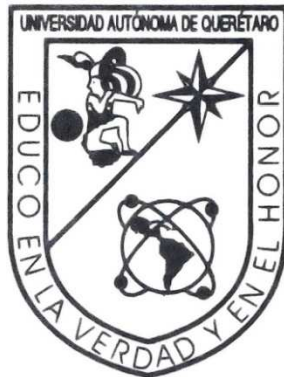


¿Cómo funcionan los Telescopios?

Comunidad de Astronomía para servirle a usted...

Alfredo J. Santillán
(DGTIC, UNAM)



cudi
Corporación Universitaria para el Desarrollo de Internet A.C.
Internet 2 - México

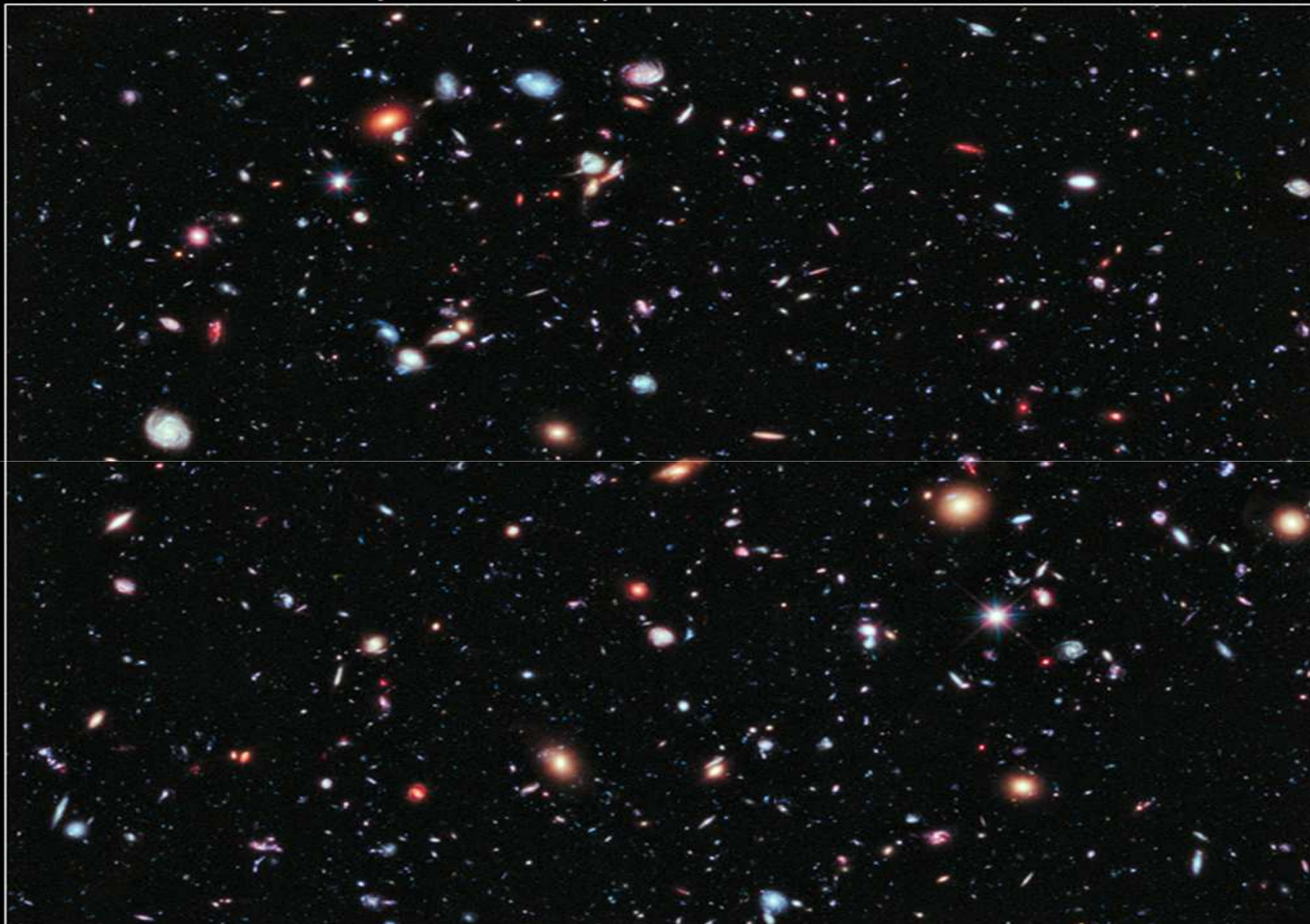


¡Cáncer de mama!



Hubble eXtreme Deep Field (XDF)

HST • ACS/WFC • WFC3/IR



Technology Transfer

Hubble Fights Breast Cancer

A unique marriage between Hubble Space Telescope astronomers and cancer researchers has produced an image-processing technique that shows promise in detecting early breast cancer. Employing techniques used to correct the blurry images sent by Hubble prior to the 1993 servicing mission, this method is designed to detect microcalcifications, an early sign of breast cancer. A group of astronomical and medical researchers from the Space Telescope Science Institute (STScI) in Baltimore, Johns Hopkins University, and the Lombardi Cancer Research Center at the Georgetown University Medical Center in Washington, D.C., is testing this technique to detect microcalcifications in digitized mammograms.

¿Cuántos Astrónomos hay en
México?

~200 en todo el país.

(Por cada 530,000 habitantes hay 1 astrónomo)

¡No obstante, son
depredadores de tecnología!

Mmm... pero ¿dónde están...?

- Universidad Nacional Autónoma de México (IA y CRyA; Baja California, DF y Morelia)
- Universidad de Guadalajara
- Universidad de Sonora
- Universidad de Monterrey
- Universidad de Guanajuato
- Universidad Iberoamericana
- Instituto Nacional de Astrofísica, Óptica y Electrónica, Puebla.

HAWC

Hawc gamma-ray telescope captures its first image

A new set of "eyes" to capture the Universe's highest-energy particles and light has snapped its first image. (BBC News)



¿Qué onda con las Redes de Alto
Desempeño?

What Happens in an Internet Minute?



And Future Growth is Staggering





560,640 processors, including 261,632 NVIDIA

TIC



Google™ Maps



Bat Detective is a Zooniverse project.



HOME

ABOUT

CLASSIFY

Bat
DETECTIVE

PROFILE

TALK

BLOG

POWERED BY
CARTODB

You're hot on the trail of bats! Get searching.



GIVE TIME, CURE CANCERS.

There are cures for cancers buried in our data. Help us find them. Come be part of our citizen science story.

