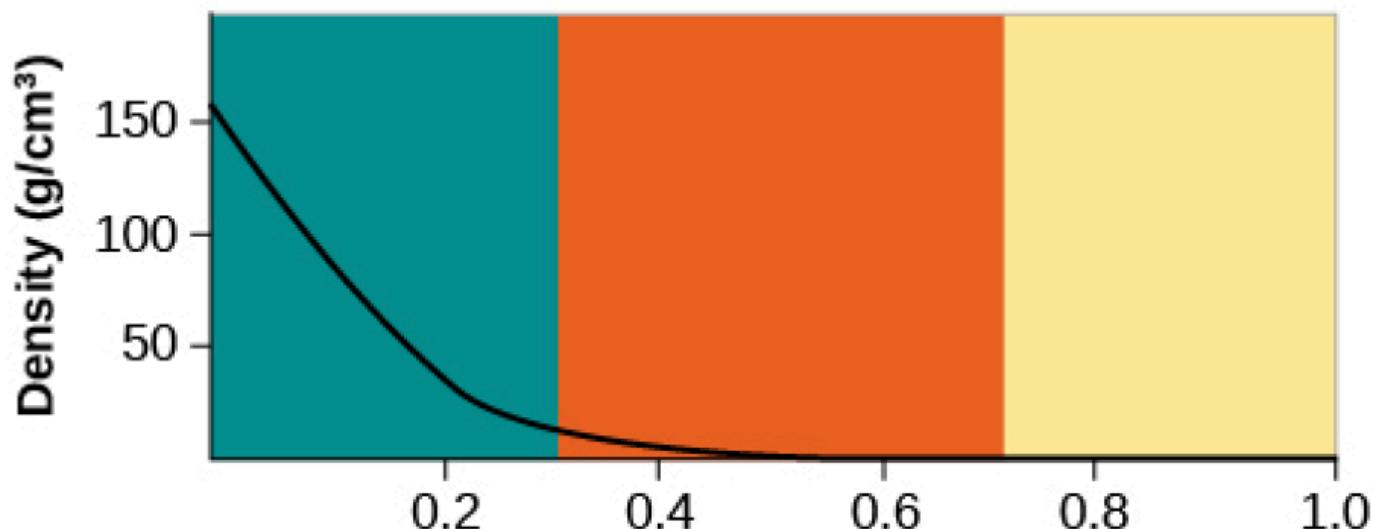
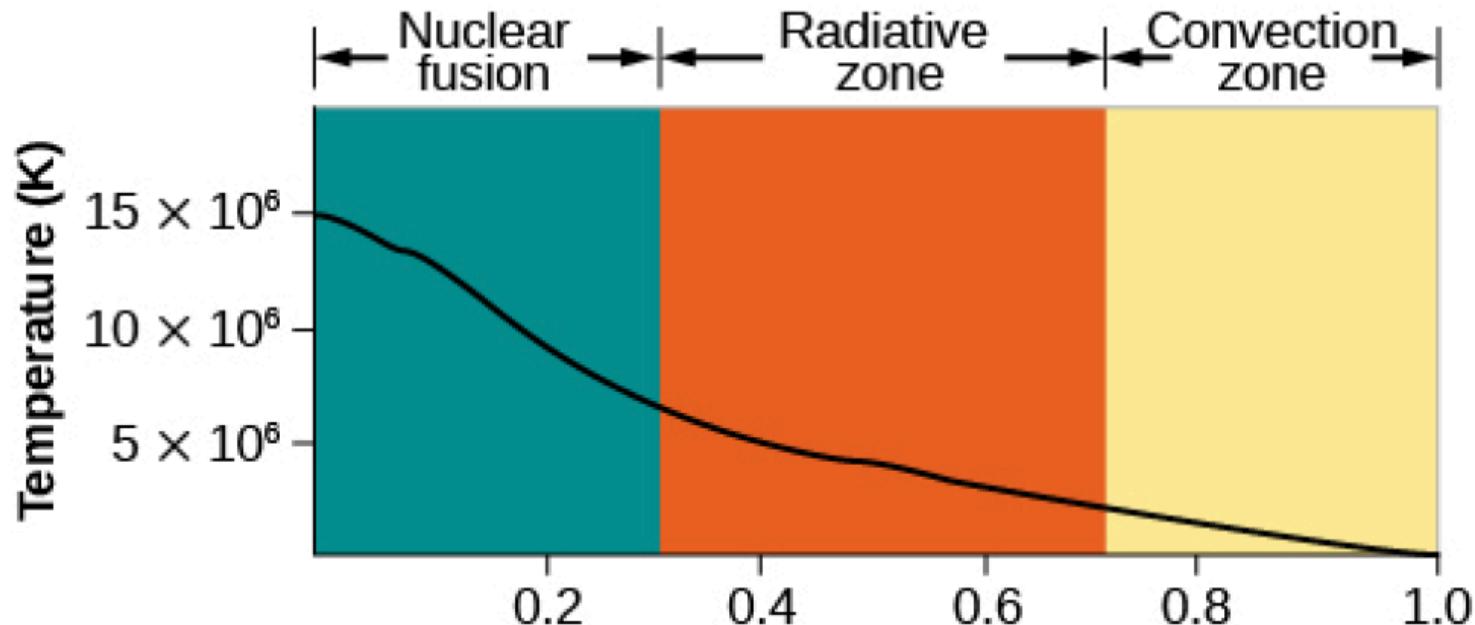
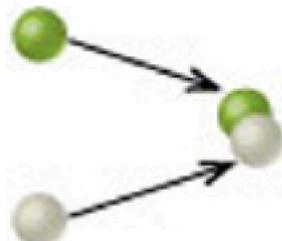


