

Телескопи: типови и принцип на работа



Филип Парталовски



С К О П С К О
А С Т Р О Н О М С К О
Д Р У Ш Т В О

Ноќното небо...



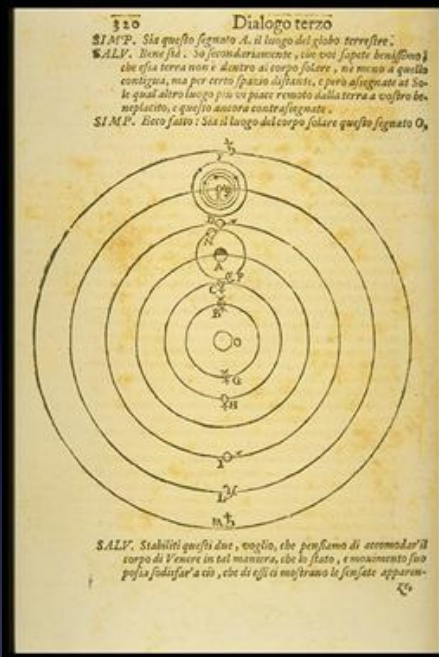
Галилео Галилеј

1564–1642



Галилео Галилеј

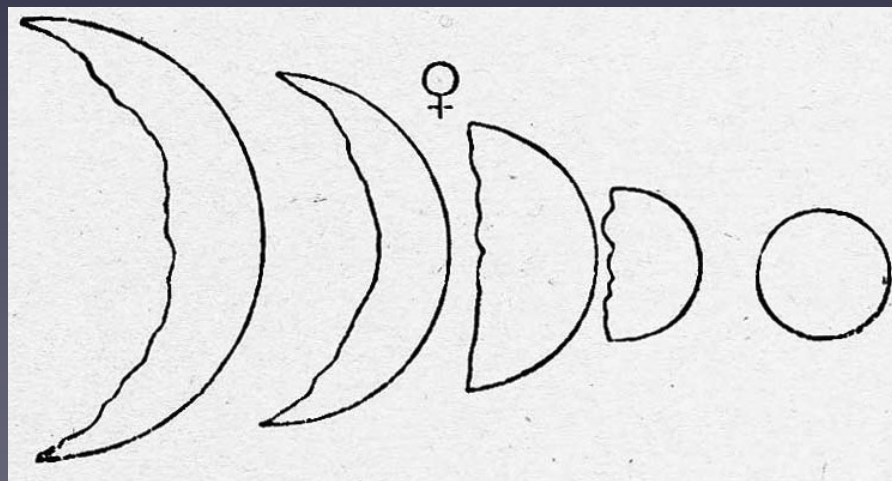
1564–1642



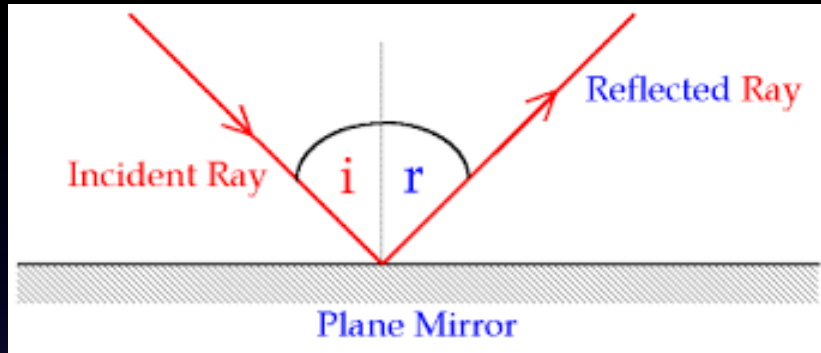
Observationes Iovianae

20. Iovis. Mart. H. 12. O **

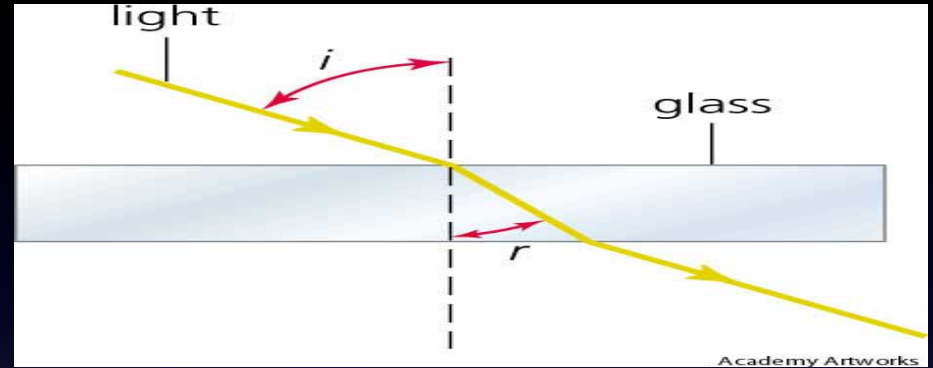
30. Mart.	** O *
2. Jovis.	O ** *
3. Mart.	O * *
3. Ho. s.	* O *
4. Mart.	* O **
6. Mart.	** O *
8. Mart. H. 13.	* * * O
10. Mart.	* * * O *
11.	* * O *
12. H. 4. Iovis.	* O *
13. Mart.	* * O *
14. Iovis.	* * * O *



