

“Astronomy is more than a spectator sport”

*“where we are & how
we got here”*

Tim Ewbank

Major Observatories & Space telescopes

*“To know where we’re going,
we have to know where we are.*

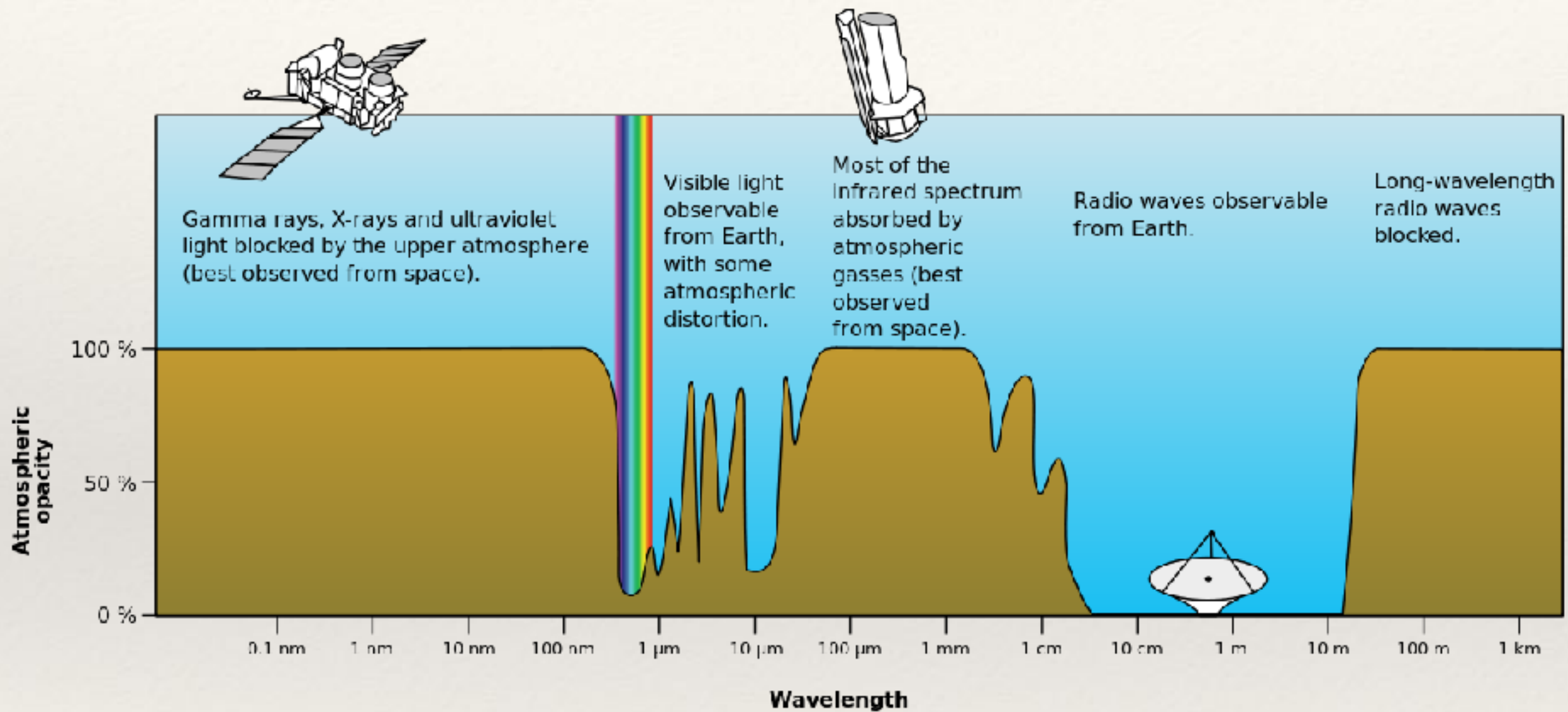
*To know that, we have to know where we came from
& how we got here”*

Observatories of the World

- ❖ Attributes of an observatory
- ❖ Geographical Distribution
- ❖ European Southern Observatory
- ❖ Space telescopes



