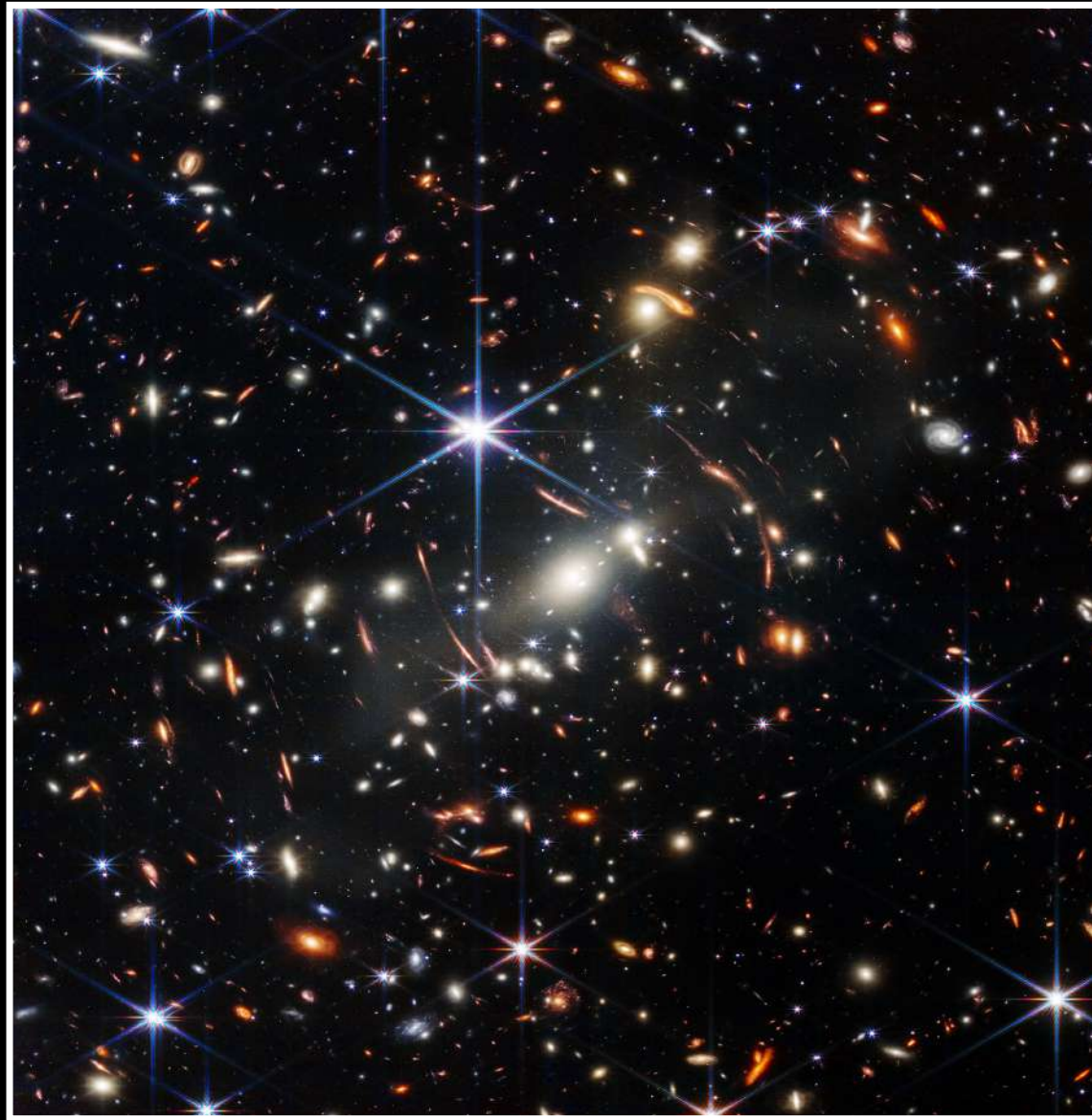




La fisica dei mondi abitabili

Amedeo Balbi

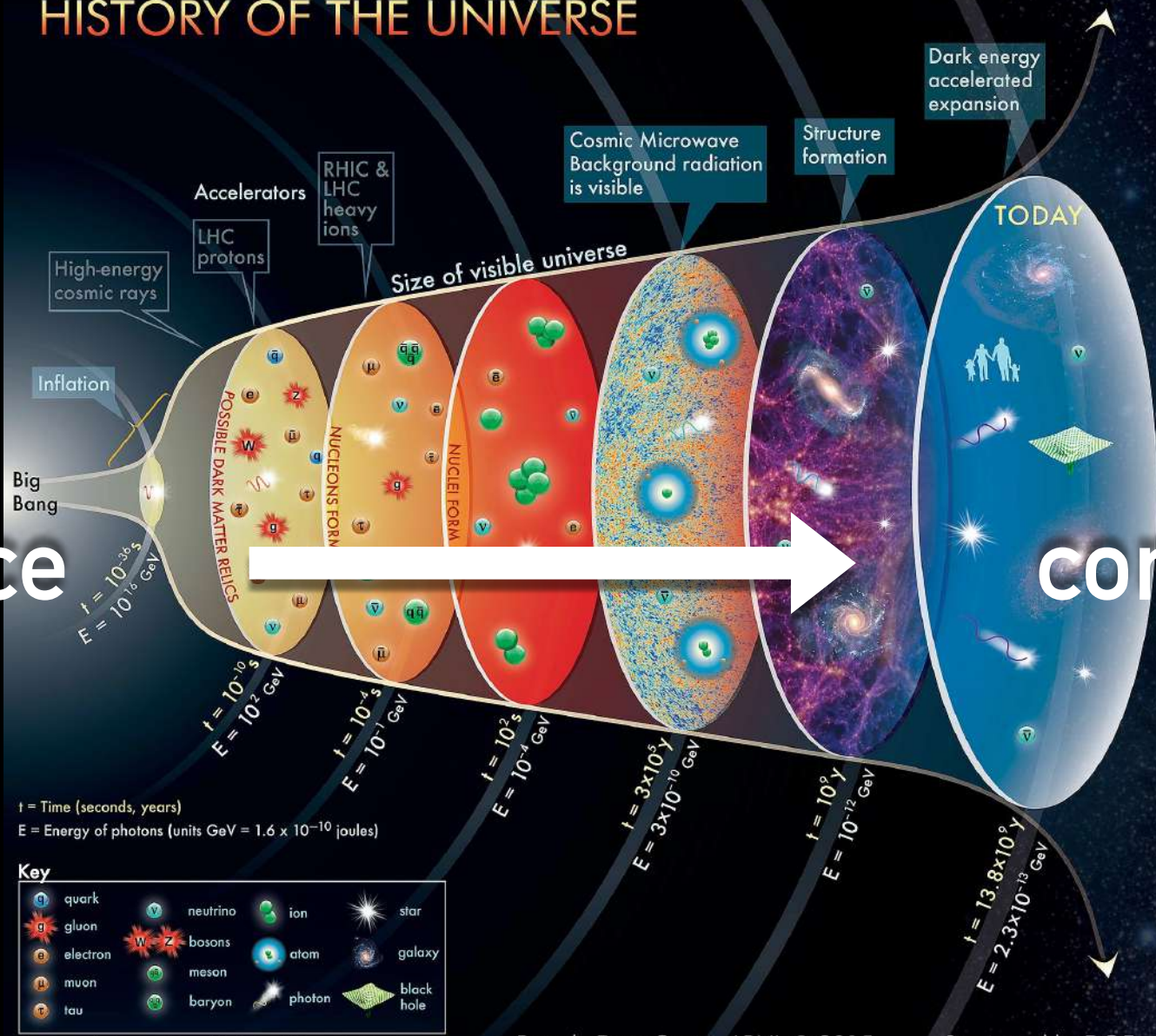




HISTORY OF THE UNIVERSE

semplice

complesso



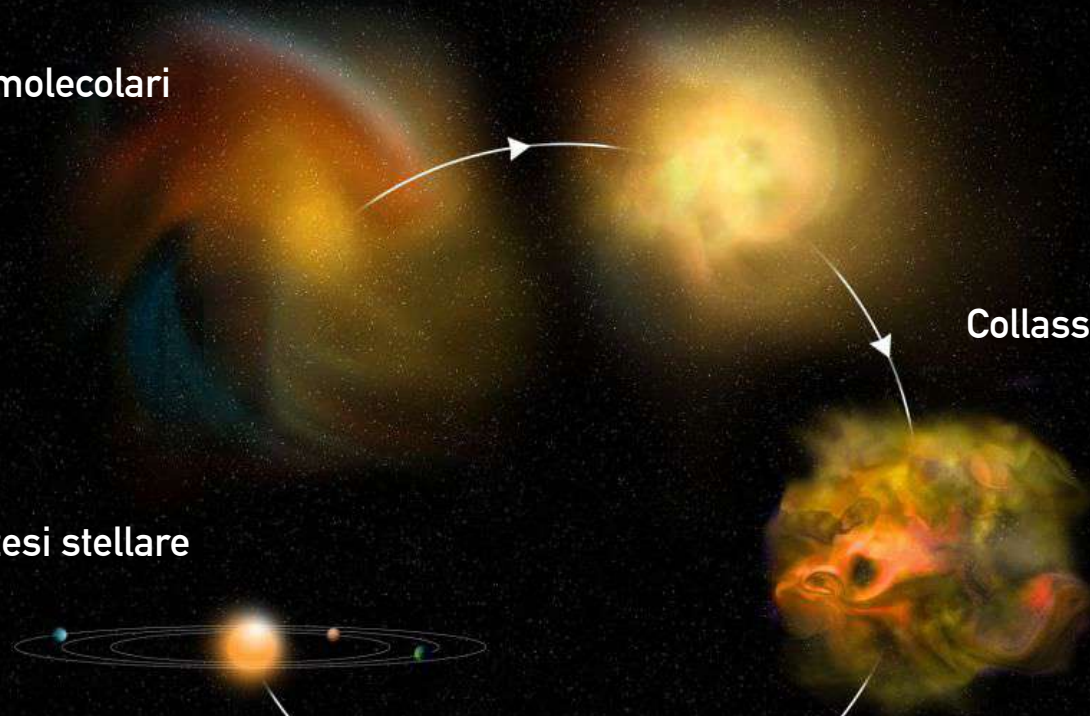
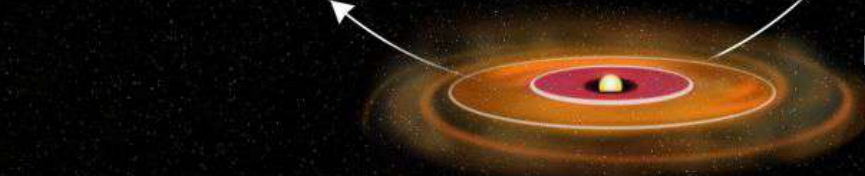
The concept for the above figure originated in a 1986 paper by Michael Turner.

Nubi molecolari

Collasso gravitazionale