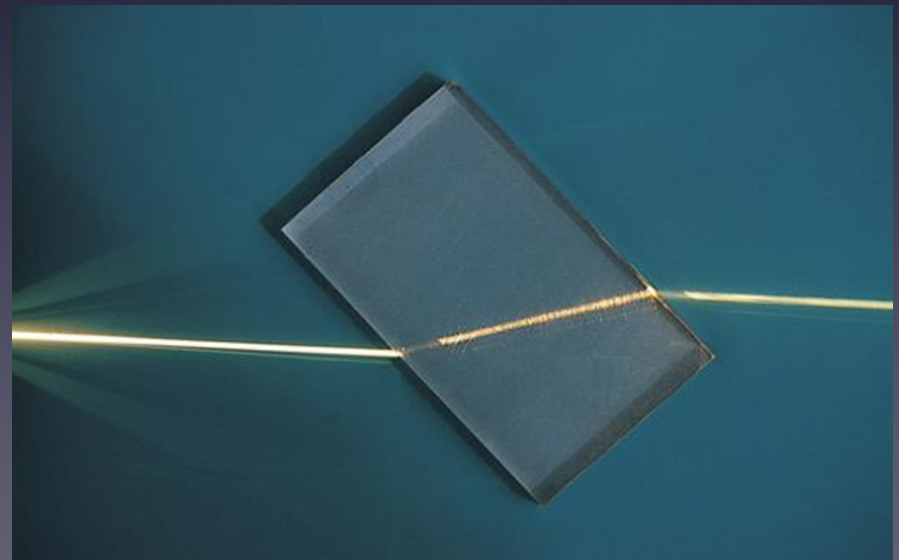
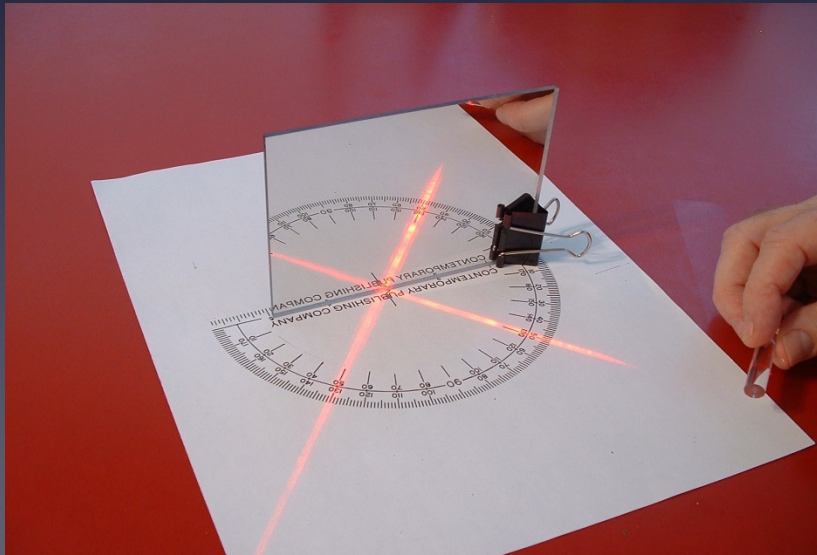
Основи на оптика