Core: very dense, 15 million K



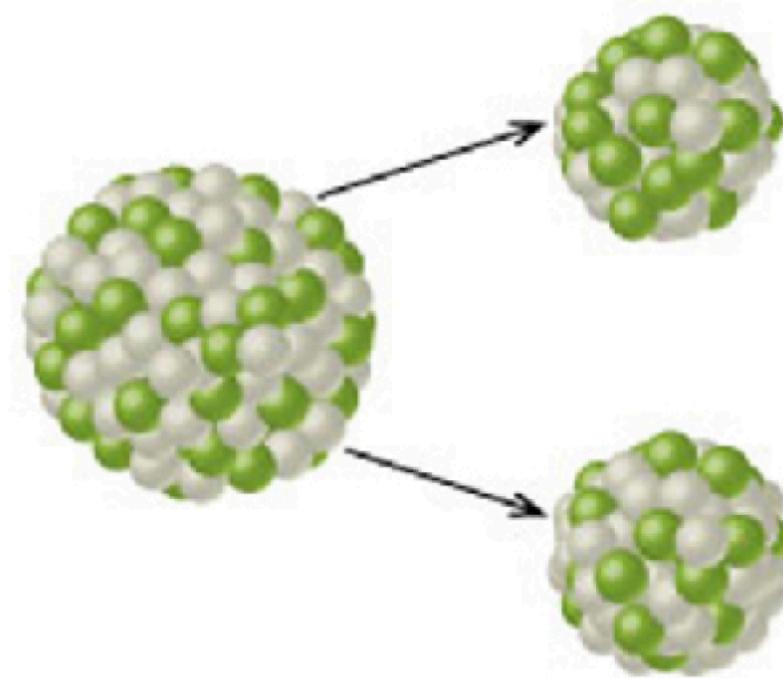
Fusion

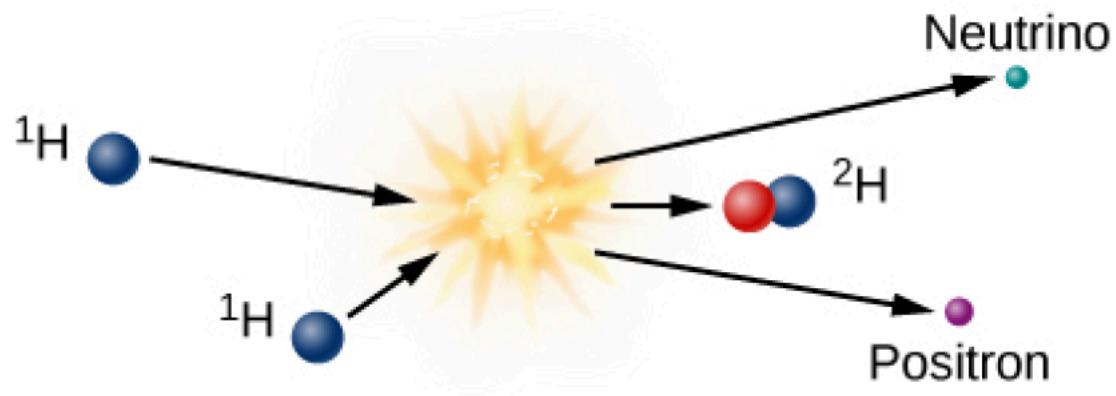
2 light => 1 heavy



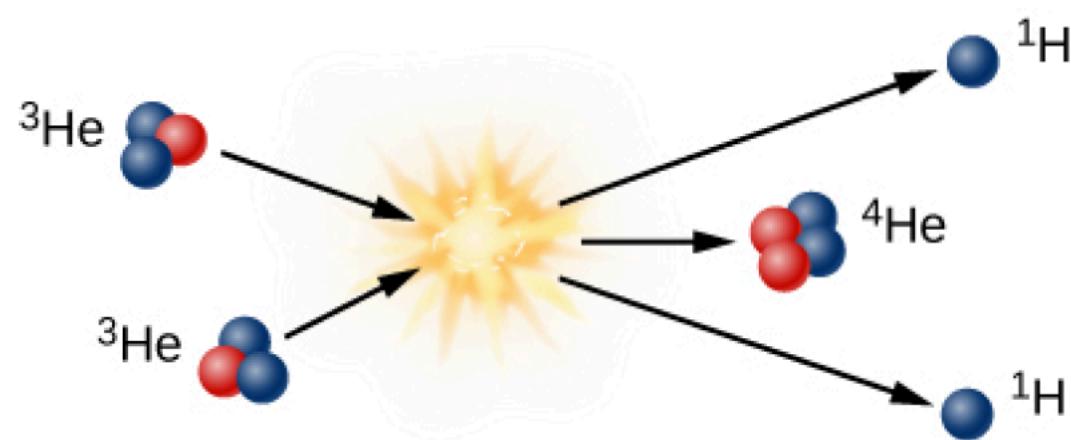
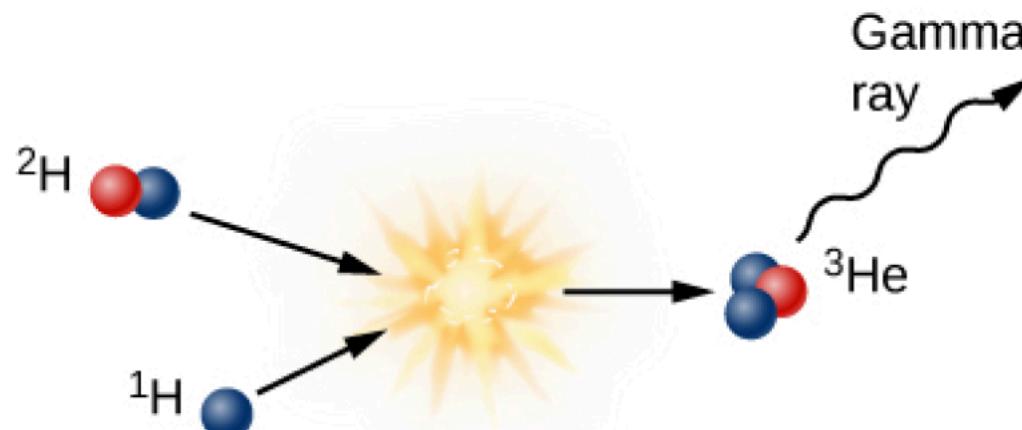
Fission