Nucleosintesi stellare

Formazione stellare e planetaria



30%

GIGANTI GASSOSI



31%

SUPER TERRE



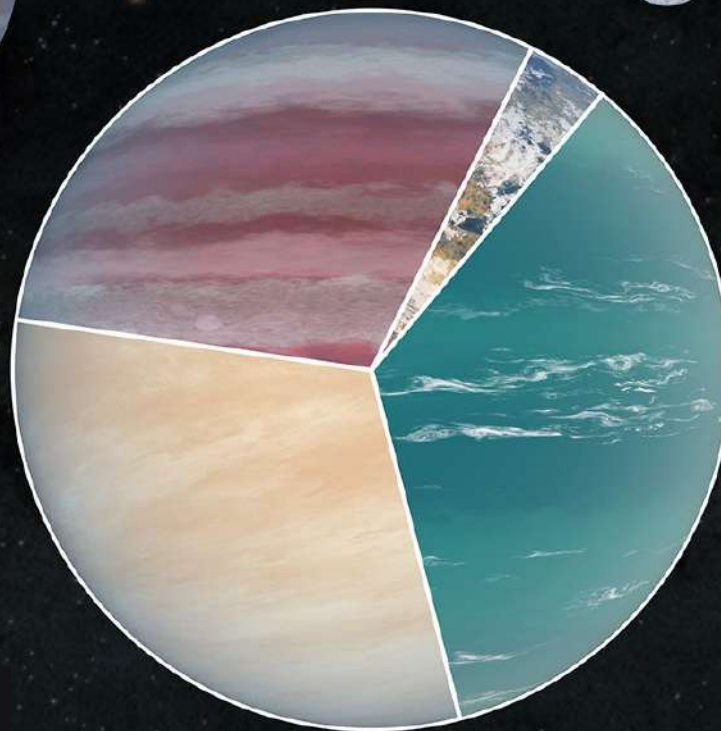
4%

TERRESTRI



35%

NETTUNIANI



5000+

PIANETI EXTRASOLARI

PHILOSOPHIÆ
NATURALIS
PRINCIPIA
MATHEMATICA.

Autore J. S. NEWTON, Trin. Coll. Cantab. Soc. Matheseos
Professore *Lucaiano*, & Societatis Regalis Sodali.