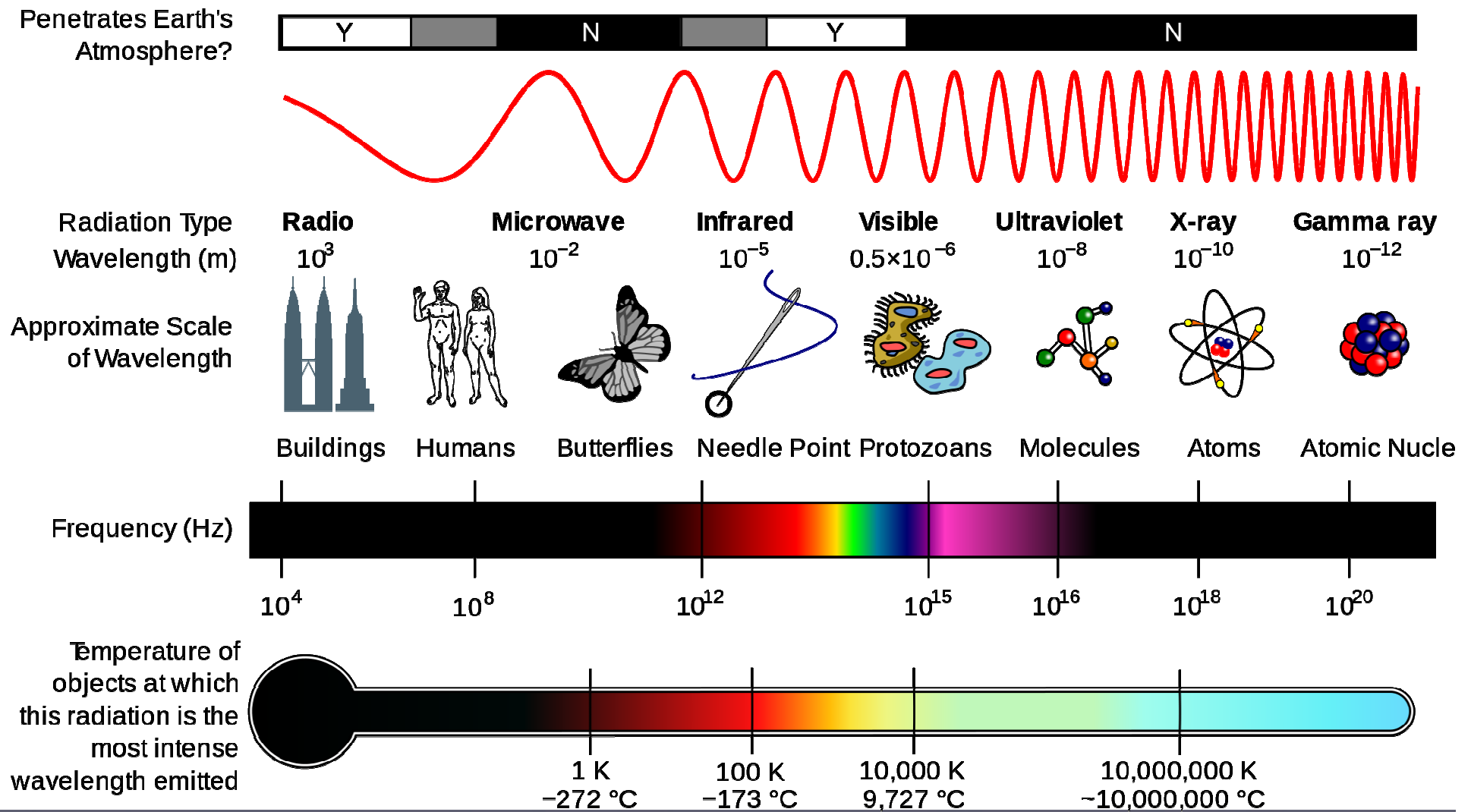
Рефлексија или
одбивање на светлина



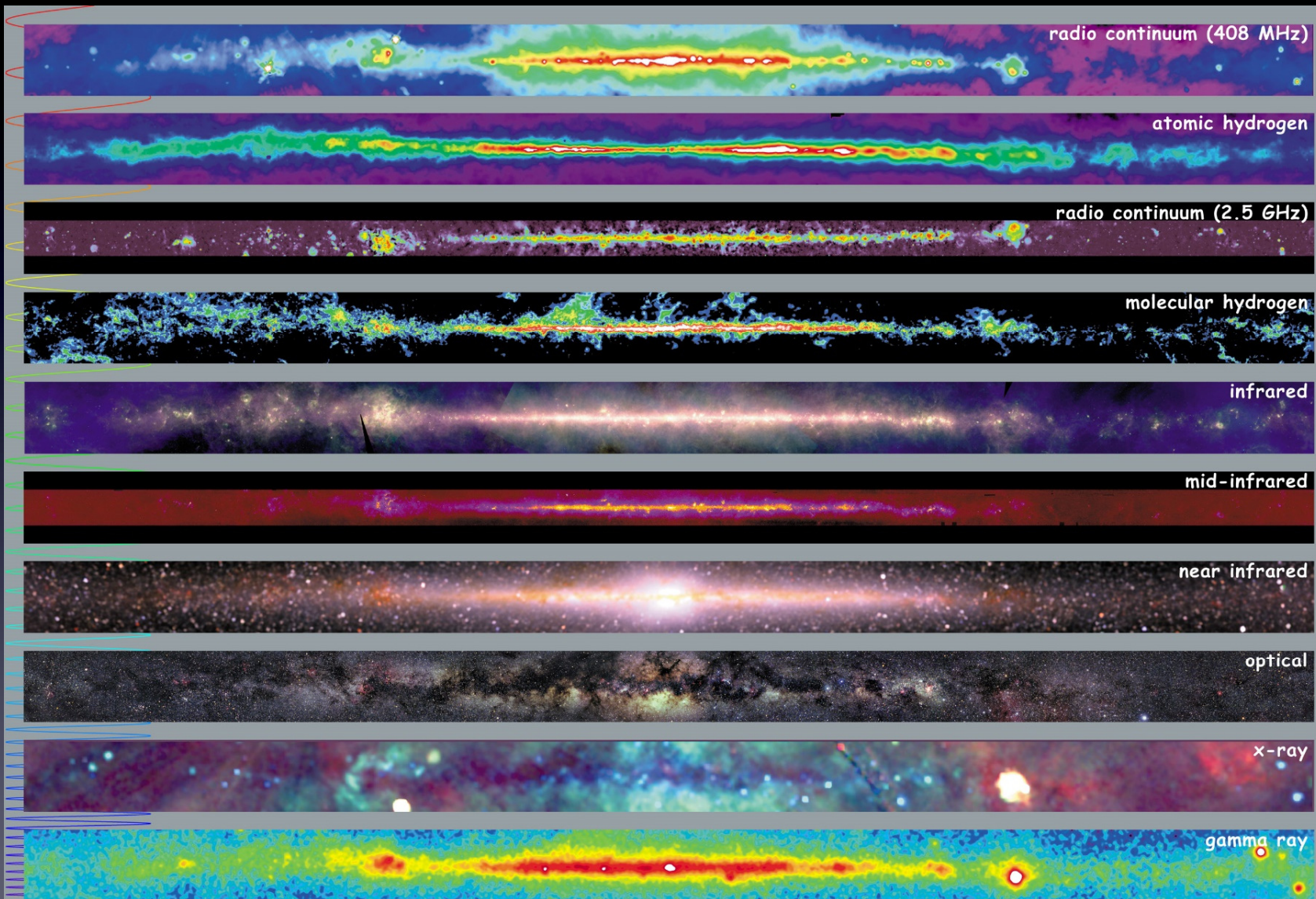
Рефракција или
прекршување на светлина



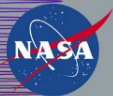
Електромагнетен спектар