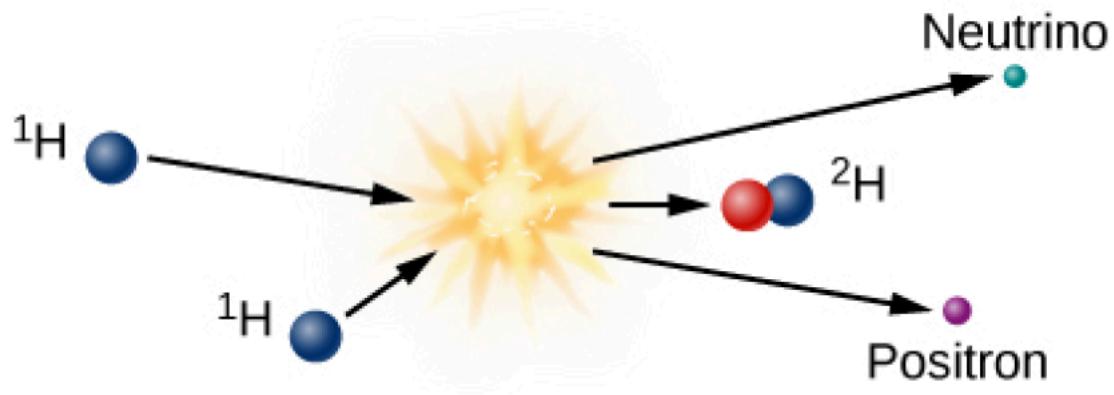
1 heavy => 2 light





Fusion at core
4 Hydrogen atoms
turns into 1 He atom





Fusion at core

4 Hydrogen atoms
turns into 1 He atom

Atomic weights

4 H: 4.032

1 He: 4.003

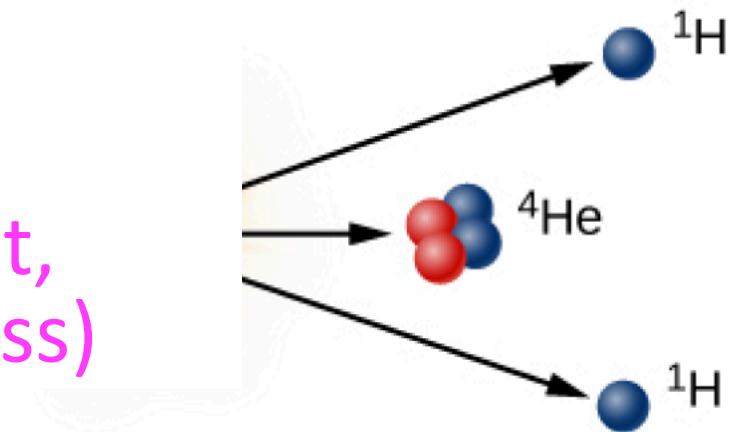
Lose 0.7% of the mass:
it turns into energy!

na

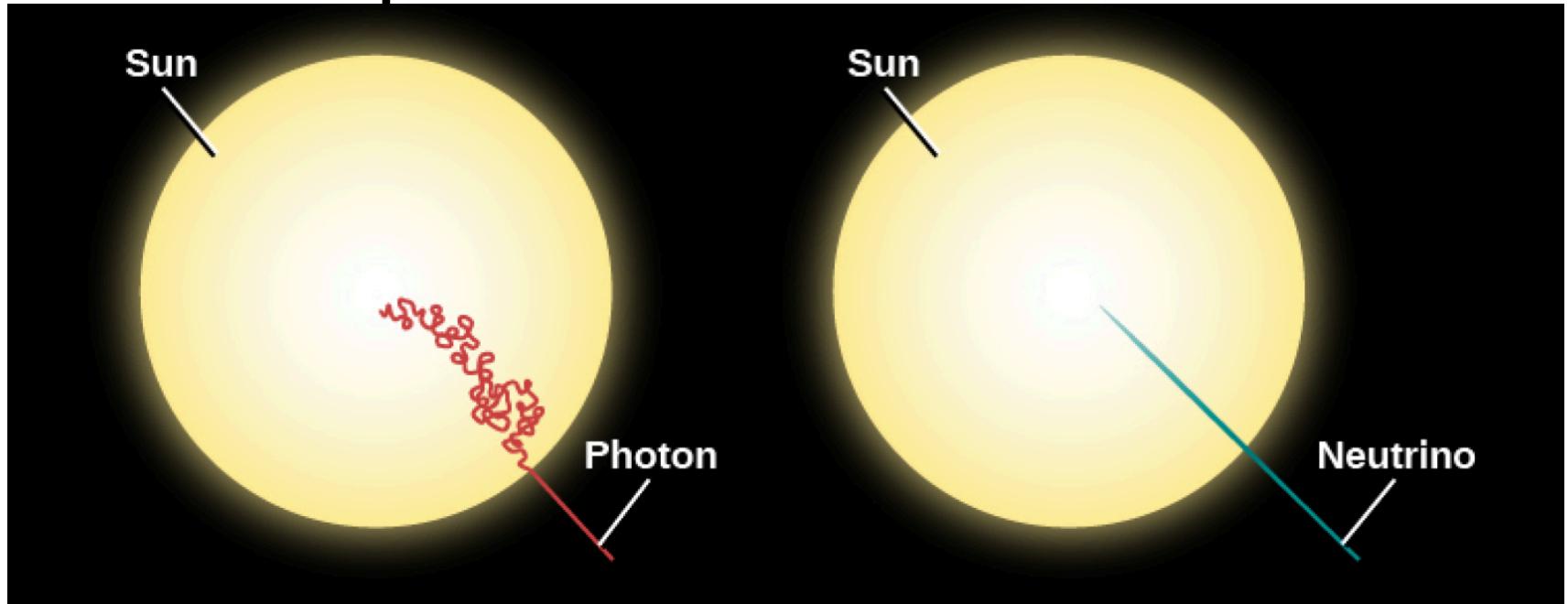


$$E=mc^2$$

(c=speed of light,
 E =energy, m =mass)