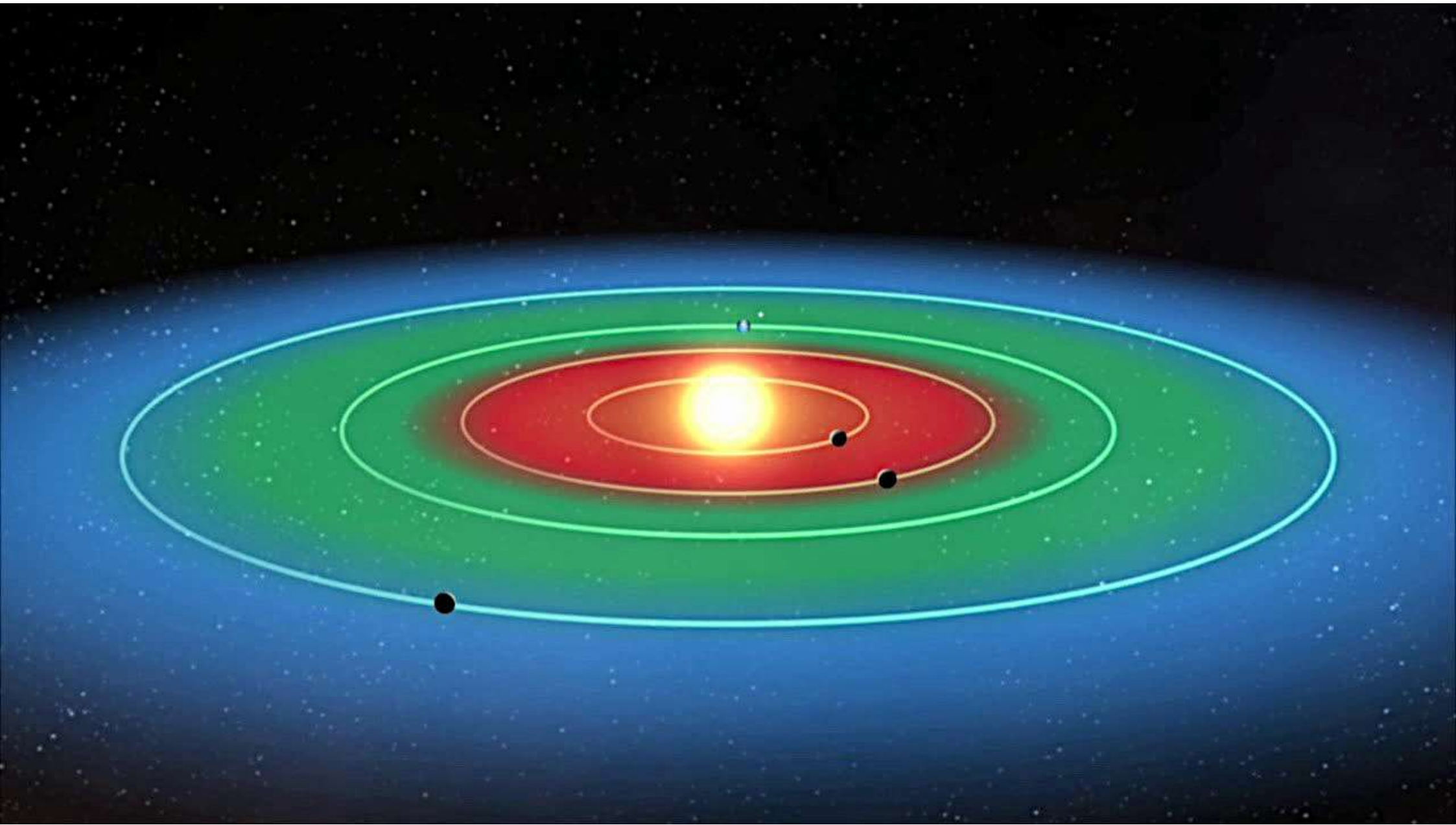
IMPRIMATUR.
S. PEPYS, Reg. Soc. PRÆSES.
Julii 5. 1686.

LONDINI,

Jussu Societatis Regiæ ac Typis *Josephi Streater*. Prostat apud
plures Bibliopolas. Anno MDCLXXXVII.

«Our **water**, if the earth were located in the orbit of Saturn, would be **frozen**, if in the orbit of Mercury it would depart at once into **vapours**. For the light of the sun, to which the heat is proportional, is seven times denser in the orbit of Mercury than with us: and with a thermometer I have found that with a seven-fold increase in the heat of the summer sun, water boils off.»