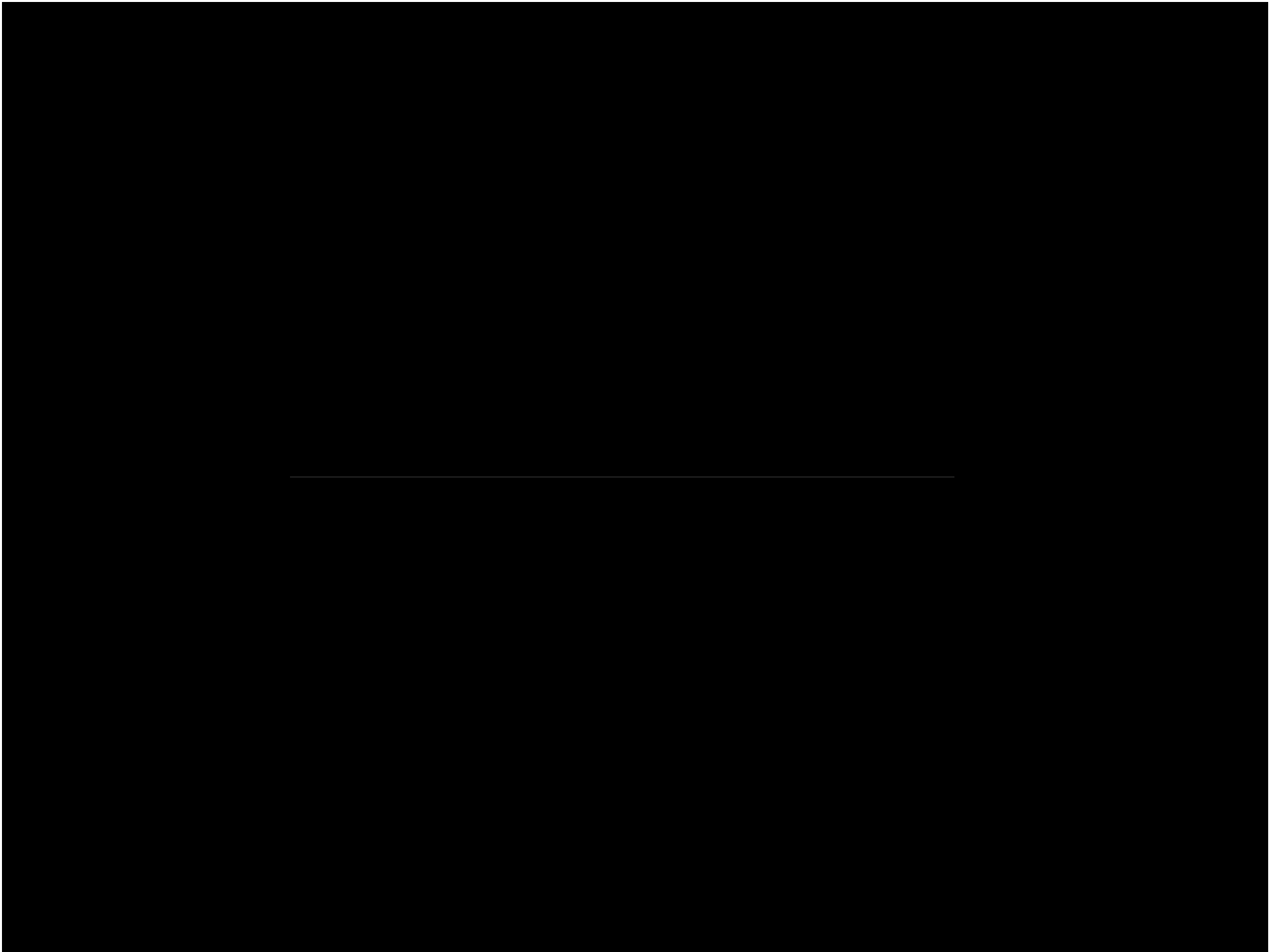
FEATURED PROJECT

Cell Slider

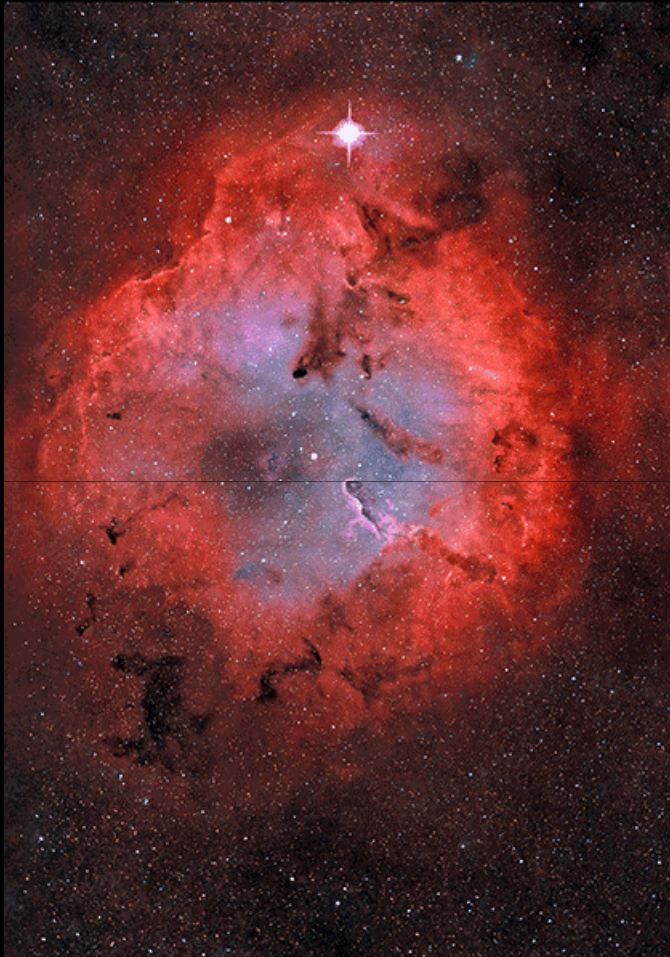
Each image you will see is a tiny tumour sample from a huge dataset. Help our scientists to accelerate the analysis of this data by identifying the coloured sections of the image using our prompts, and bring forward the cures for cancers.

[Join the fight](#)









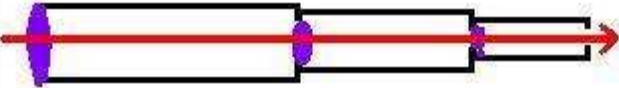



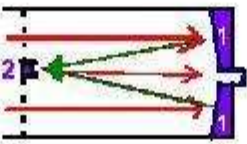
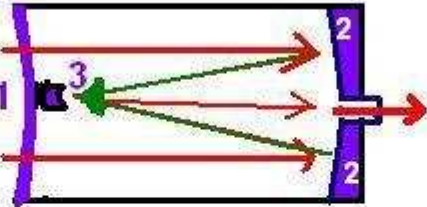

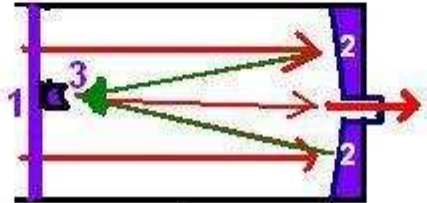

Región de formación estelar IC 1396

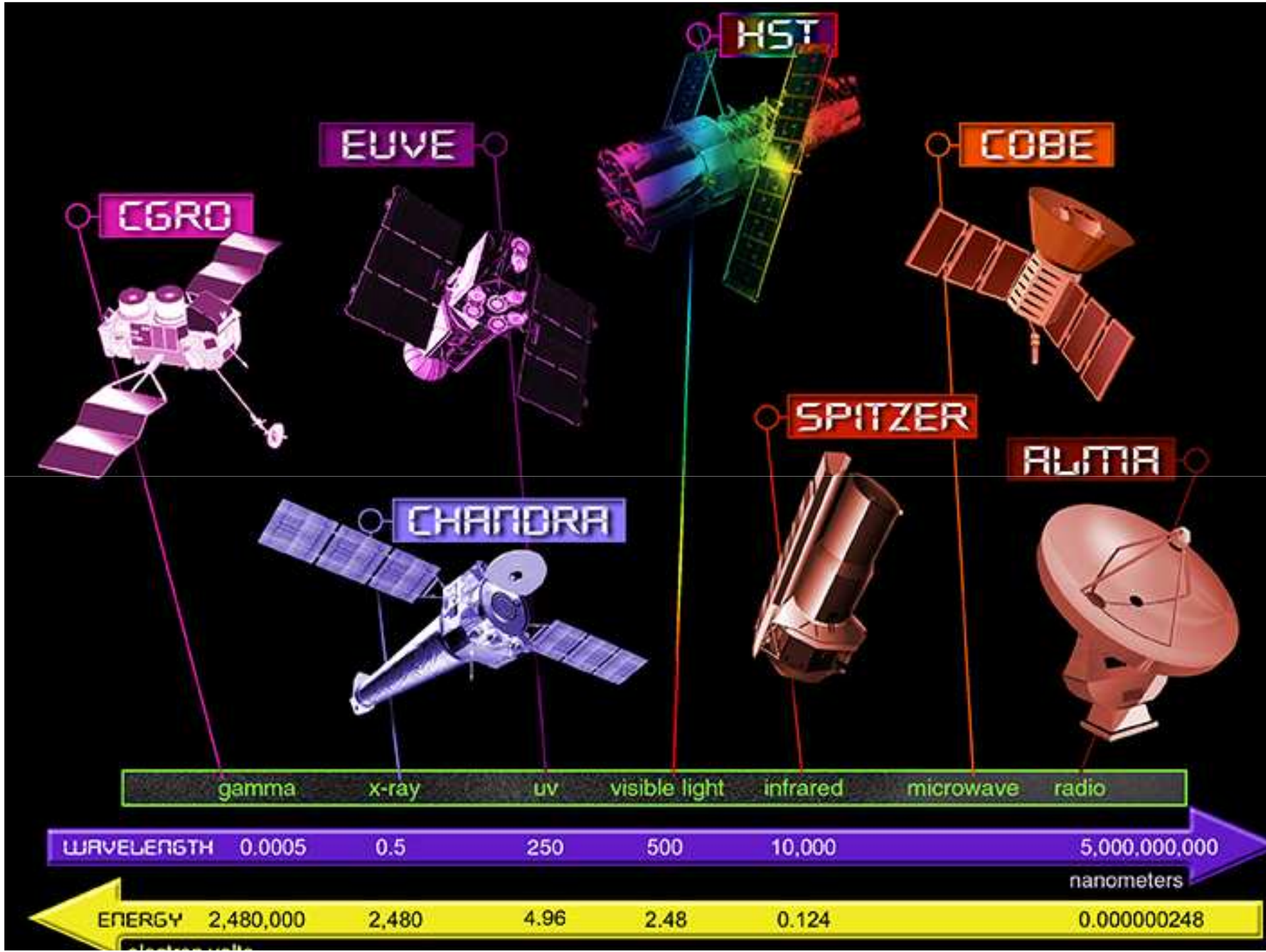


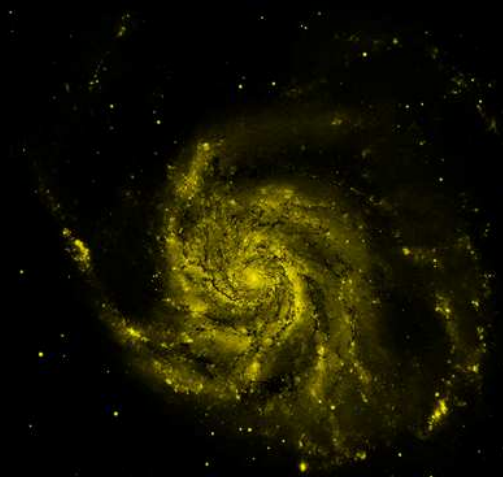
Nebulosa de emisión IC 410

¡ÓPTICA Y TELESCOPIOS MODERNOS!