Terrestrial v Space Telescopes



What you will need to build an observatory



after Derek Jones

Location of Major World Observatories

US

- ❖ California
- ❖ Arizona
- ❖ New Mexico
- ❖ Texas
- ❖ Hawaii

Europe

- ❖ Canary Islands

Chile

South Africa

Australia

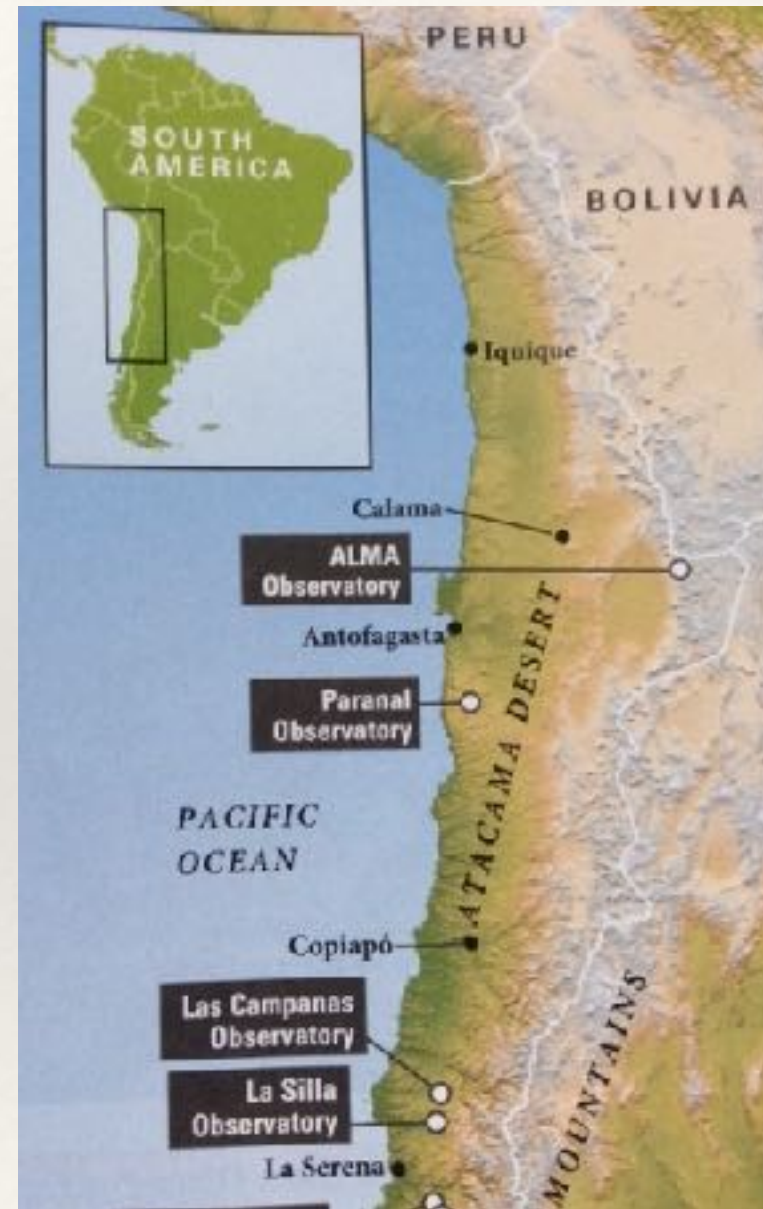
Japan

Russia

China

European Southern Observatory

- ❖ 16 nation consortia, established in 1962 (UK joined in 2002)
- ❖ Operates from three sites in northern Chile since 1969:
 - La Silla (1969)
 - Cerro Paranal (1998)
 - Llano de Chajnantor (2005)
- ❖ <http://www.eso.org/public/>





VLT (Very Large Telescope)



NTT (New Technology Telescope)