Электромагнетен спектар

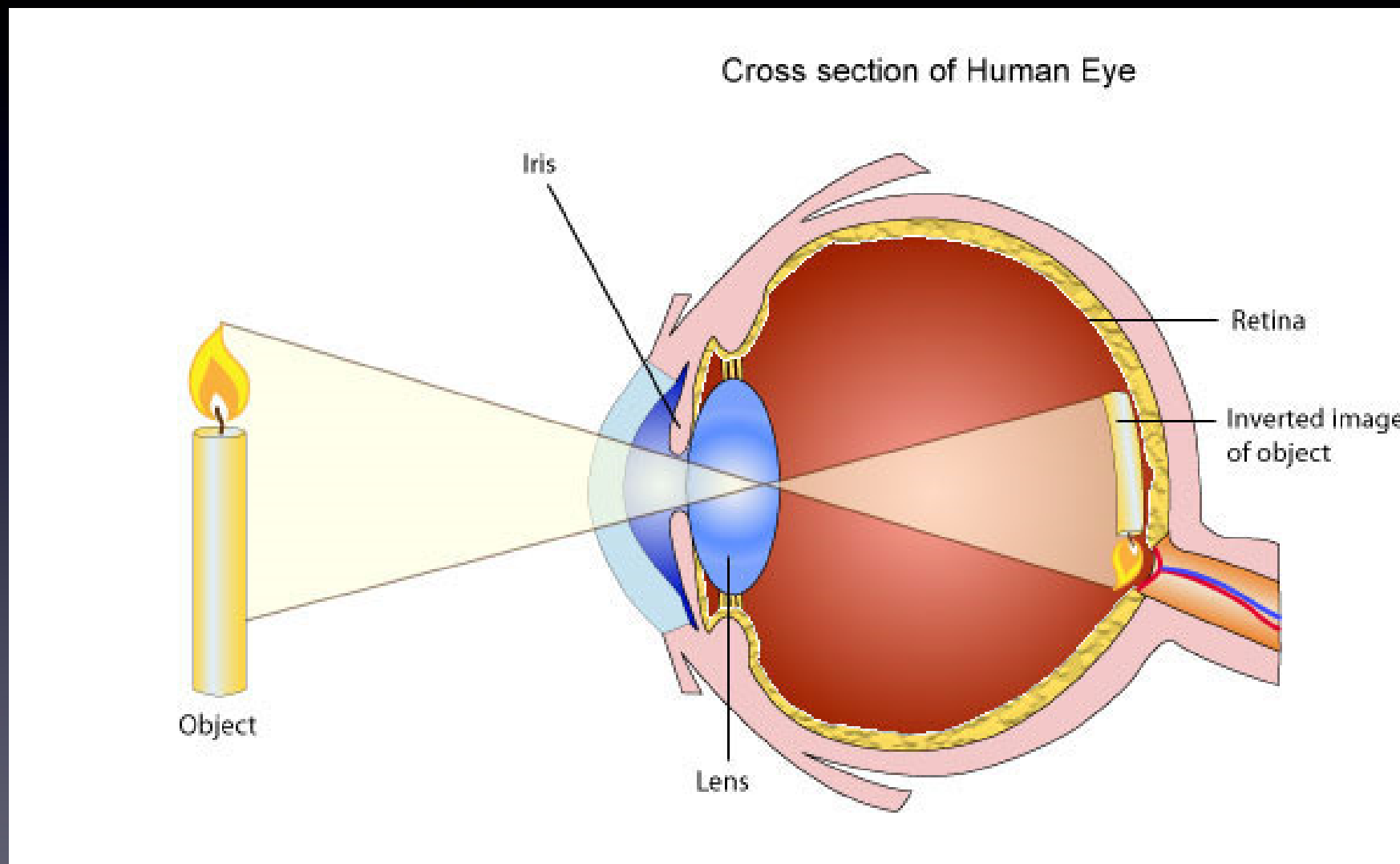


<http://adc.gsfc.nasa.gov/mw>

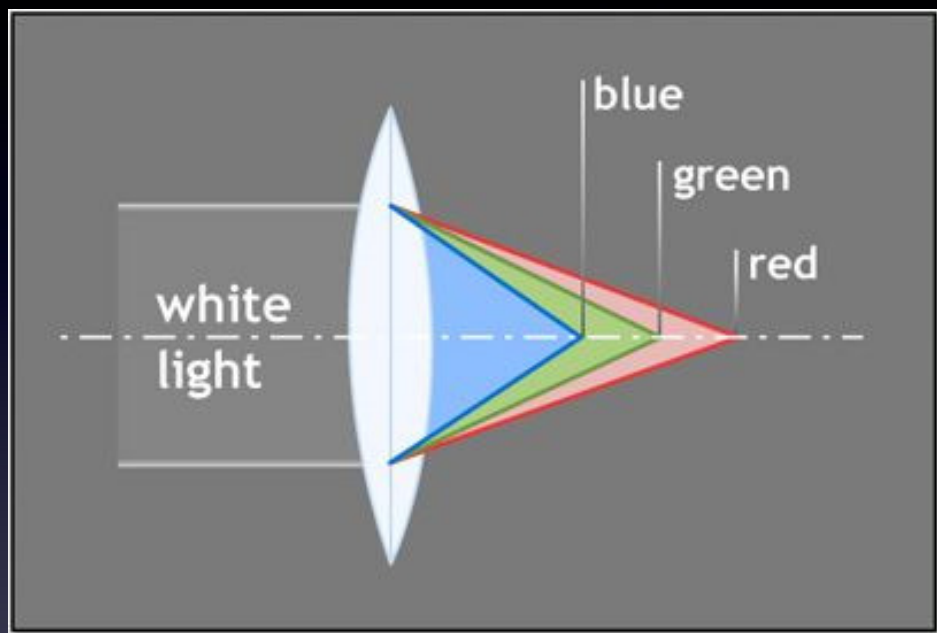


Multiwavelength Milky Way

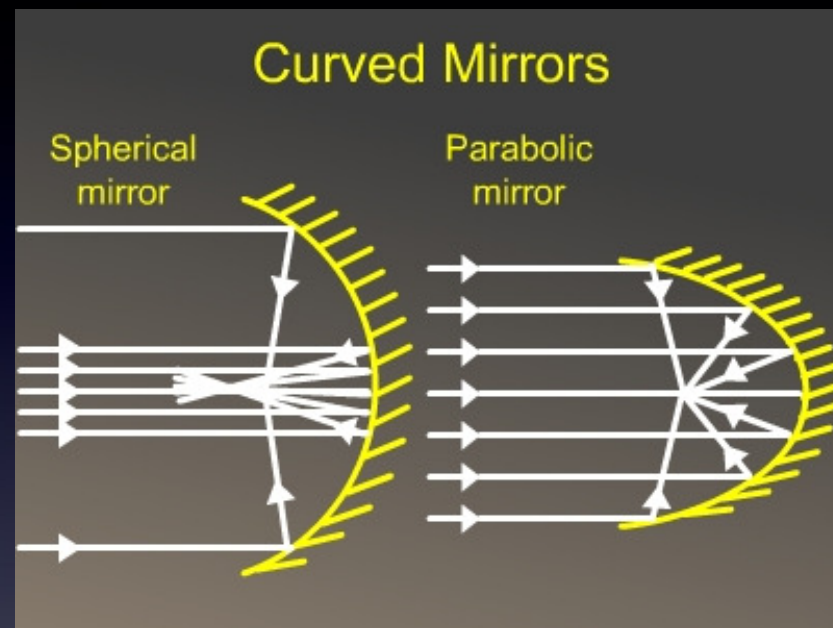
Човечкото око...