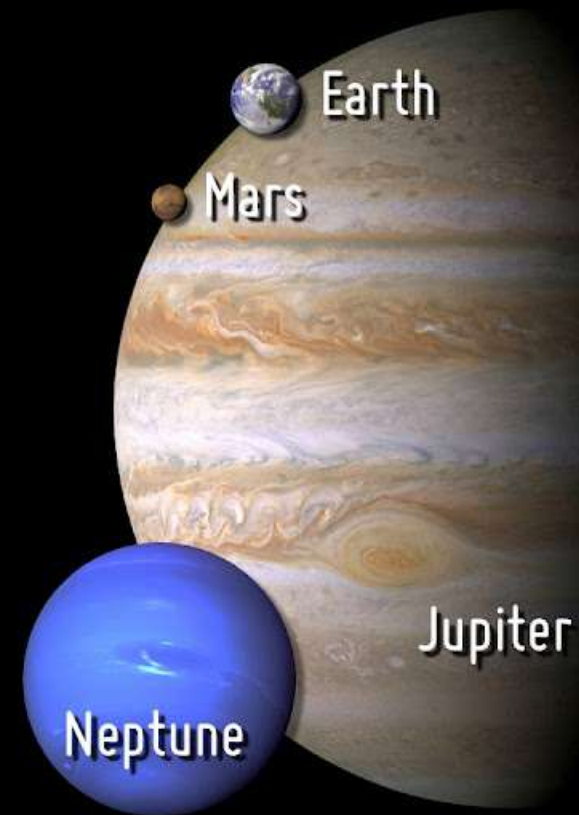
— Newton, 1687



Potentially Habitable Exoplanets

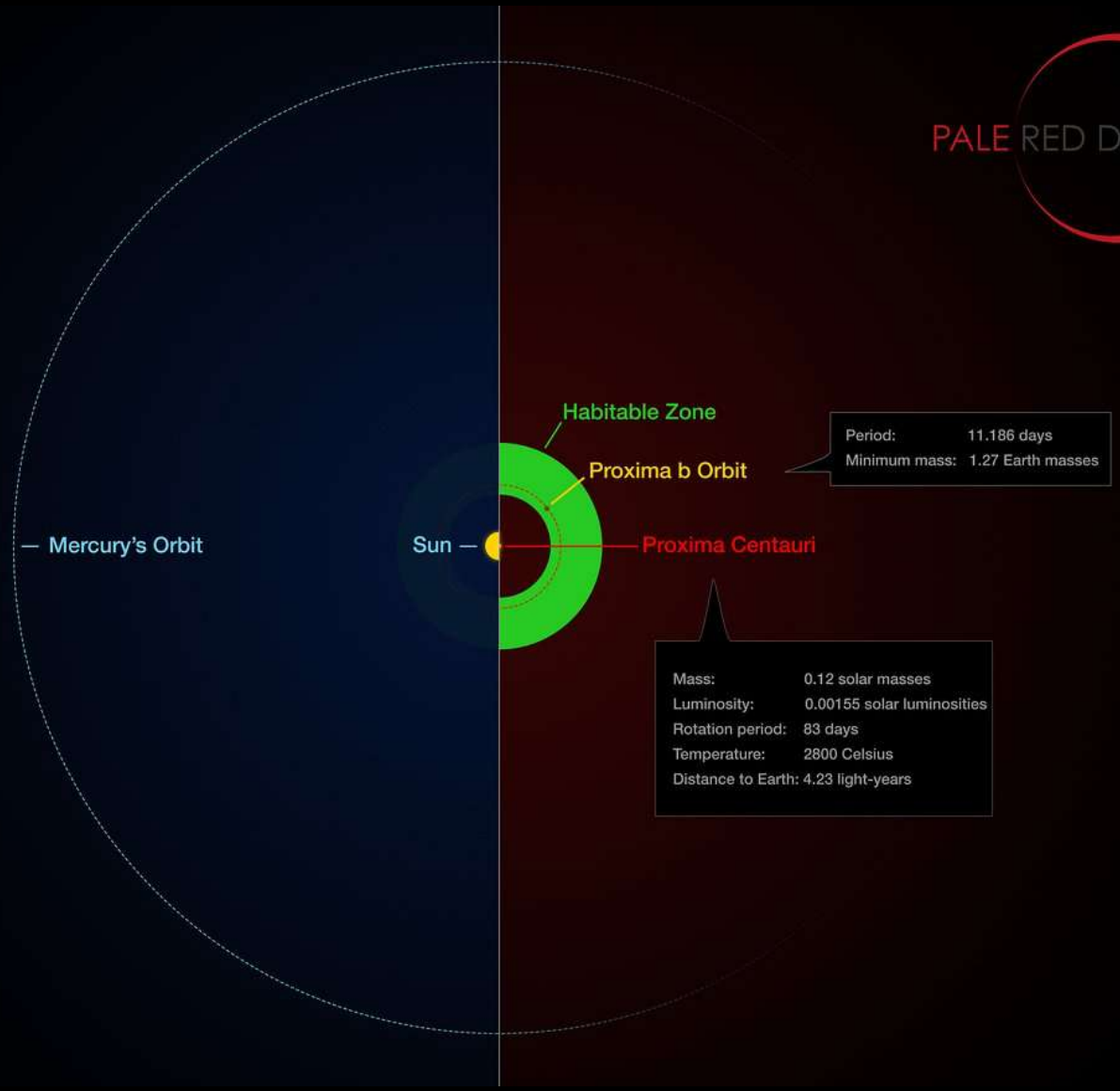


Sorted by Distance from Earth



Artistic representations. Earth, Mars, Jupiter, and Neptune for scale. Distance from Earth in light years (ly) is between brackets.

CREDIT: PHL @ UPR Arcibo (phl.upr.edu) Jan 5, 2023



Period: 11.186 days
Minimum mass: 1.27 Earth masses

Mass: 0.12 solar masses
Luminosity: 0.00155 solar luminosities
Rotation period: 83 days
Temperature: 2800 Celsius
Distance to Earth: 4.23 light-years