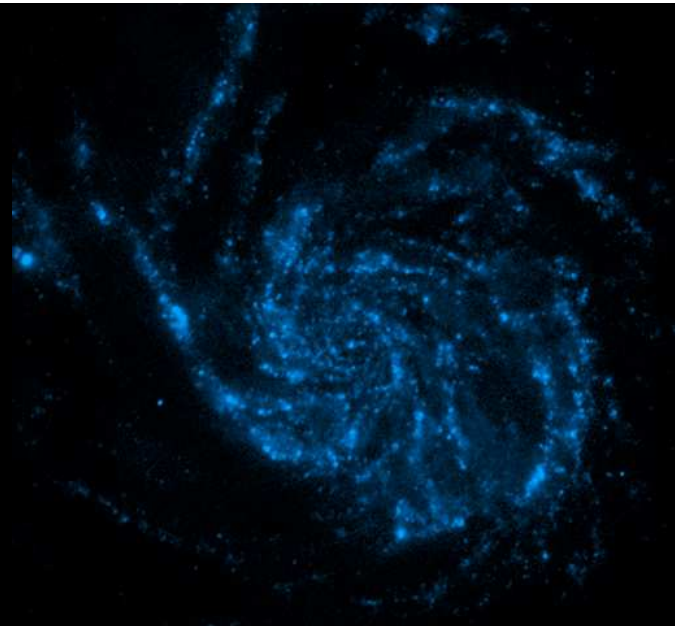
Óptica y Telescopios

Tipo	Esquema de lentes y espejos		Imagen
Refractores			
Reflectores	Newton		
	Cassegrain		<p>Su imagen es similar a los Schmidt-Cassegrain</p>
Catadióptricos (Mixtos)	Maksutov-Cassegrain		
	Schmidt-Cassegrain		





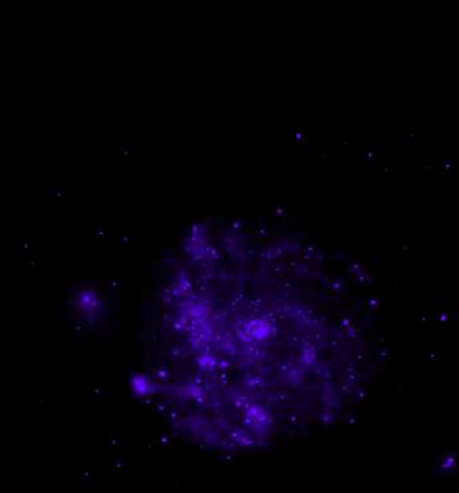
Visible



UV



Infrarojo



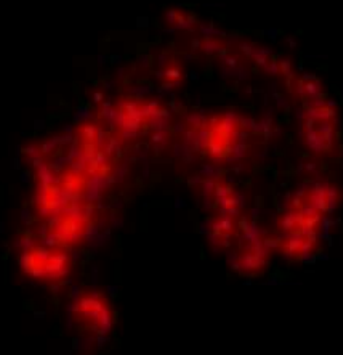
Rayos-X



M101: Galaxia del Reguilete



Óptico

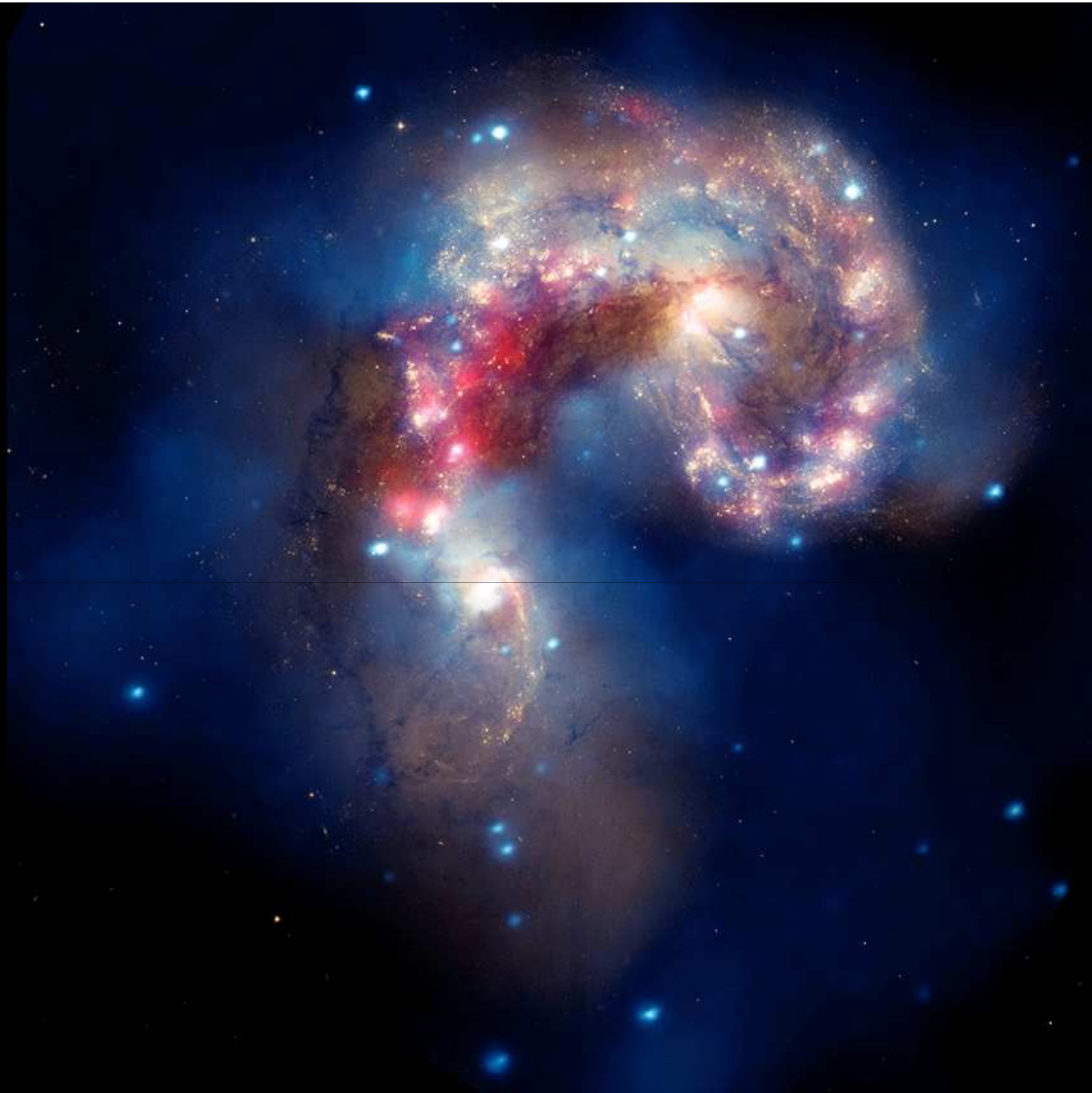


Infrarrojo



Rayos-X

La Antena





© SHAWN GIBSON

VISTA

(Visible and Infrared Survey Telescope for Astronomy)



Espejo primario de 4.1m

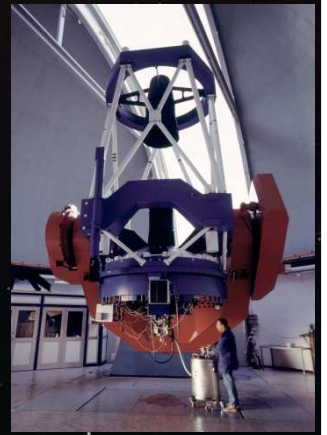
VISTA

(Visible and Infrared Survey Telescope for Astronomy)



