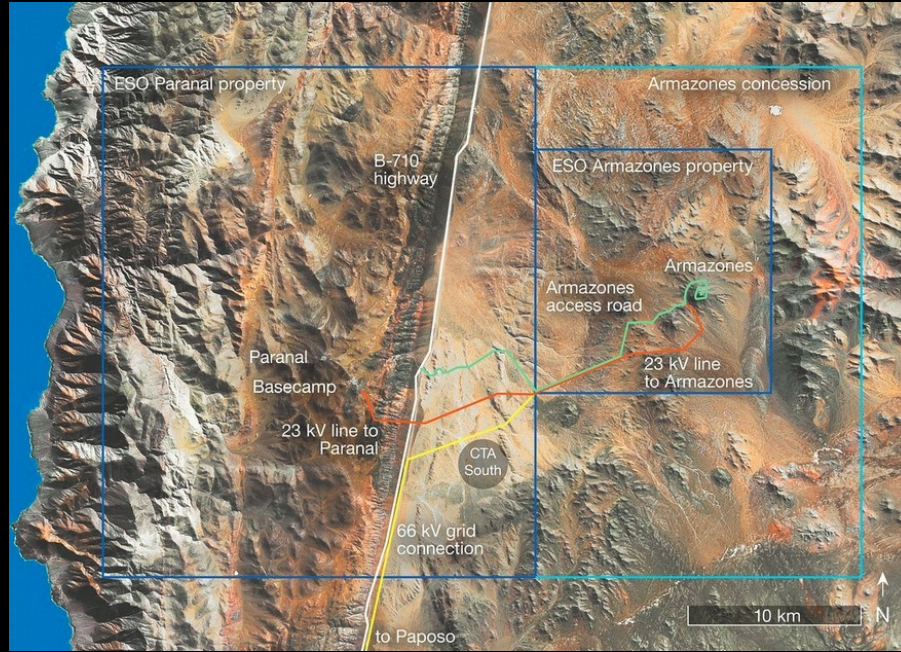




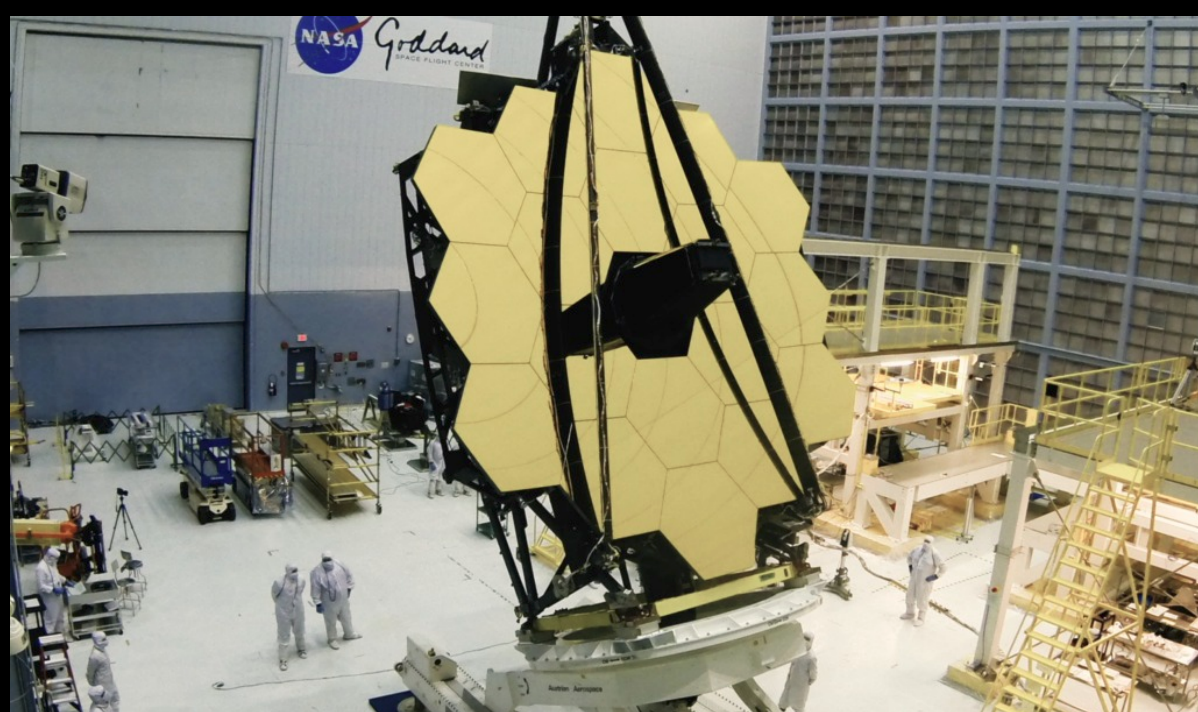
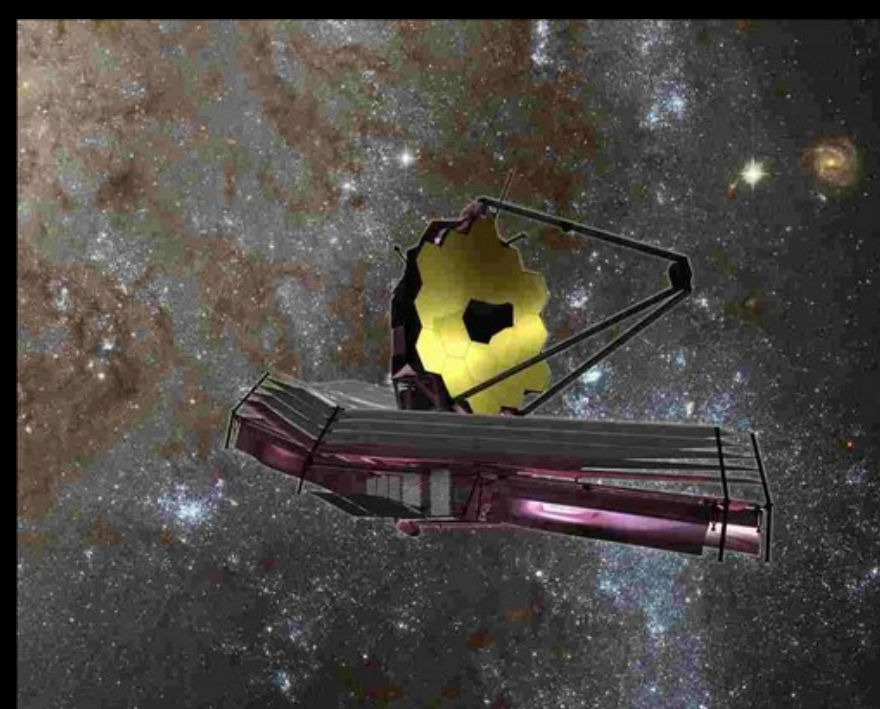
# E-ELT: European Extremely Large Telescope