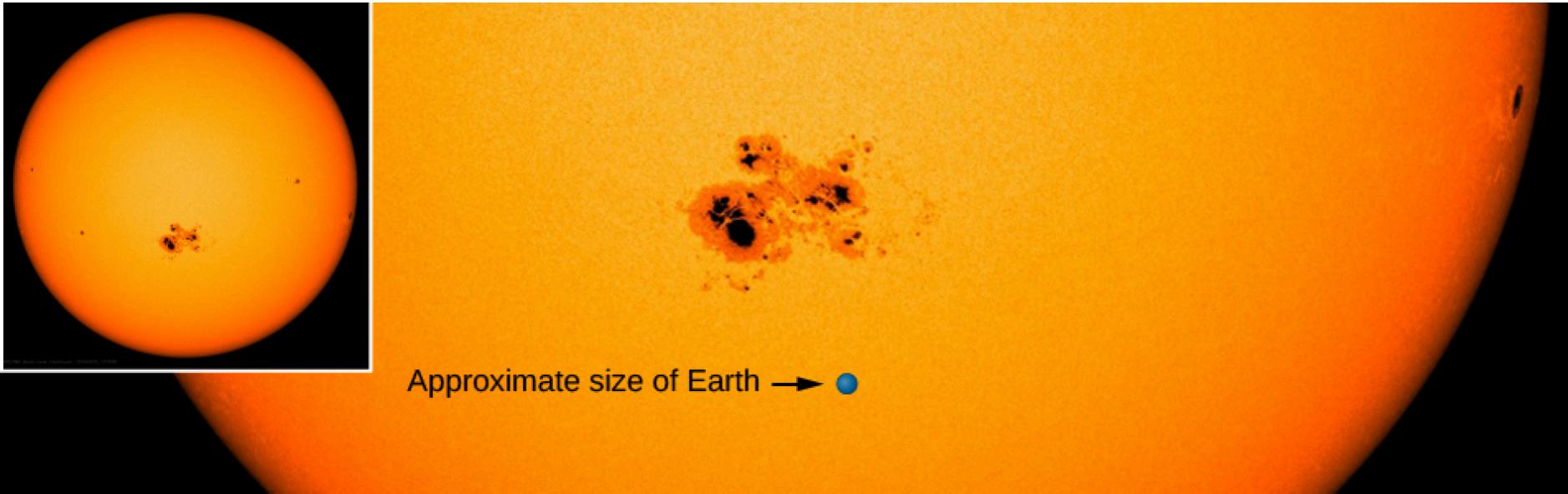
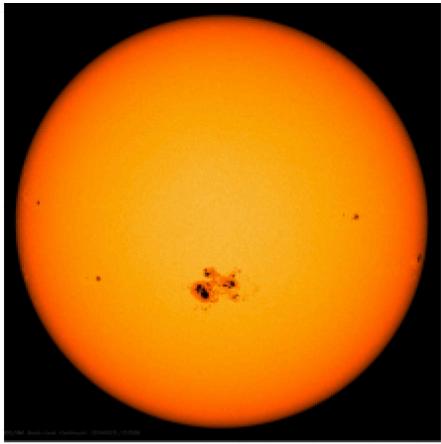
How long does it take energy to escape from the sun's core?