Објективи



Леќа



Огледало

D – дијаметар на објективот

F – фокусна далечина на објективот

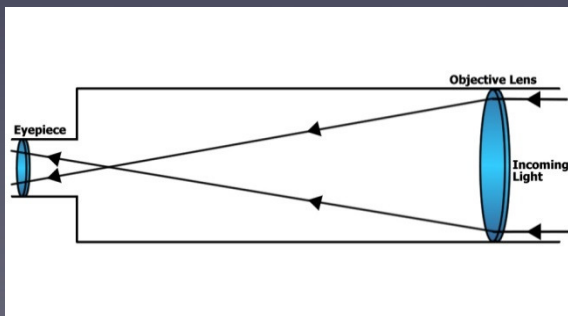
f број = F/D

Типови на телескопи



Рефрактори

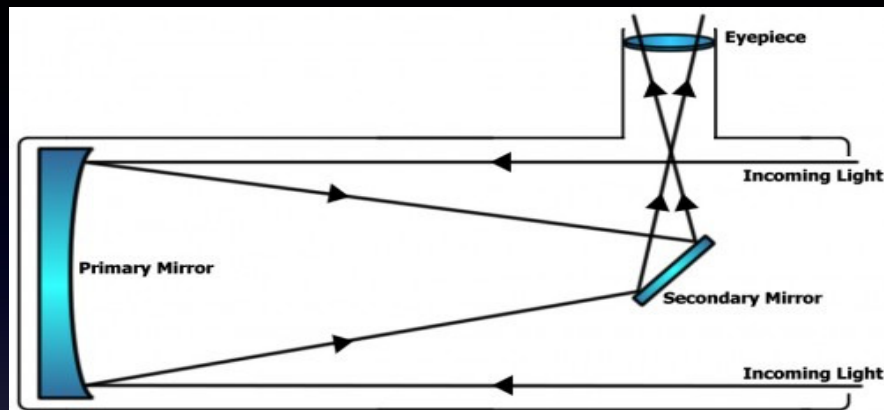
Апохромат (APO) рефрактори
Ахромат рефрактори



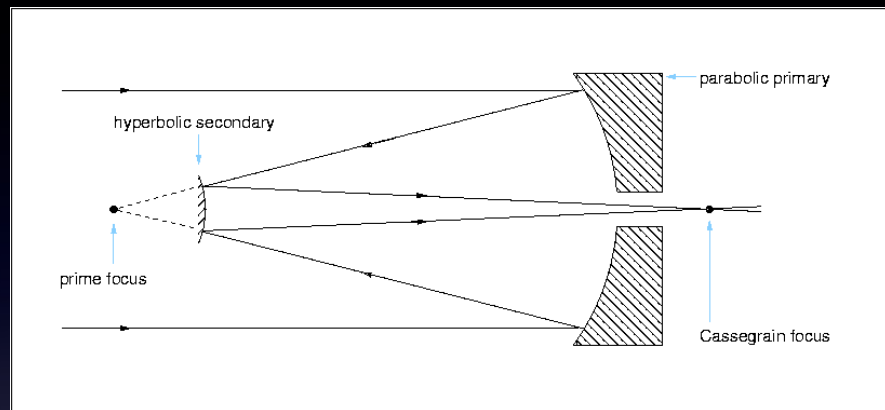
Рефлектори

Њутнов
Касагрен
Ричи-Кретиен
Максутов

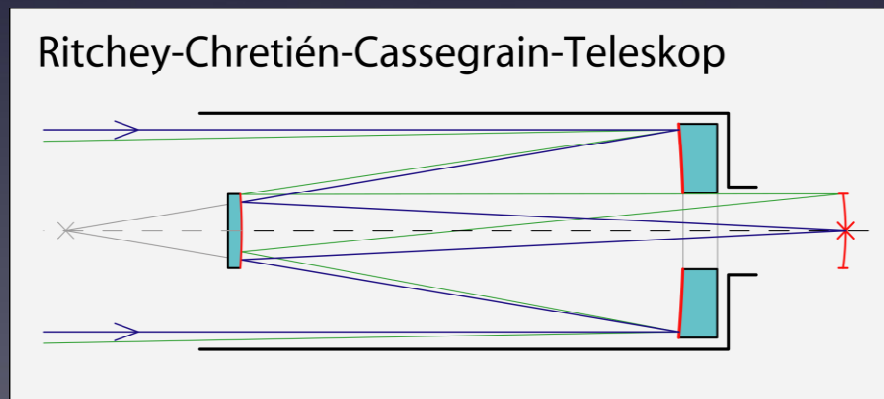
Типови на рефлектори



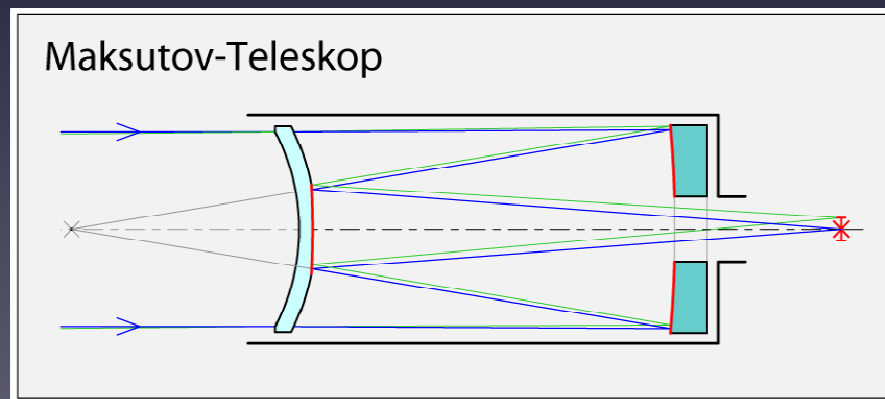
Њутонов



Касагрен



Ричи-Кретиен



Максутов (катадиоптрик)