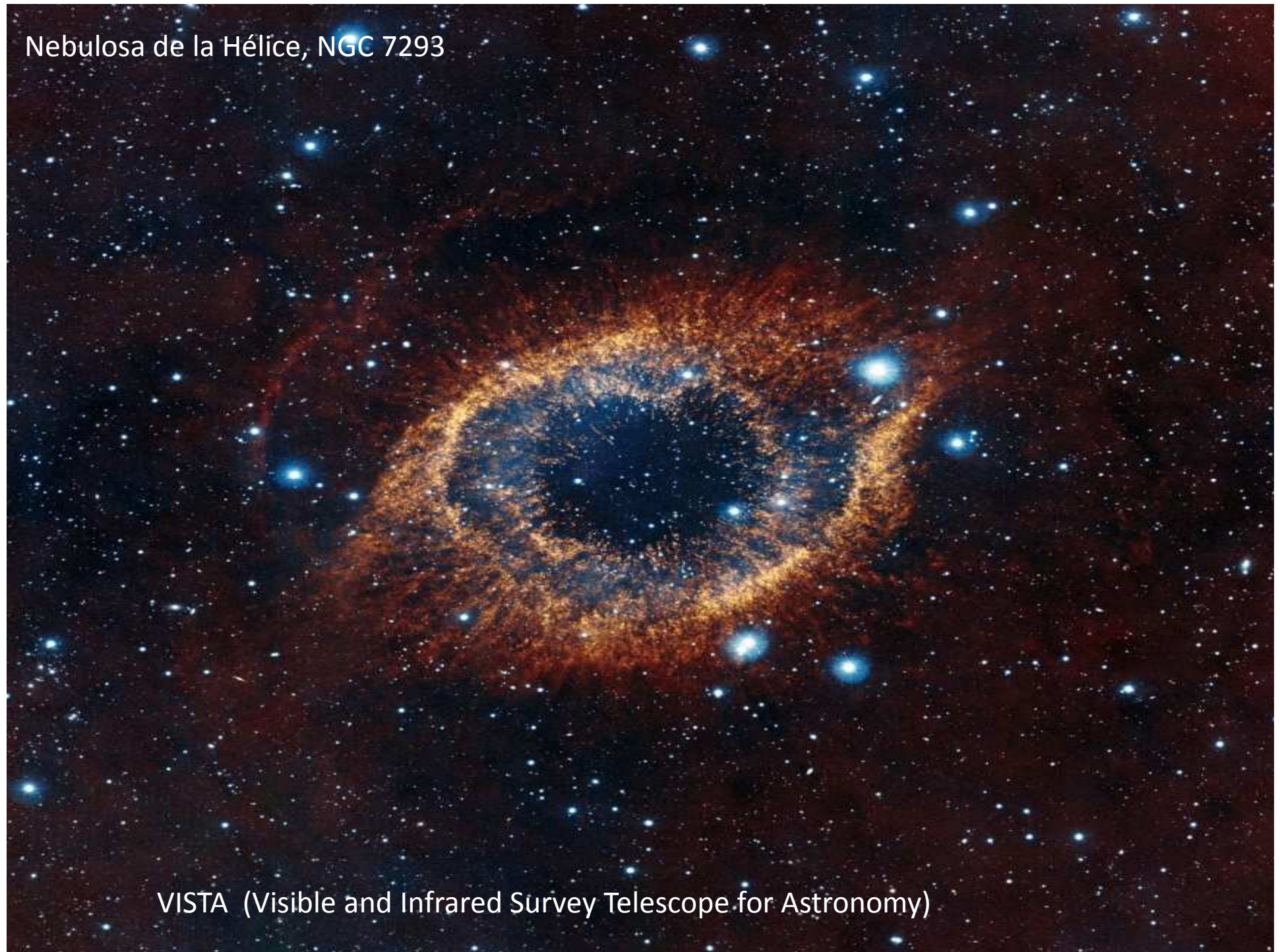
Espejo primario de 4.1m

Nebulosa de la Hélice, NGC 7293



Telescopio 2.2 m Max-Planck Society/ESO Observatorio de La Silla

Nebulosa de la Hélice, NGC 7293

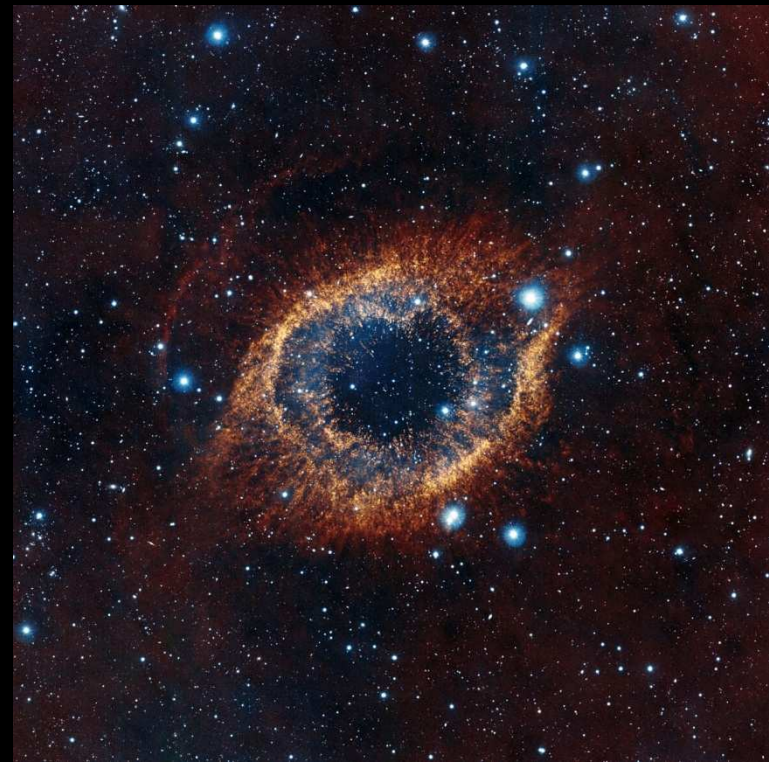


VISTA (Visible and Infrared Survey Telescope for Astronomy)

Nebulosa de la Hélice



Telescopio 2.2-m ESO



VISTA



Nebulosa de Orión



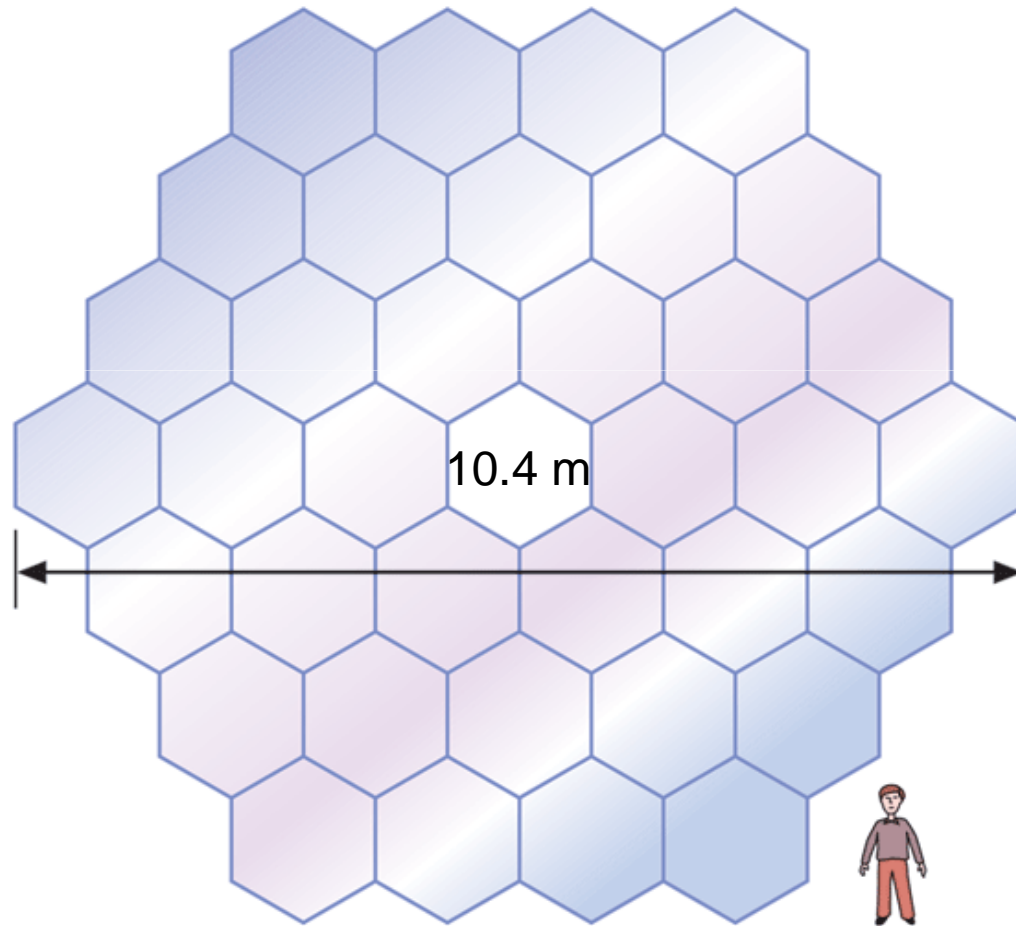
VISTA (Visible and Infrared Survey Telescope for Astronomy; 4.1m)