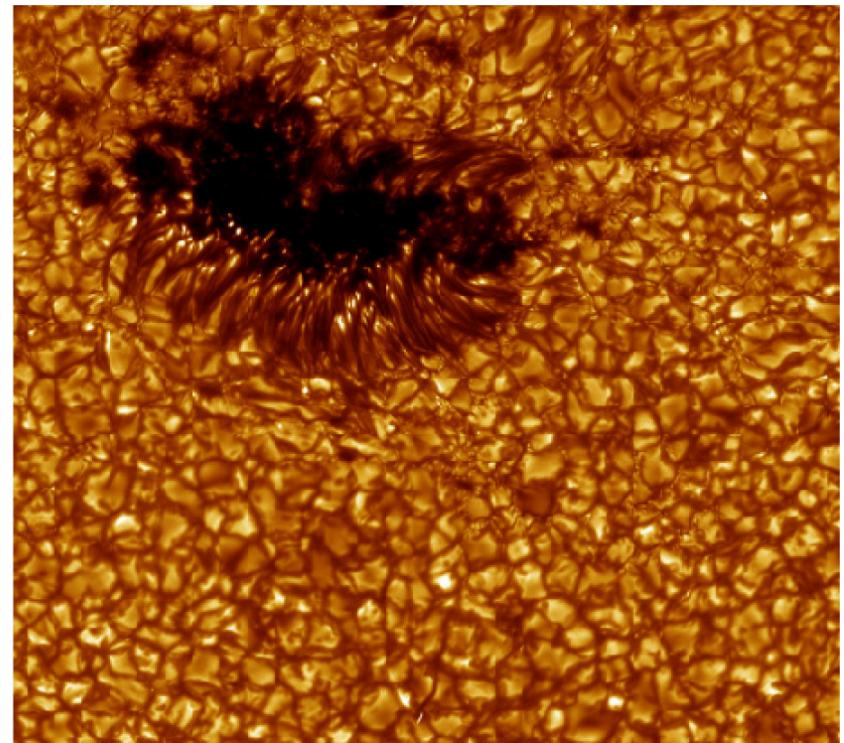
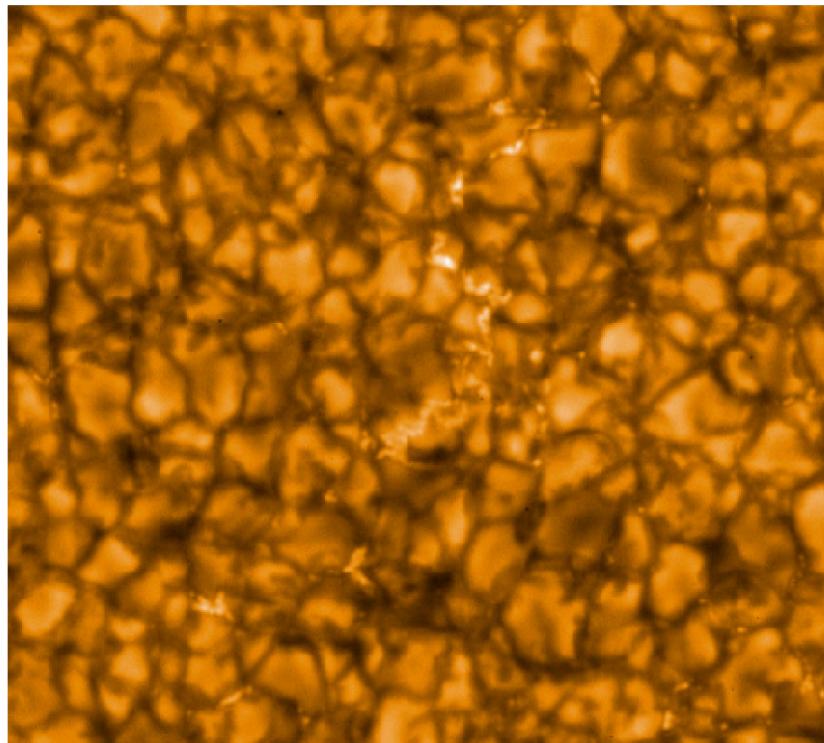
Most energy: 1 million years!