TRAPPIST-1 System



Inner Solar System



Enlarged 25x

Kepler-452 System

Kepler-186 System

Solar System

Kepler-186f

Mercury

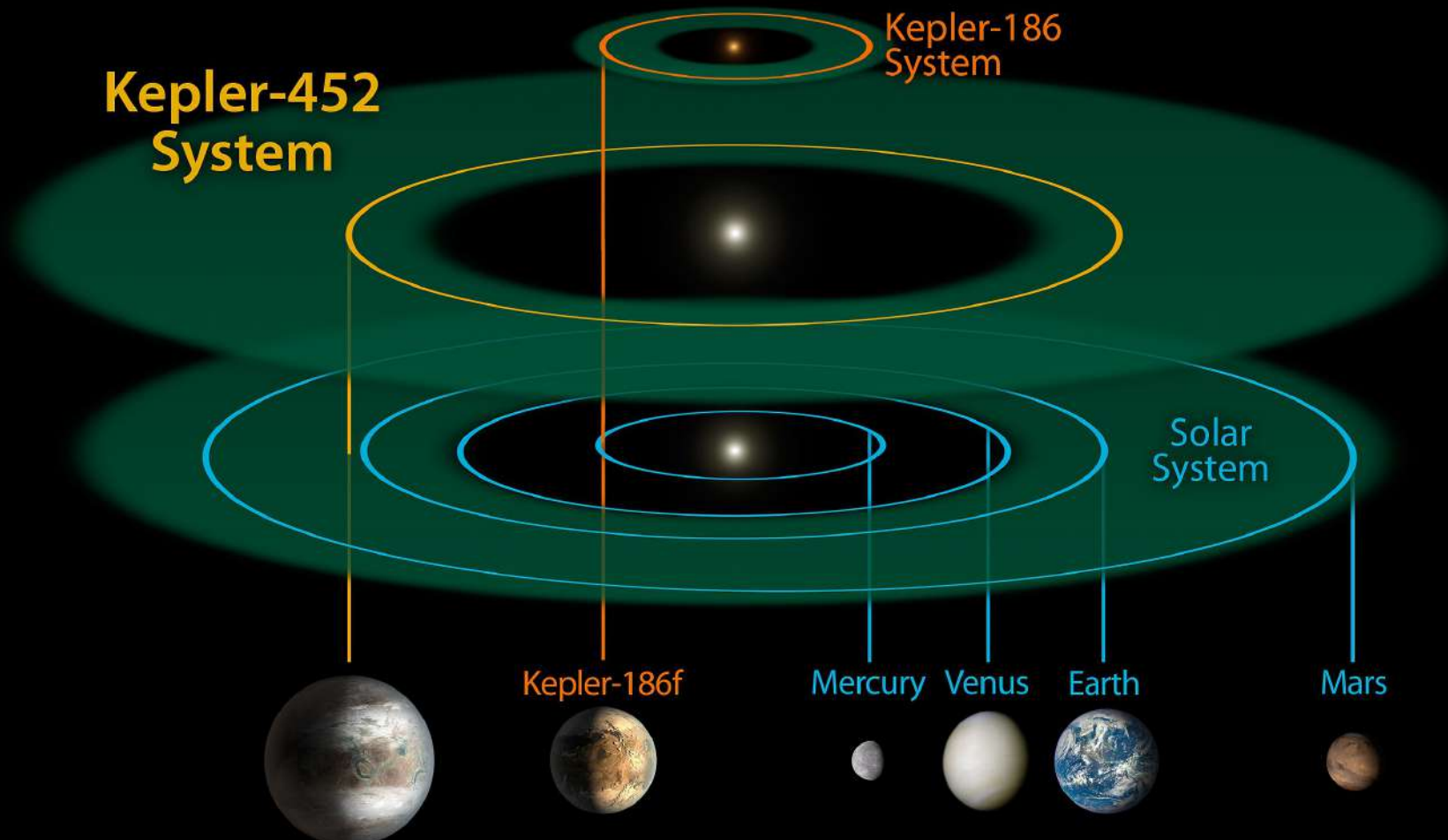
Venus

Earth

Mars

Kepler-452b

Artistic Concept

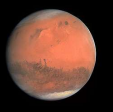




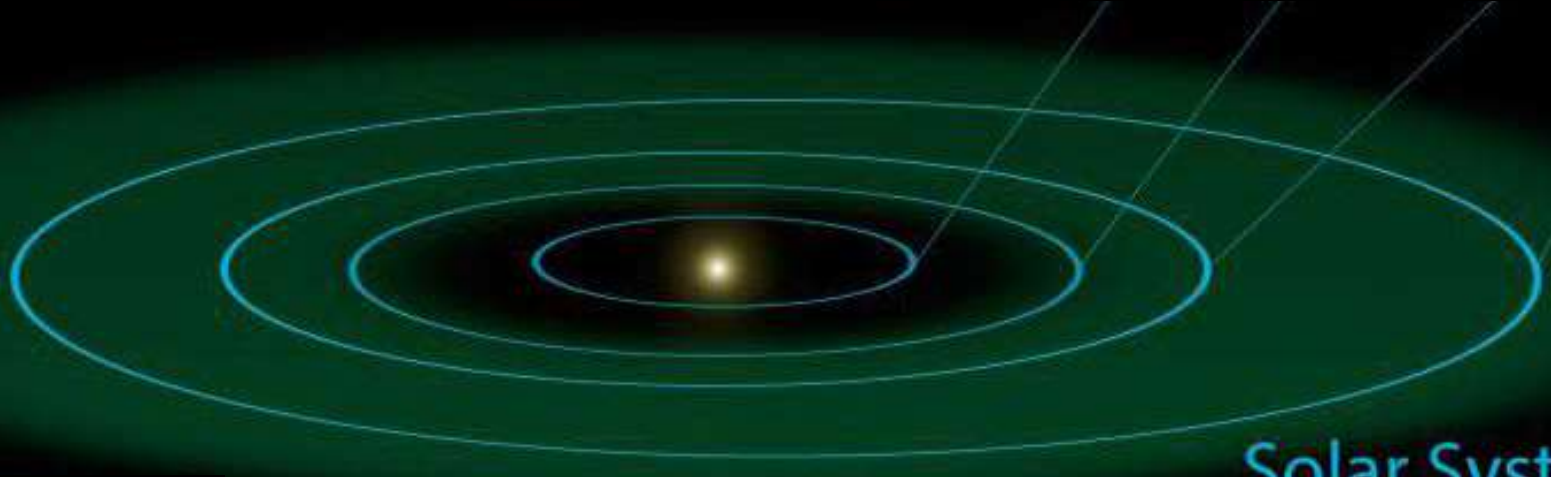
Venere



Terra



Marte



Solar System



Venere



Terra

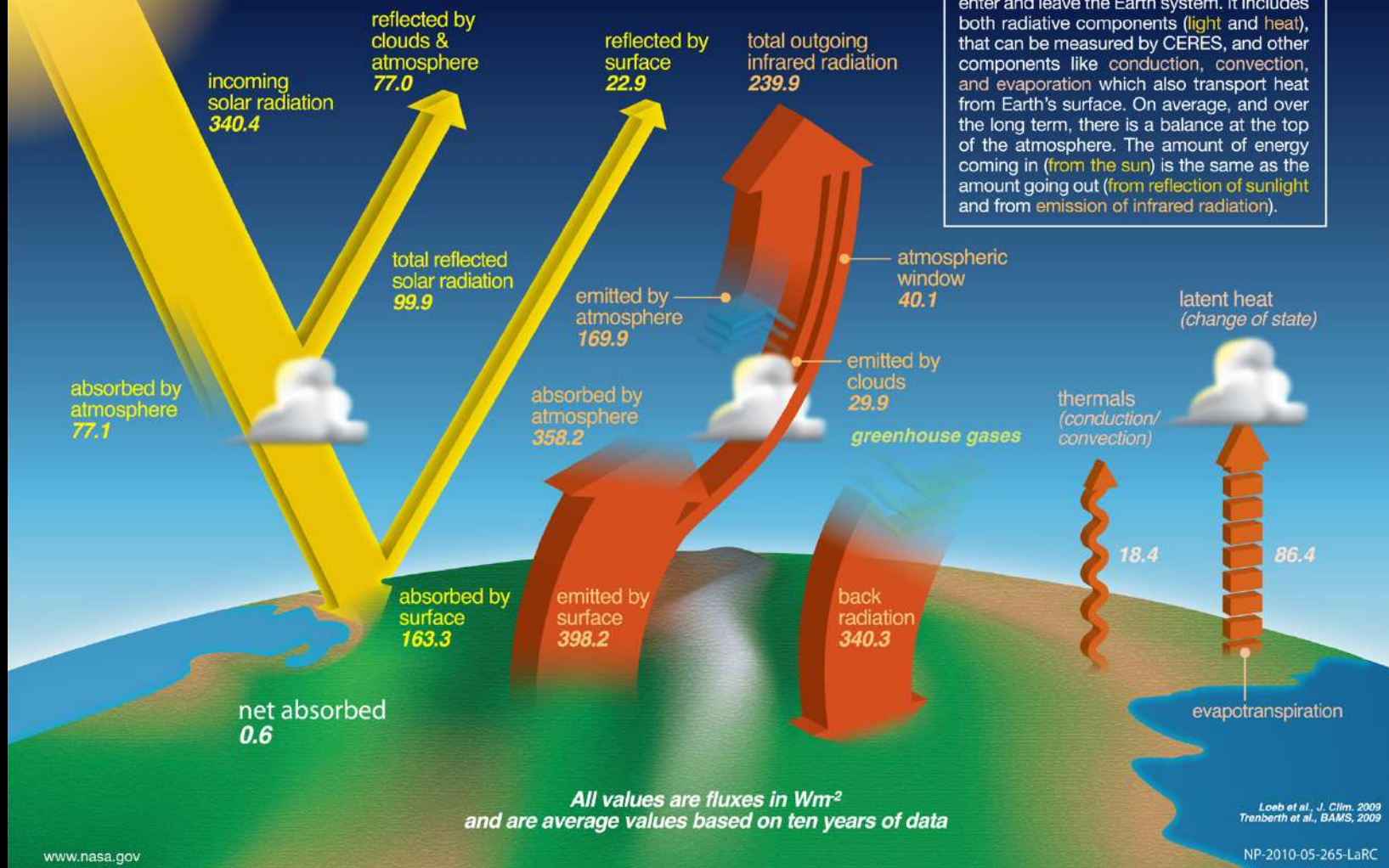


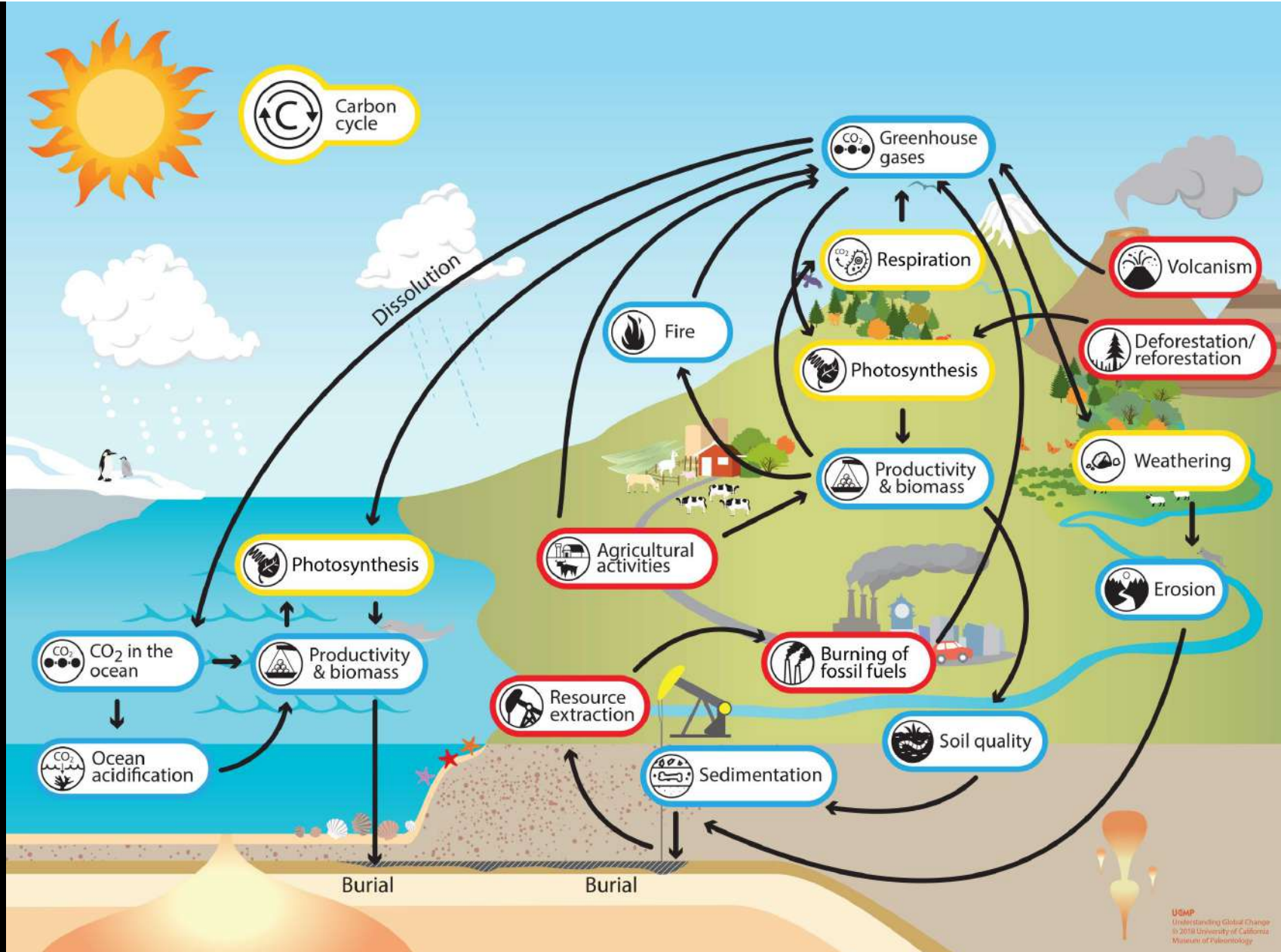
Marte

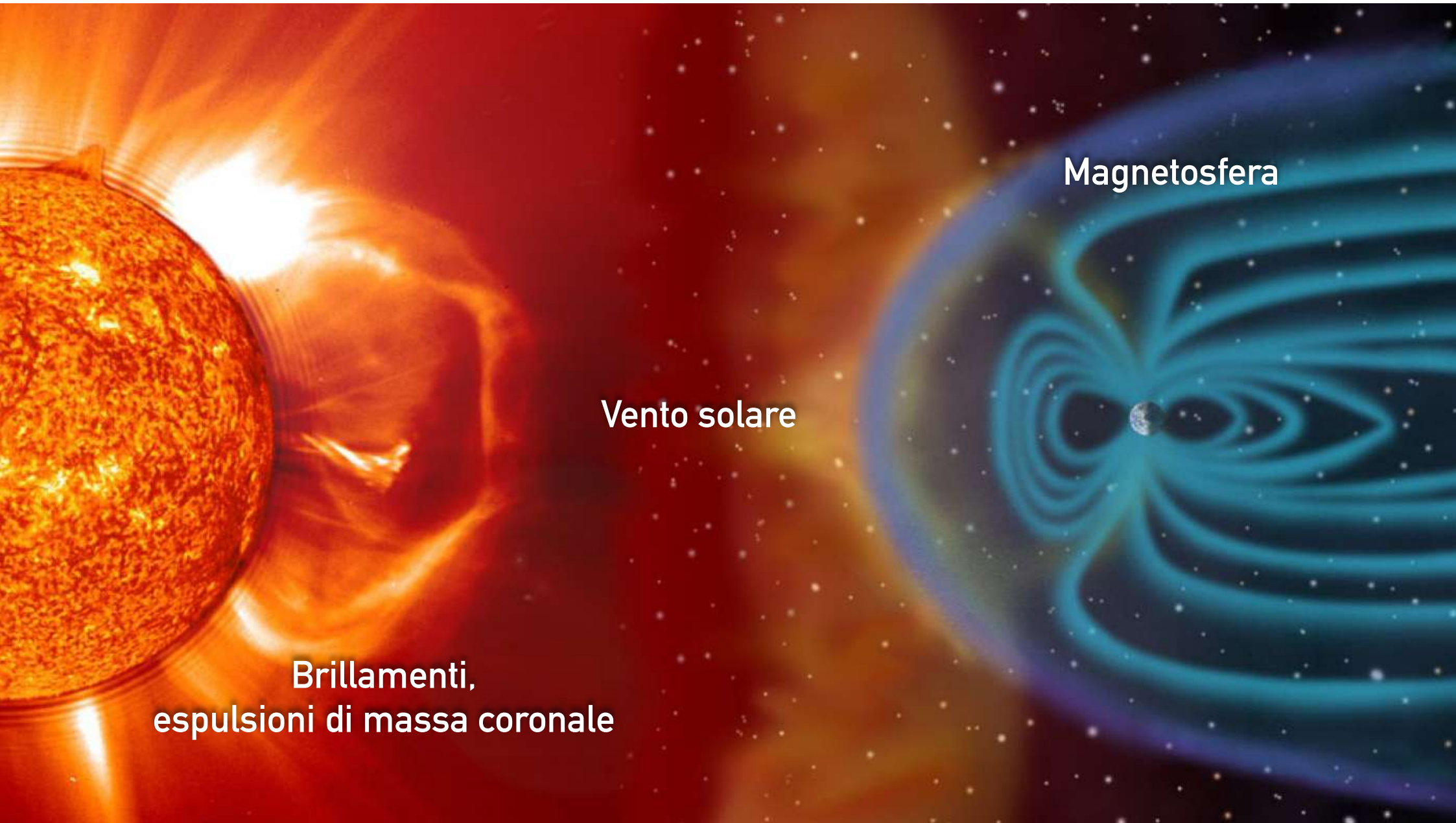


earth's energy *budget*

The Earth's energy budget describes the various kinds and amounts of energy that enter and leave the Earth system. It includes both radiative components (light and heat), that can be measured by CERES, and other components like conduction, convection, and evaporation which also transport heat from Earth's surface. On average, and over the long term, there is a balance at the top of the atmosphere. The amount of energy coming in (from the sun) is the same as the amount going out (from reflection of sunlight and from emission of infrared radiation).