Gran Telescopio Canario



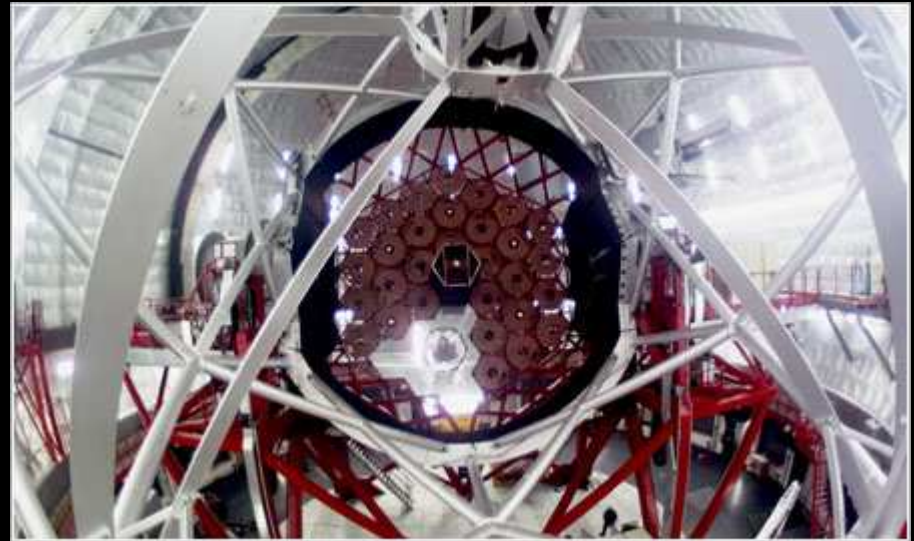


Gran Telescopio Canario



36 segmentos

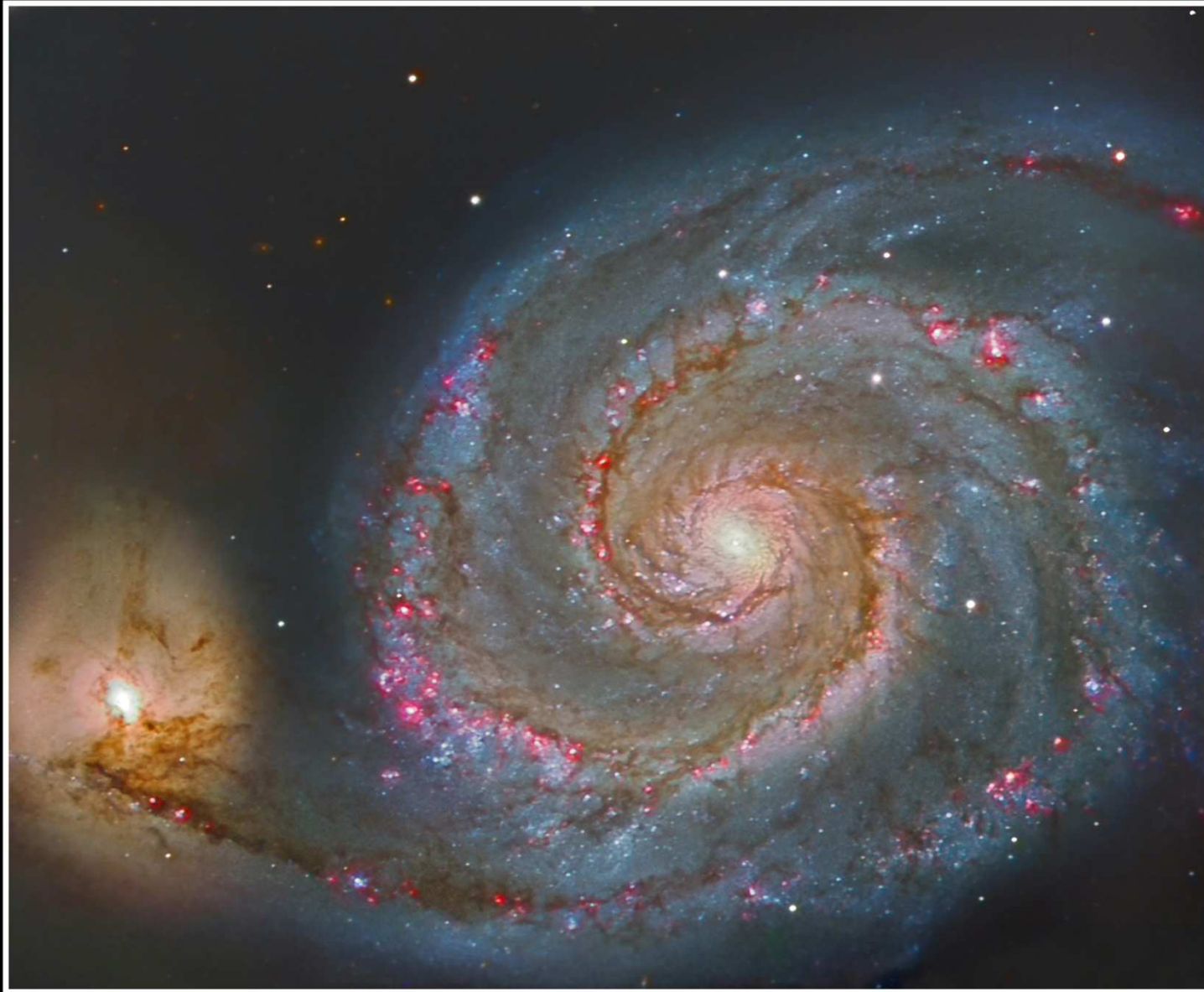
Gran Telescopio Canario





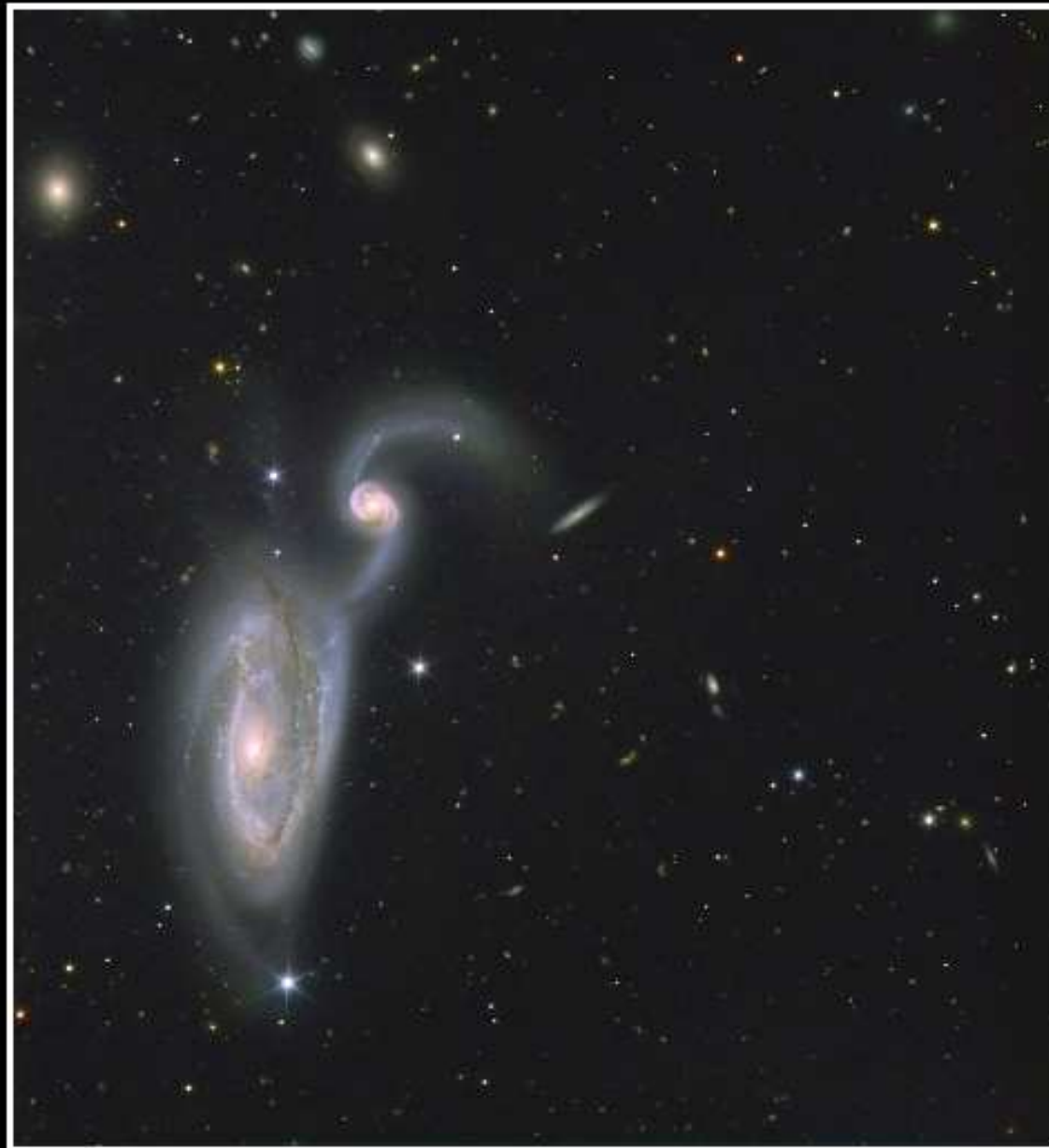
M1, The Crab Nebula
Gran Telescopio CANARIAS (GTC)