ALMA
Early universe



HARPS
Planet hunting

Space Telescopes

Missions

- 26 current
- Gamma ray, X-ray, Ultraviolet & visible
- approx 20 planned

Main reach areas

- early universe
- search for exoplanets

Challenges

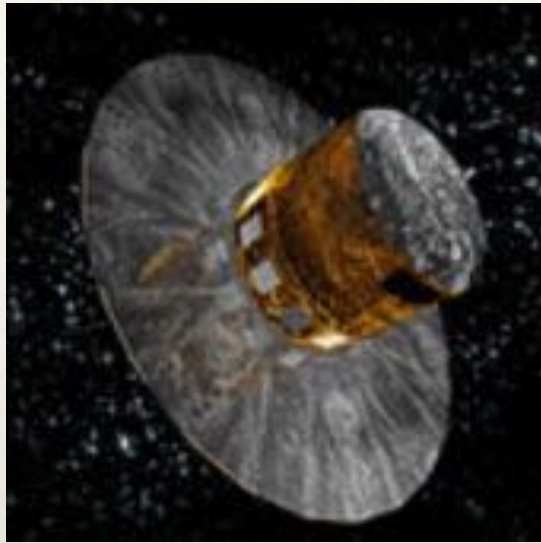
- Size & weight limitations
- Temperature range
- Remote controlling
- Data retrieval
- Difficulty of repair



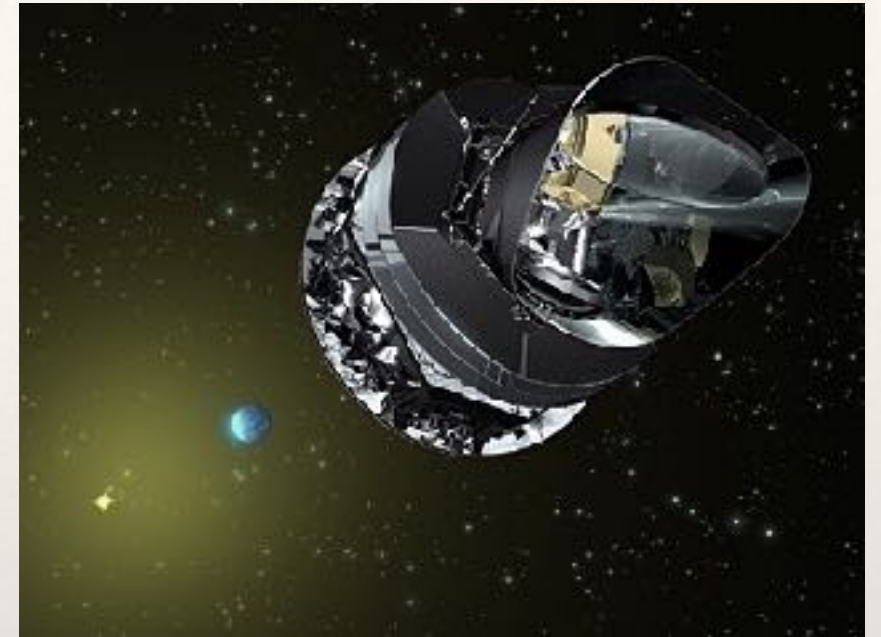
**Hubble Space
Telescope**
1990 - 2015+

List of Space Observatories:
<http://spider.seds.org/oaos/oaos.html>

Some Current Space Telescopes



Gaia
3D galaxy mapping



Planck
2009, CMB

Chandra
1999, X-Ray



Kepler
2009
Planet hunting



Links to Major Observatories & Scopes

Observatory / Telescope	weblink
VLT (Very Large Telescope)	http://www.eso.org/public/teles-instr/vlt/
NTT (New Technology Telescope)	https://eso.org/public/teles-instr/lasilla/ntt/
ALMA	http://almaobservatory.org
HARPS	http://eso.org/public/images/eso0427a/
Hubble Space Telescope	http://hubblesite.org
Gaia	https://gaia.ac.uk
Planck	http://sci.esa.int/planck/
Chandra	http://chandra.harvard.edu
Kepler	https://www.nasa.gov/mission_pages/kepler
James Webb Space Telescope	https://www.jwst.nasa.gov

http://en.wikipedia.org/wiki/List_of_astronomical_observatories