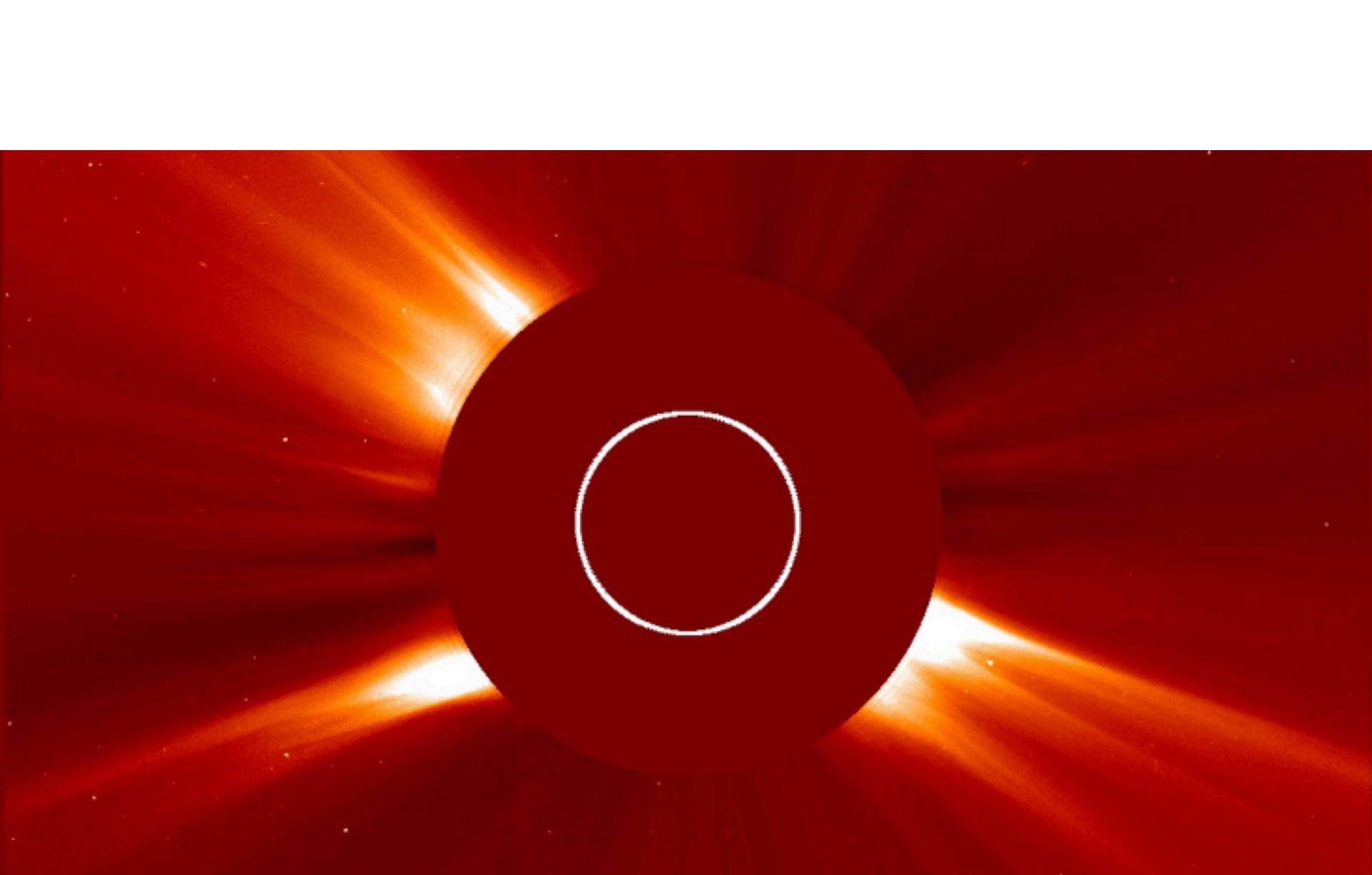
Neutrinos: do not interact with matter, so
“immediate”