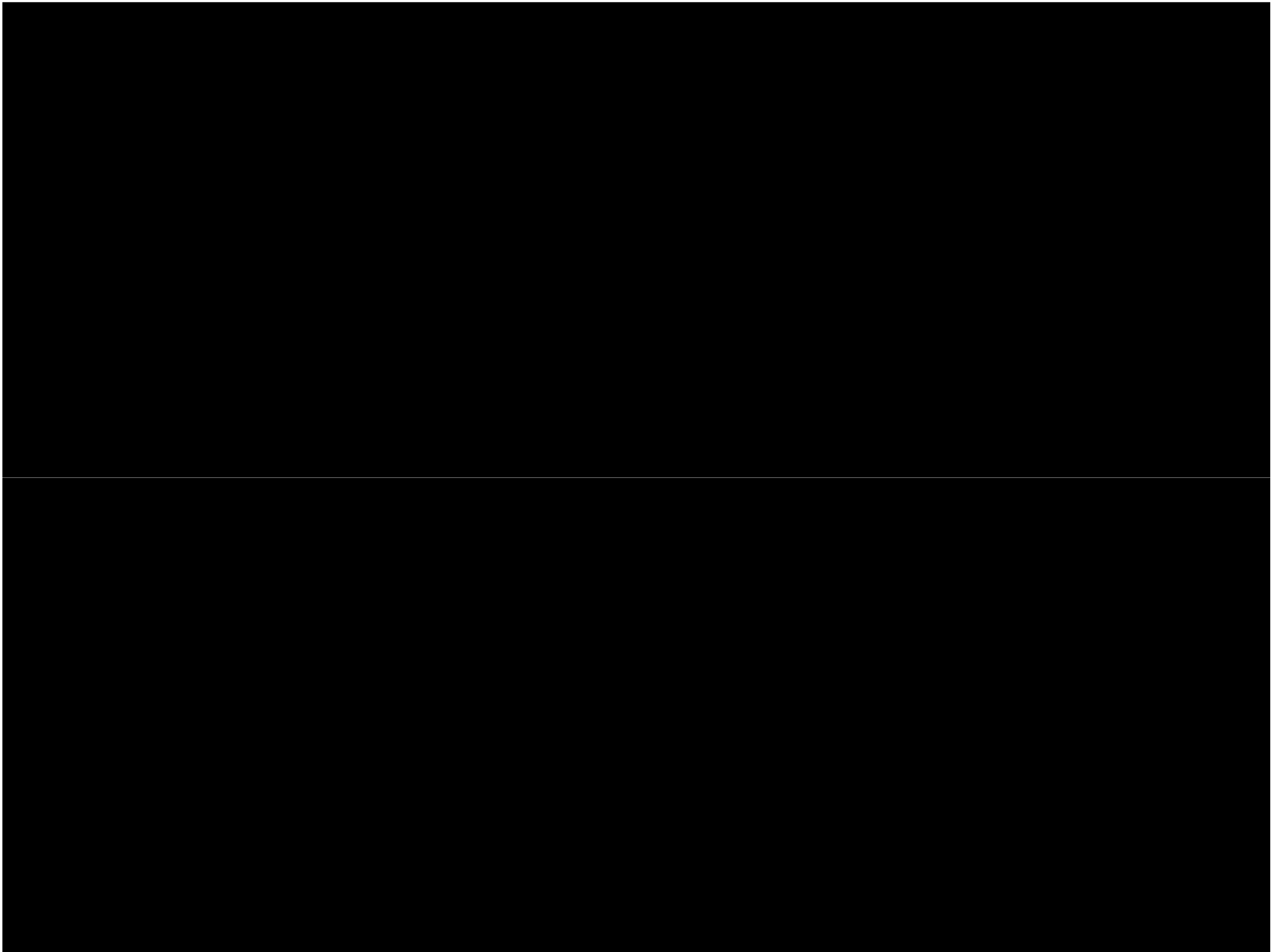
M51, Whirlpool Galaxy
Gran Telescopio CANARIAS (GTC)





NGC 5395 & NGC 5394, Arp 84
Gran Telescopio CANARIAS (GTC)

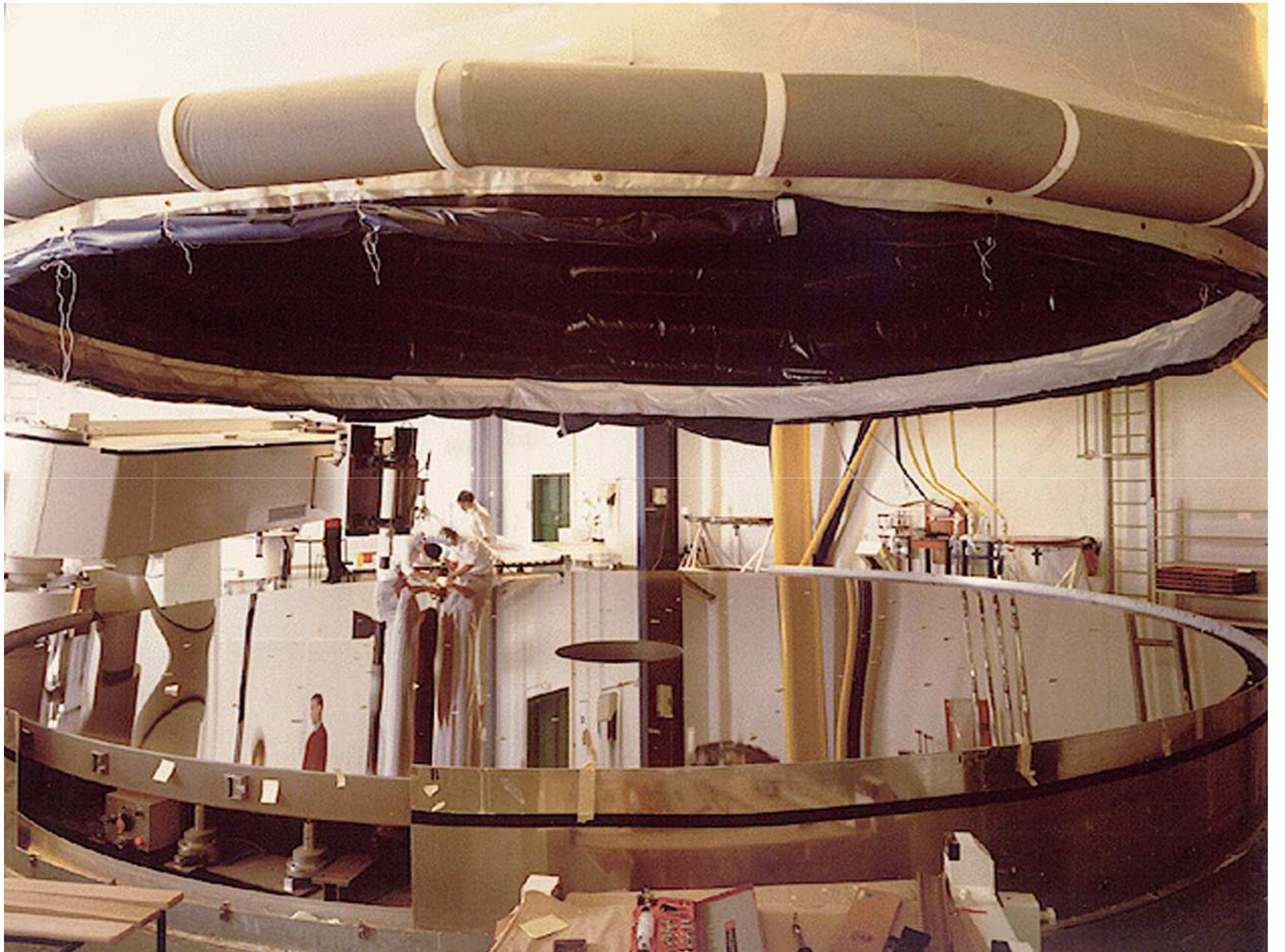




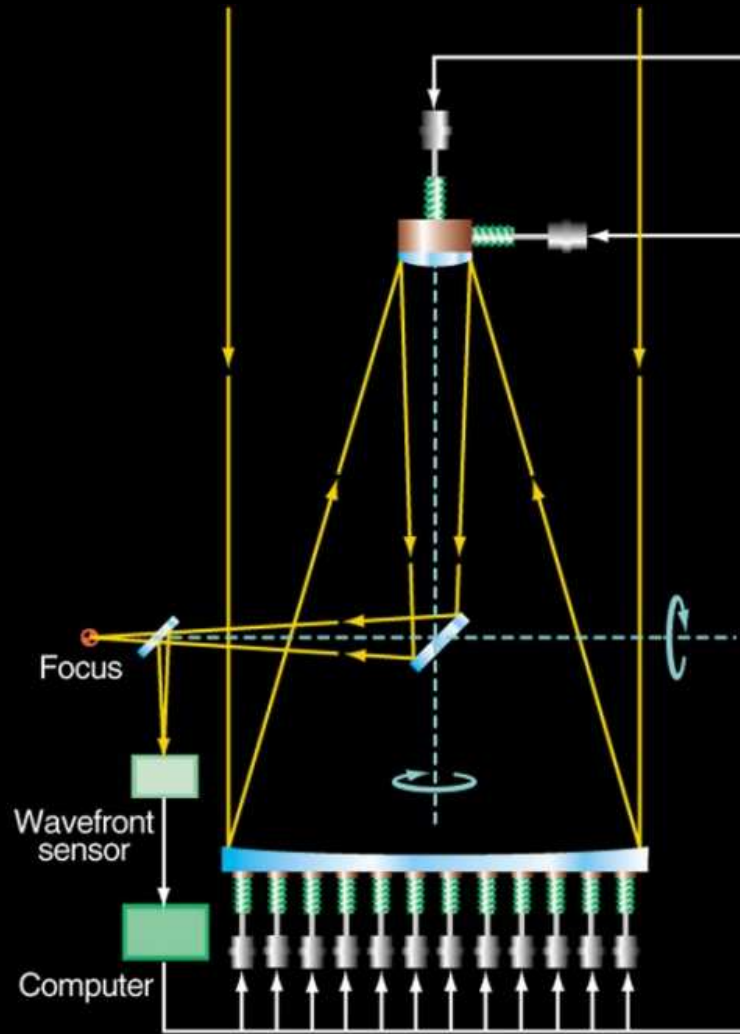
Telescopio Virtual de 120 metros

Very Large Telescope array
4 telescopios de 8.2 m





Óptica Activa



Galaxia Espiral con Barra NGC 1097



VLT (Very Large Telescope, 8.2m)