Основни делови на рефлектор



Фокусер и „барател“ (finder)



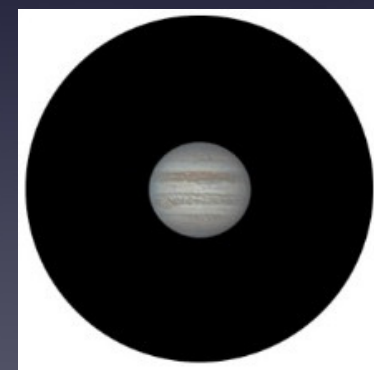
Примарно огледало со држач



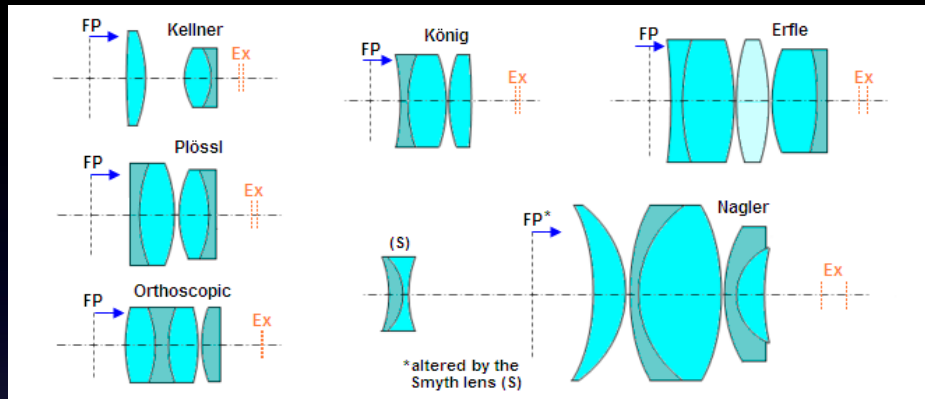
Секундарно огледало со држач

Зголемување кај телескопи

Не е се во
зголемувањето!