Solar neutrino problem: recent Nobel Prize



Approximate size of Earth → ●

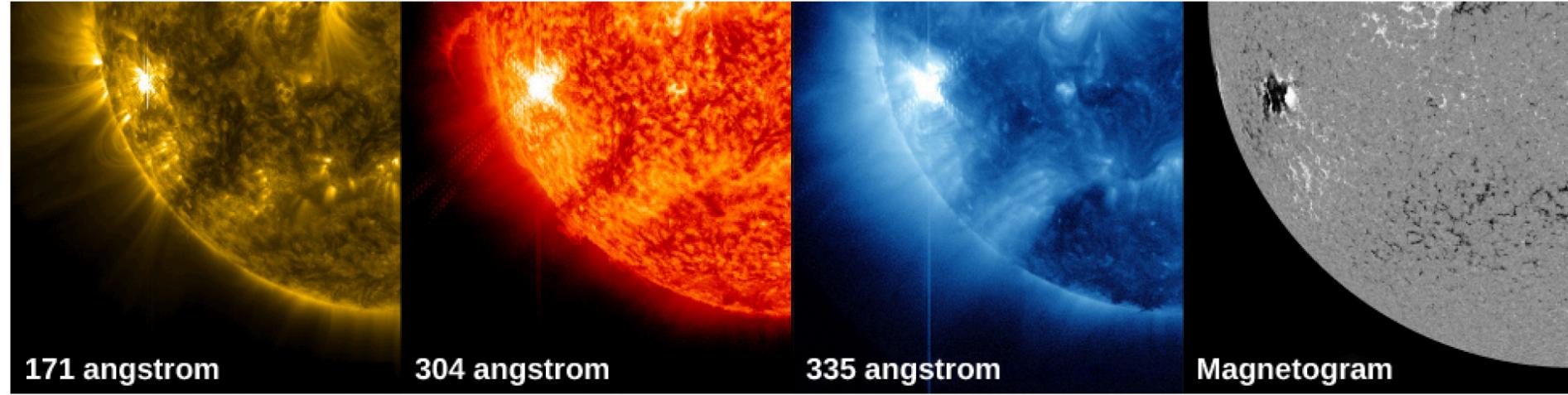






"WHITE SATIN"