Galaxia espiral NGC 1232

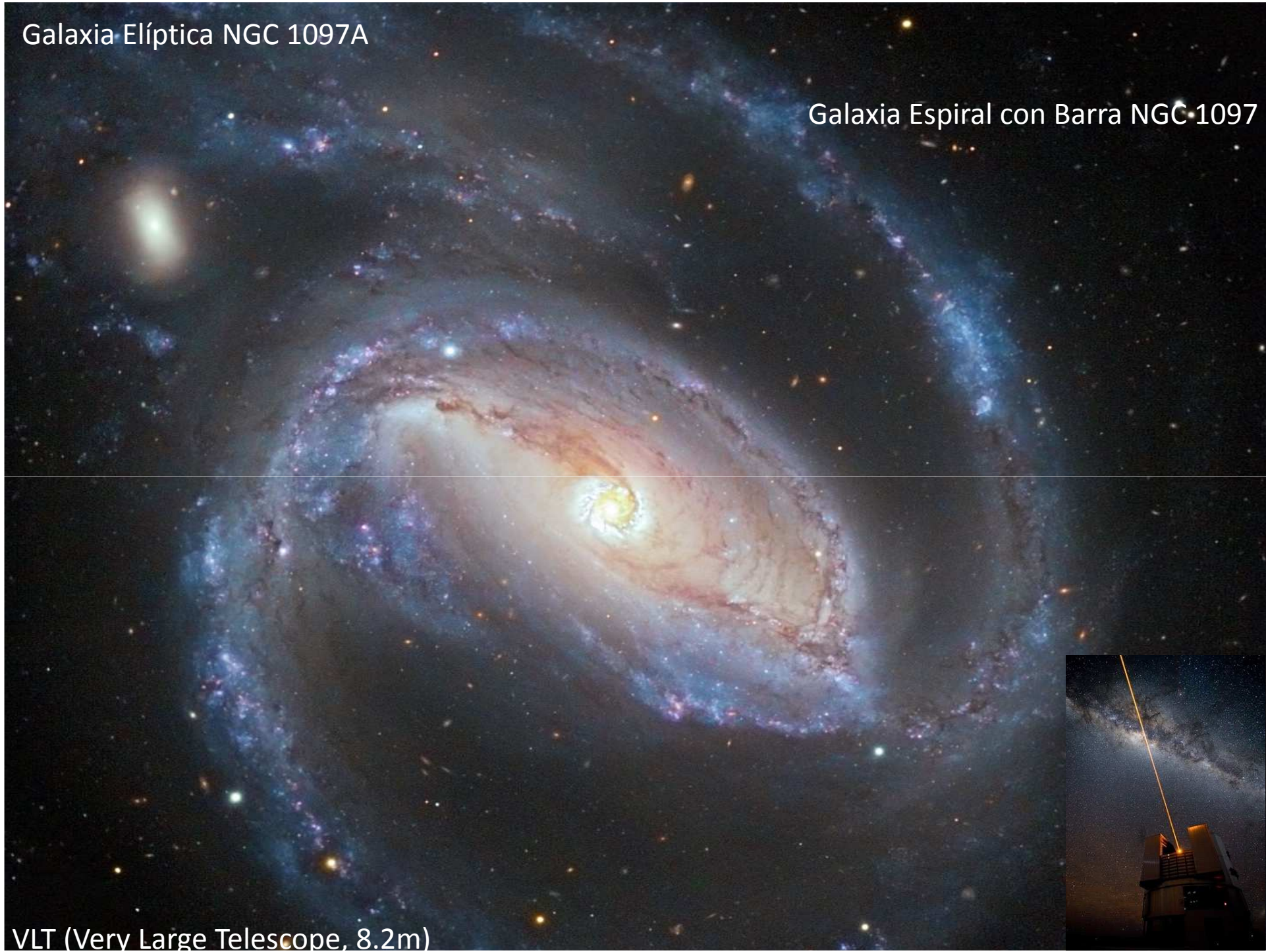


VLT (Very Large Telescope, 8.2m)



Galaxia Elíptica NGC 1097A

Galaxia Espiral con Barra NGC 1097



VLT (Very Large Telescope, 8.2m)

Nebulosa del Casco de Thor

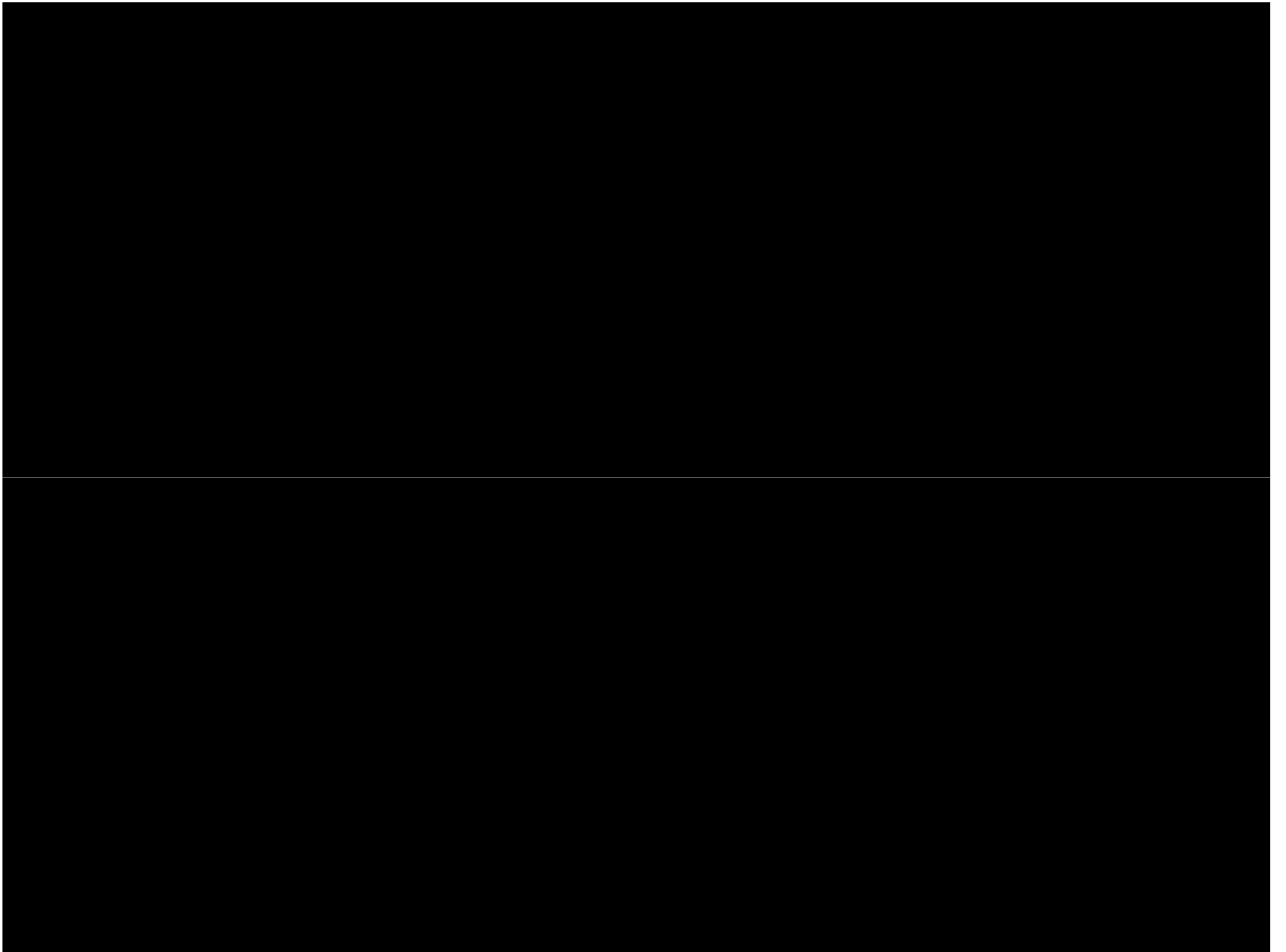


VLT (Very Large Telescope, 8.2m)



¿Quiénes visitan los observatorios?