Окулари



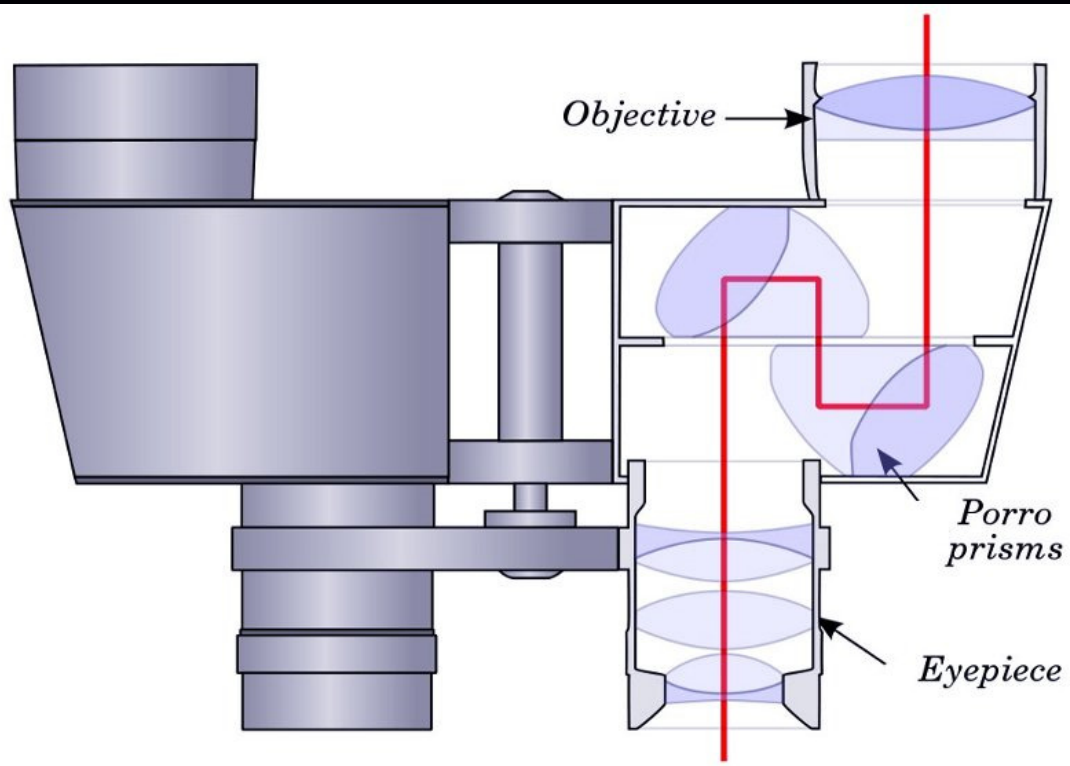
Телескопи за набљудување



Џон Добсон
1915 – 2014

Мегадоб телескоп

Двогледи



Мерки за двогледи $A \times B$

A – зголемување на двогледот

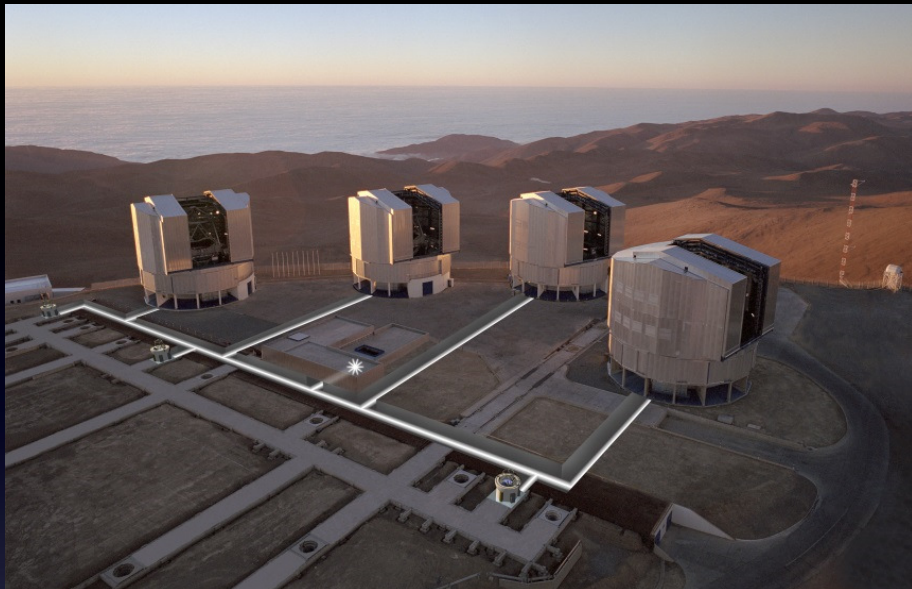
B – дијаметар на објективот

Двоглед 25х100



Големи светски опсерватории

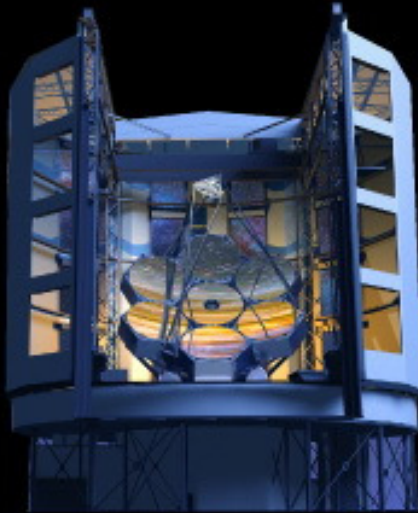
Very Large Telescopes – VLT



Keck I & II Telescopes



Големи светски опсерватории



GIANT MAGELLAN TELESCOPE

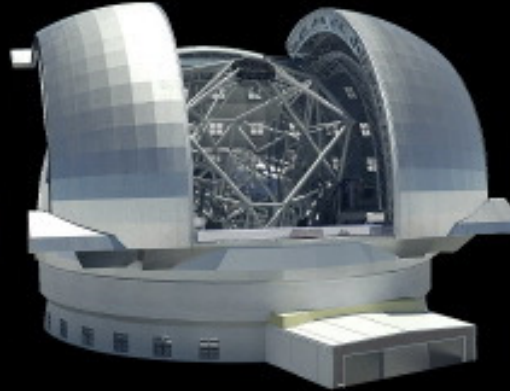
MAIN MIRROR DIAMETER:

80 feet (24.5 m)

MIRROR SEGMENTS: 7

LOCATION: Las Campanas
Observatory, Chile

PLANNED OPERATIONAL START:
2020



EUROPEAN EXTREMELY LARGE TELESCOPE

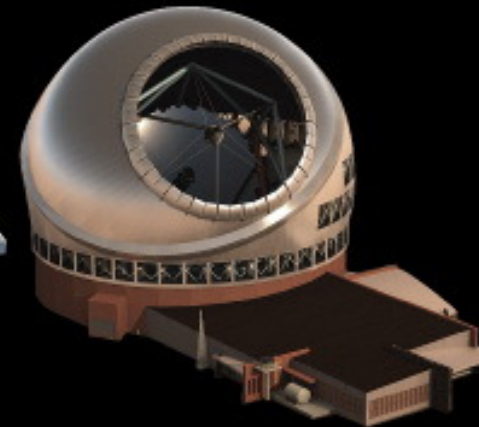
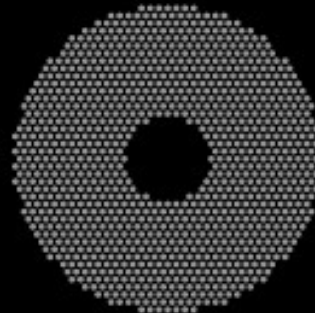
MAIN MIRROR DIAMETER:

129 feet (39.3 m)

MIRROR SEGMENTS: 798

LOCATION: Cerro Armazones, Chile

PLANNED OPERATIONAL START: early 2020s



THIRTY METER TELESCOPE

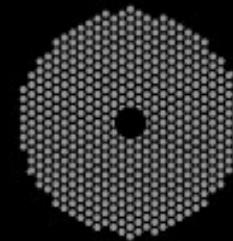
MAIN MIRROR DIAMETER:

98 feet (30 m)