Vento solare

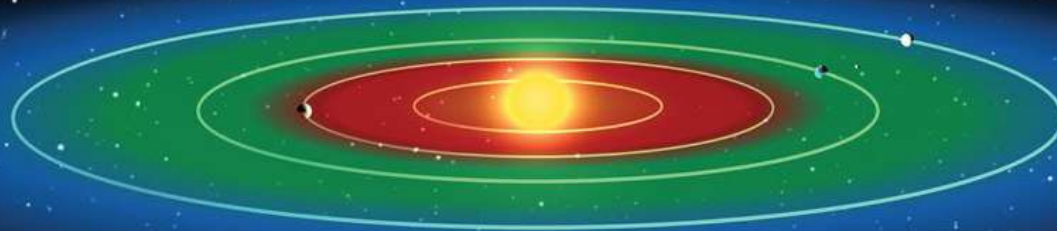
Magnetosfera

Brillamenti,
espulsioni di massa coronale

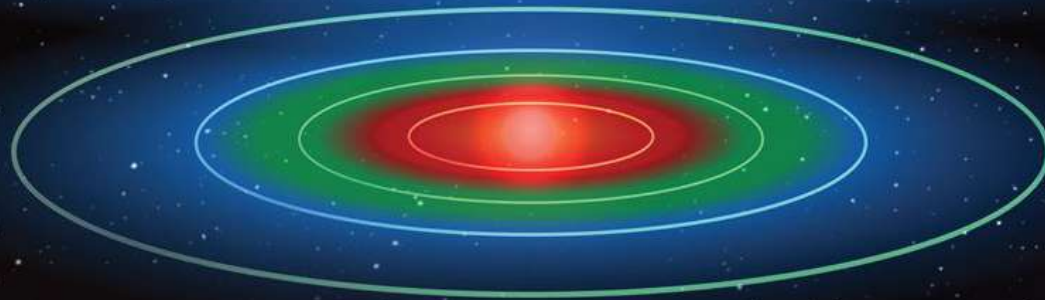
Hotter Stars

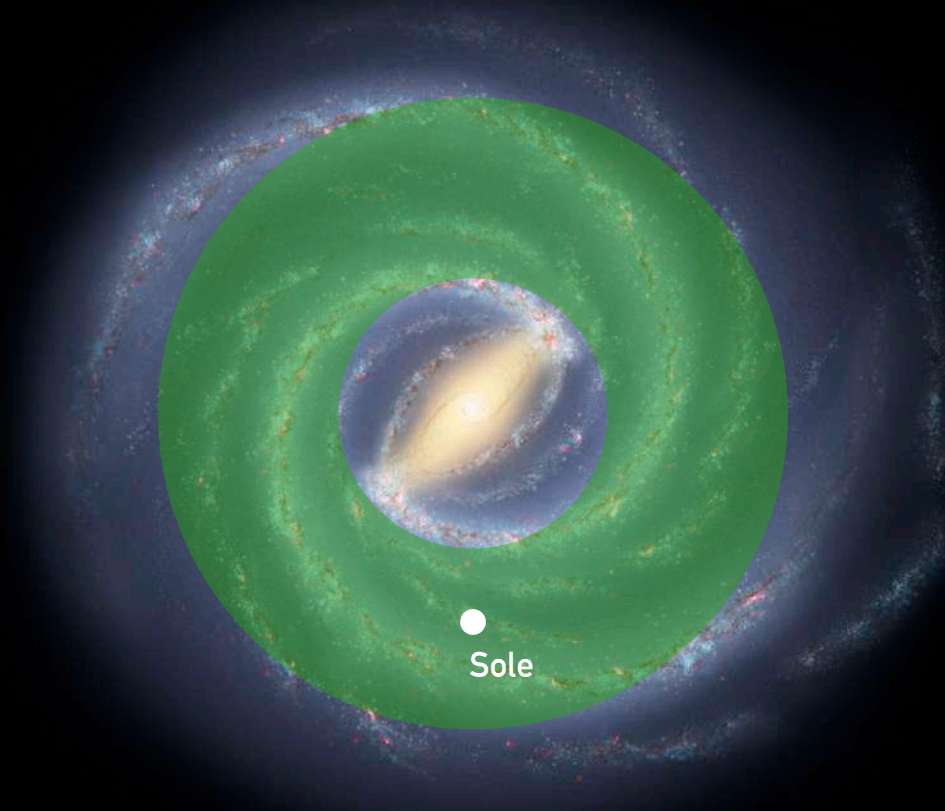