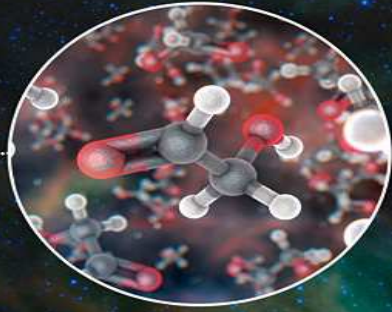


Atacama Large Millimeter/submillimeter Array

66 Antenas de 12 m de diámetro



HCOCH₂OH



Joven estrella binaria IRAS 16293-2422

<http://www.eso.org/public/spain/news/eso1234/>

Gran Telescopio Magallanes



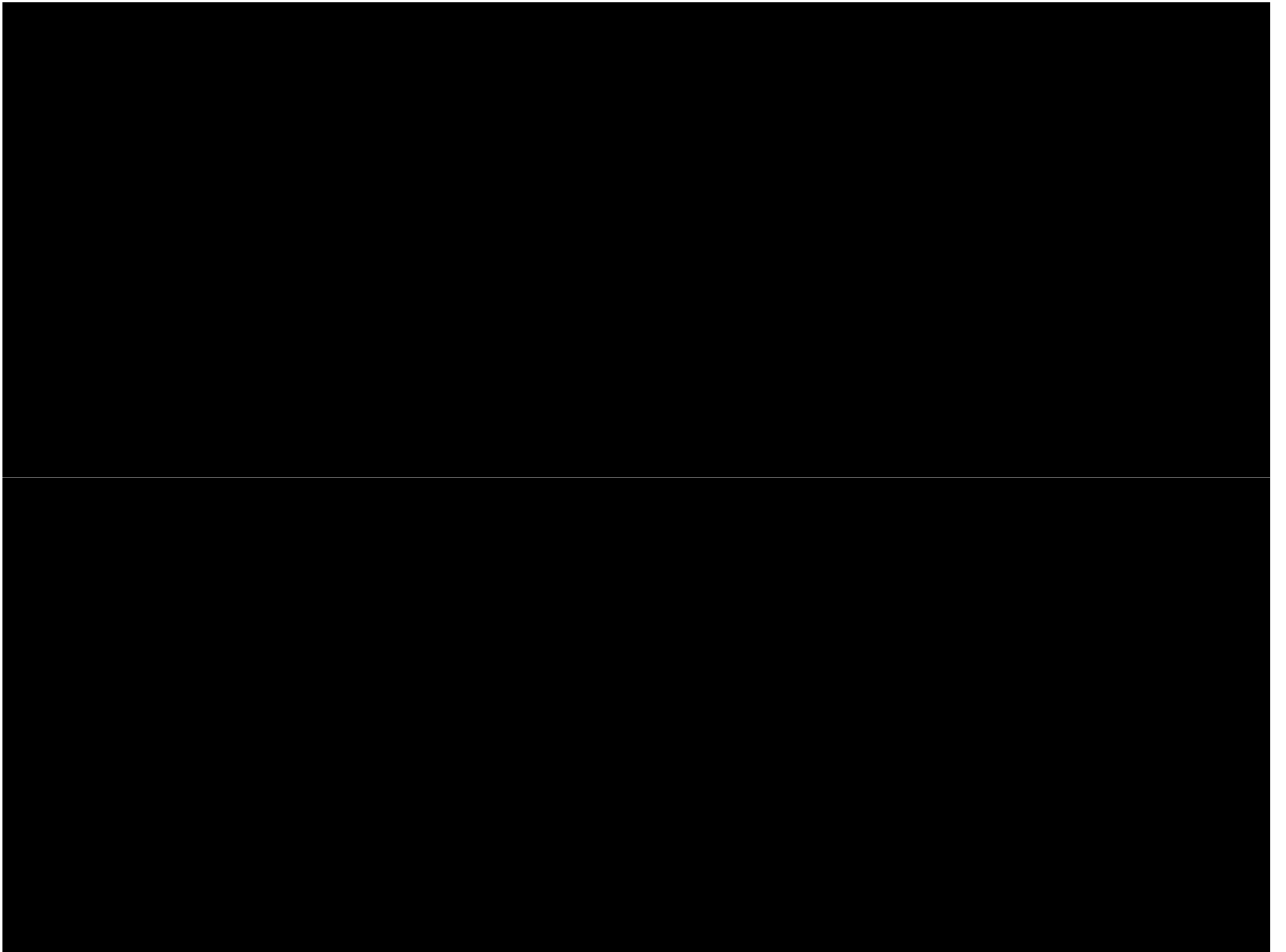
7 secundarios

8.4 m

Total 24.5 m

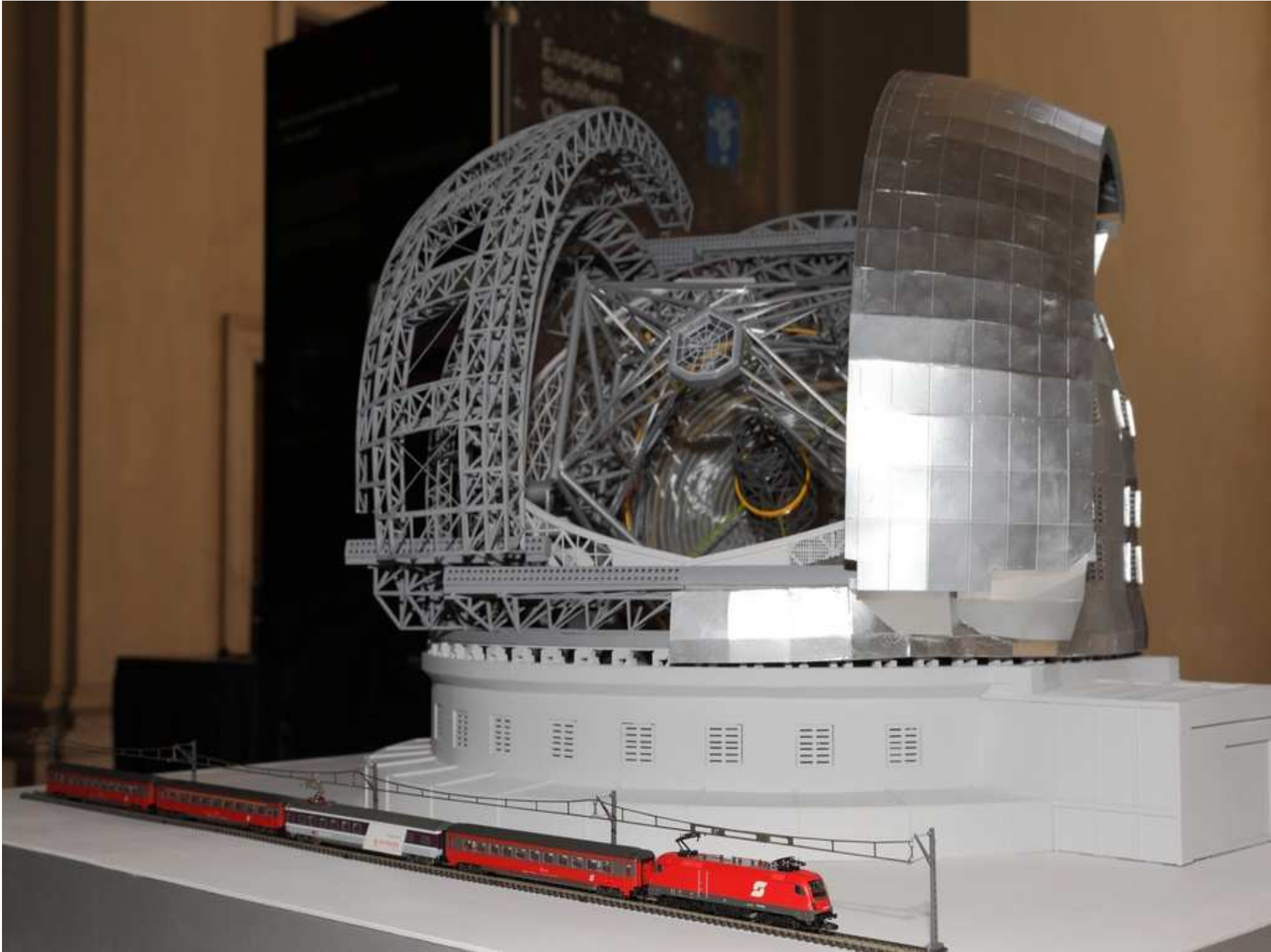
Gran Telescopio Magallanes





European Extremely Large Telescope 42 m





Objetivos del E-ELT

El proyecto del E-ELT tiene como objetivo la observación del universo con detalle.

El espejo de 42 metros posibilitaría el estudio de

1. Las atmósferas de planetas extrasolares, así como el estudio de esos planetas en sí.
2. Los discos protoplanetarios exteriores al Sistema Solar.
3. La energía oscura
4. La formación de galaxias.

¡Gracias!

alfredo@astro.unam.mx

¡Ajúa Compadre!