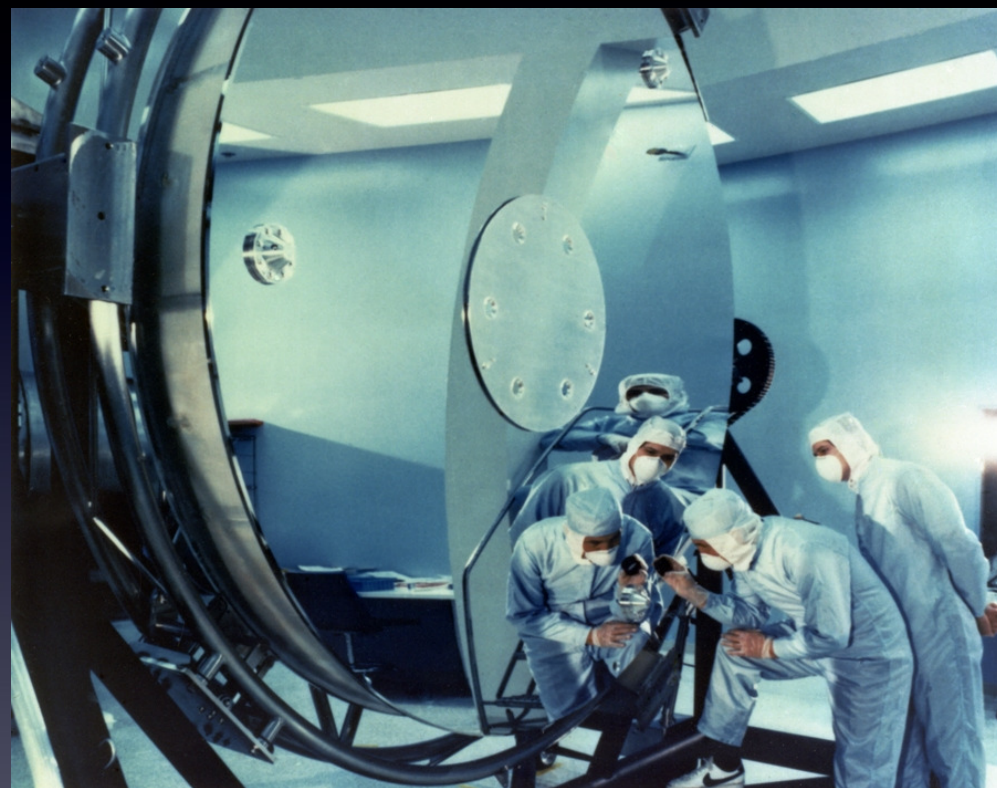
MIRROR SEGMENTS: 492

LOCATION: Mauna Kea, Hawaii

PLANNED OPERATIONAL START:
early 2020s

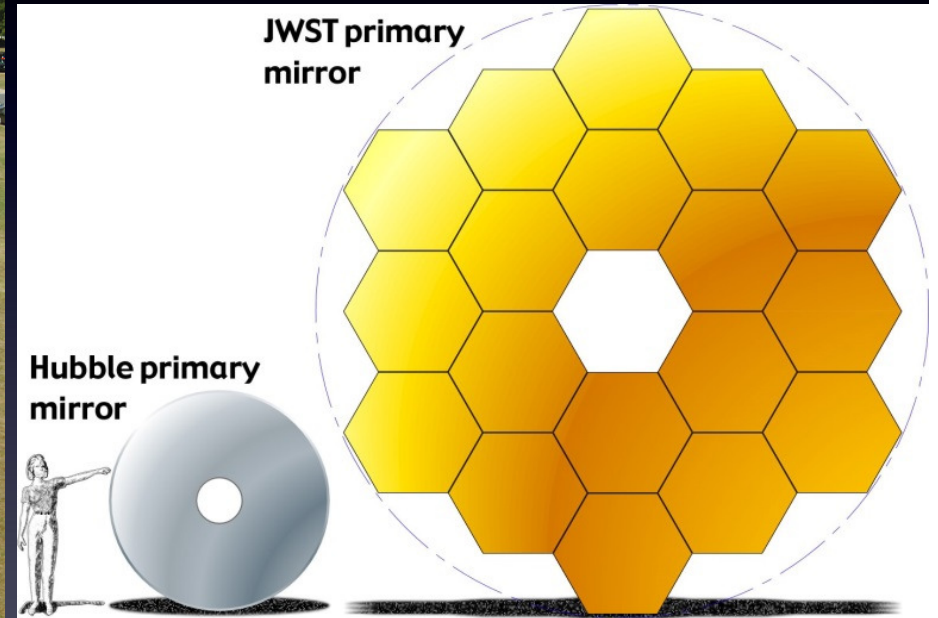


Вселенски телескопи



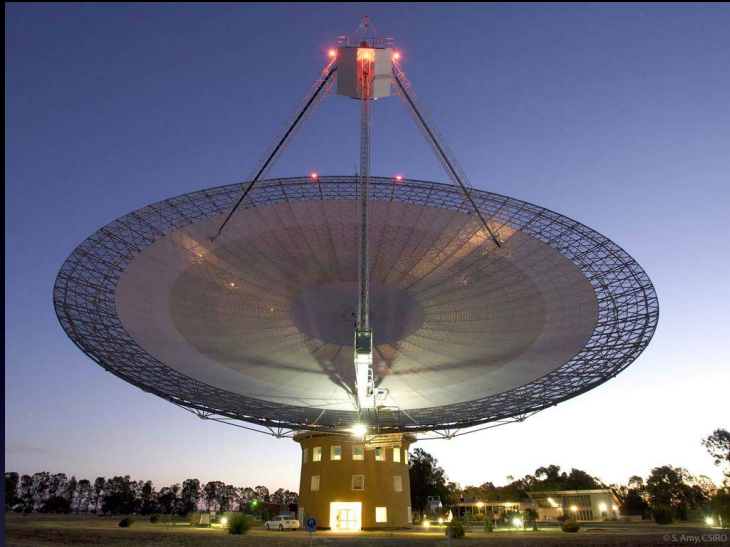
Хабл (Hubble Space Telescope)

Вселенски телескопи



Џејмс Веб (James Webb Space Telescope)

Радио телескопи



Паркс



Аресибо

Atacama Large Millimeter Array – ALMA





С К О П С К О
А С Т Р О Н О М С К О
Д Р У Ш Т В О

Прашања