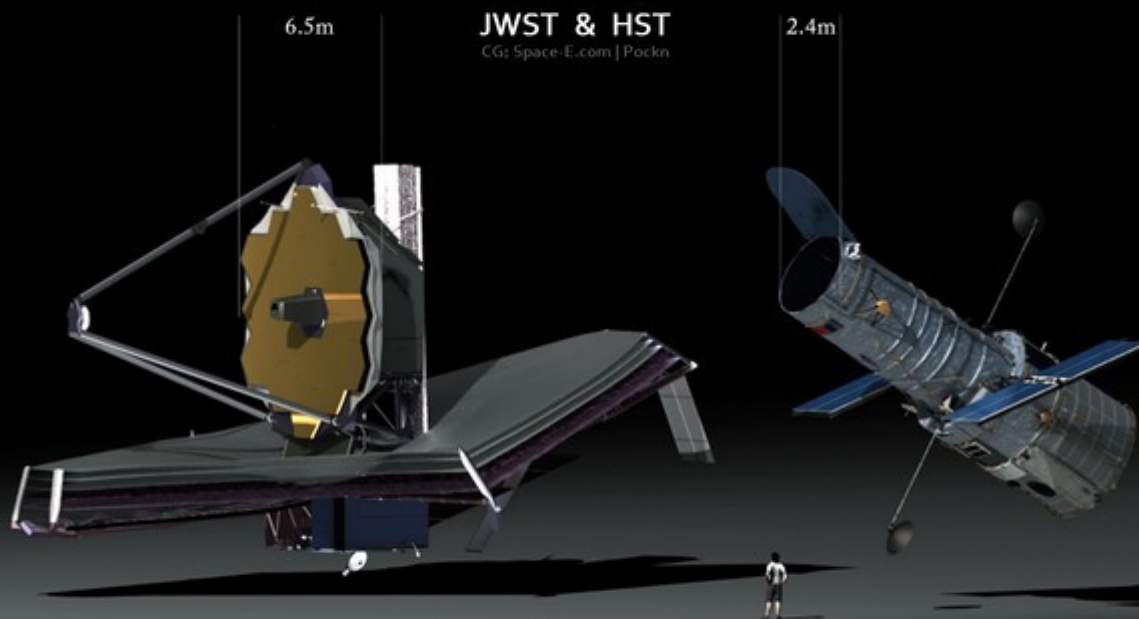
© ESO







© NASA/ESA/GSFL



James Webb  
Space Telescope (JWST)