Sunlike Stars

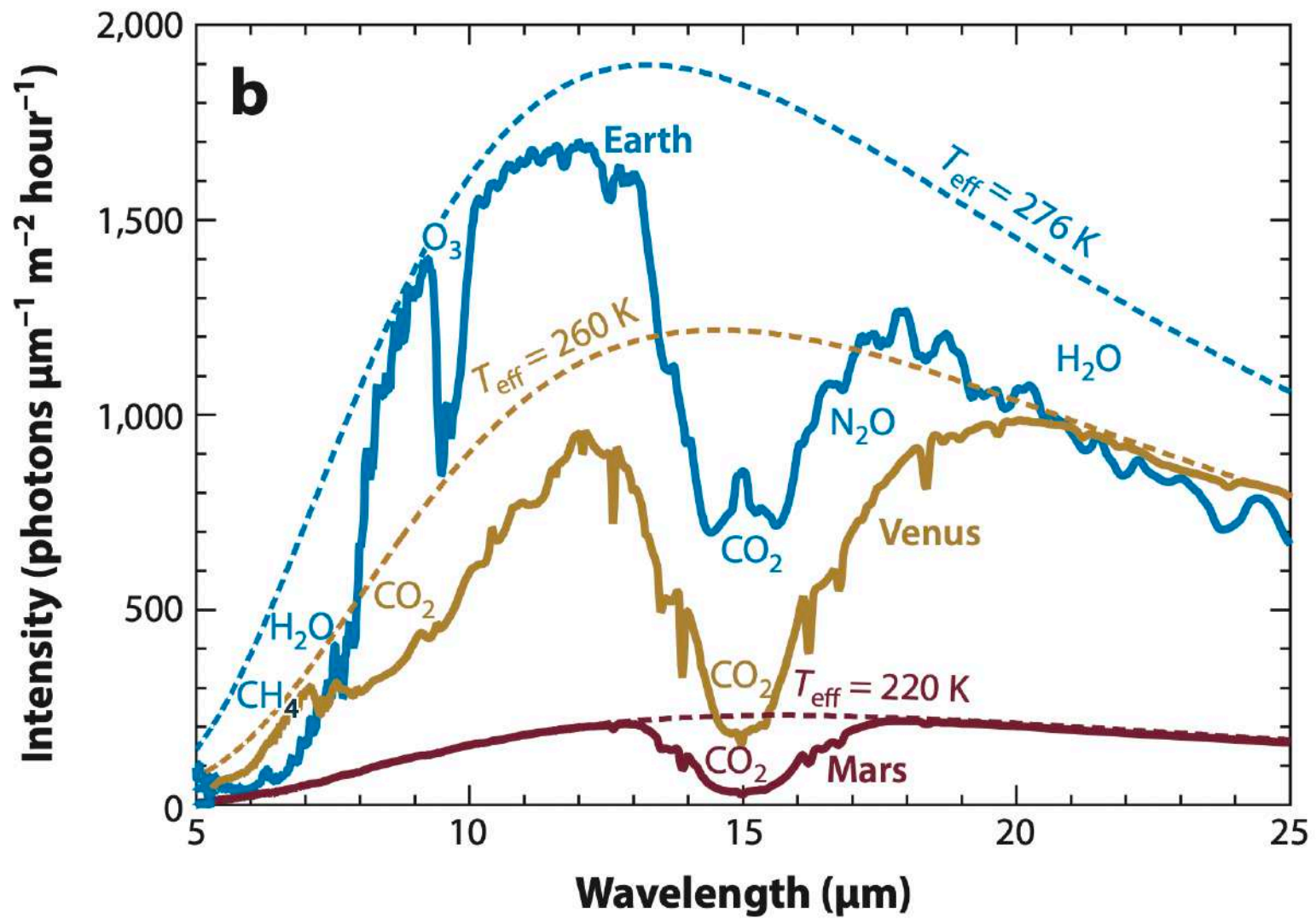


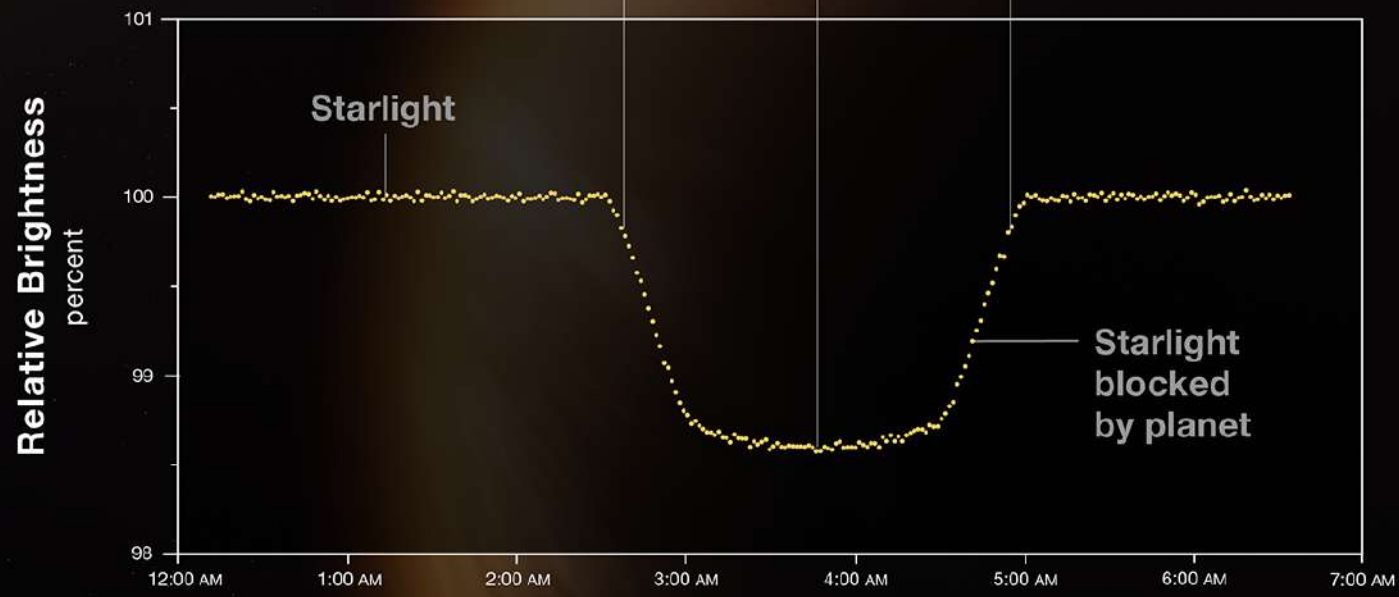
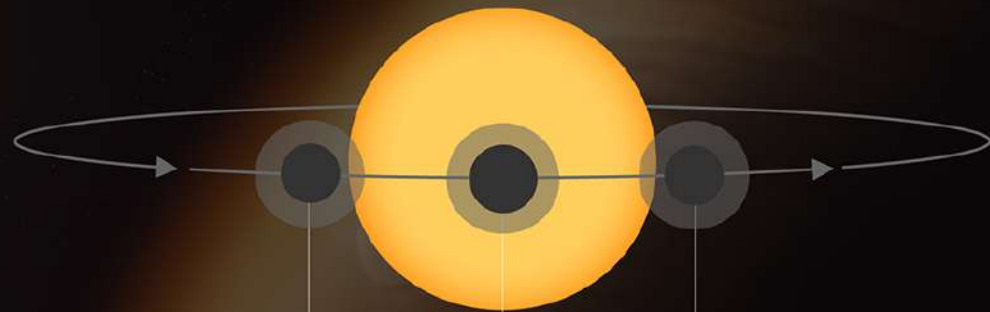
Cooler Stars





Sole





Time in Baltimore, Maryland
June 21, 2022