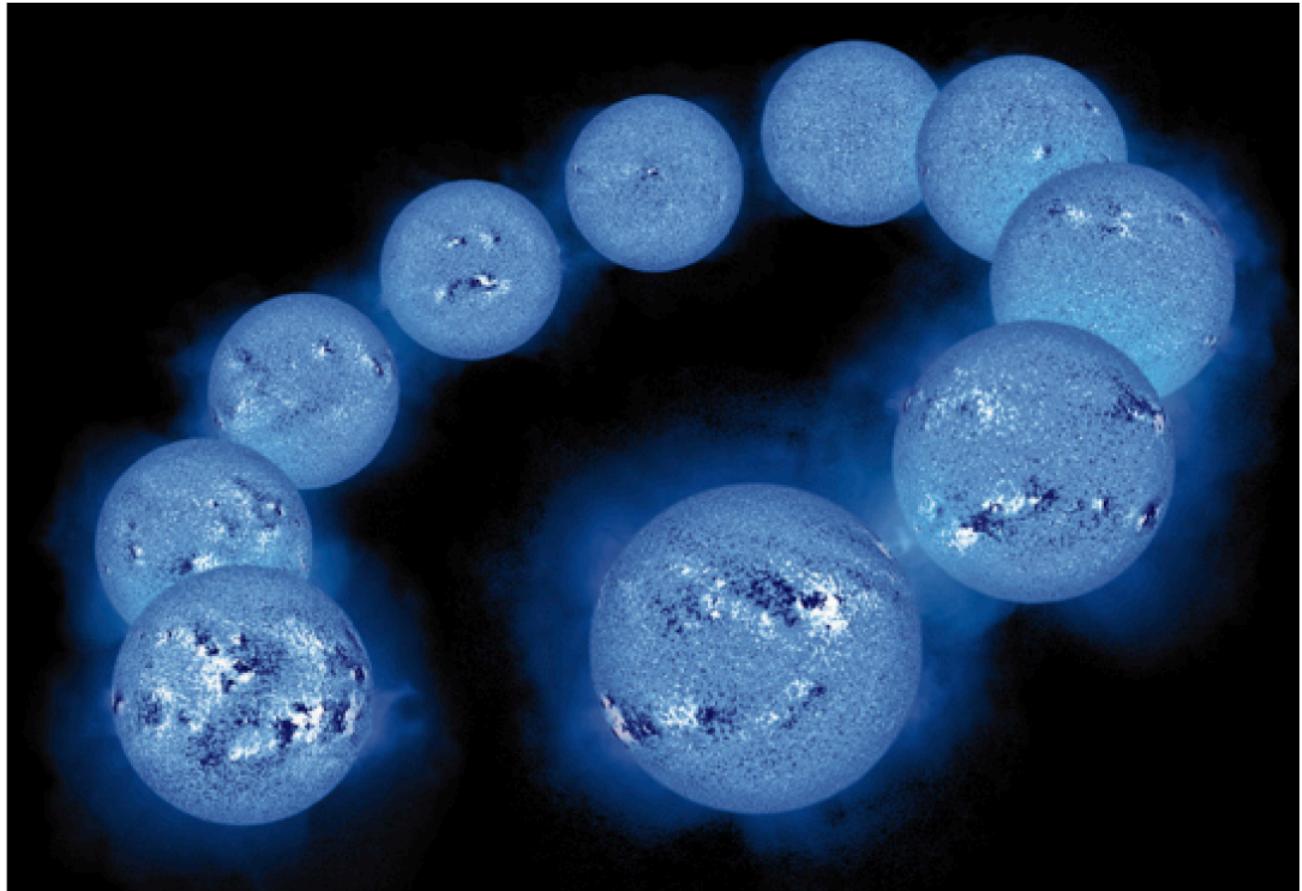
© TODD SALAT
AURORAHUNTER.COM



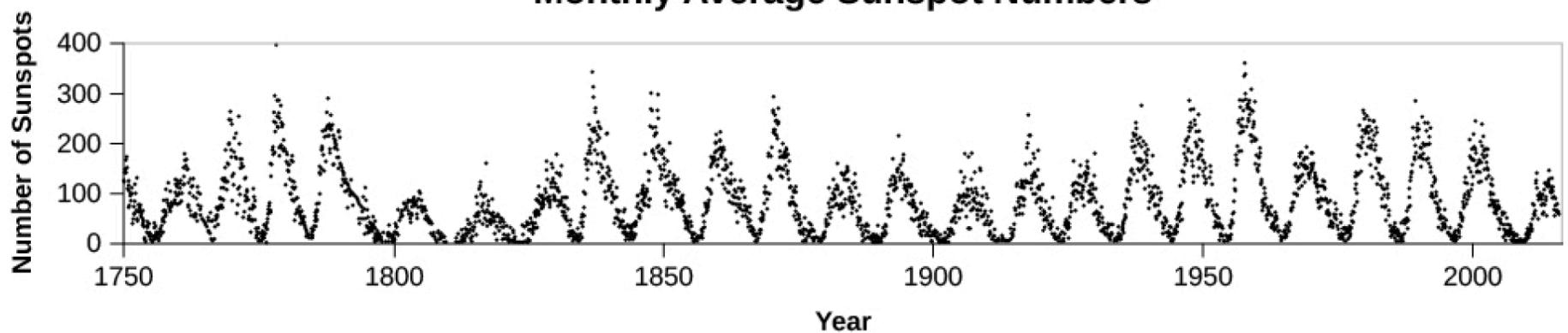
Sun: looks different at different wavelengths:
magnetic activity!

Flares, coronal mass ejections, corona

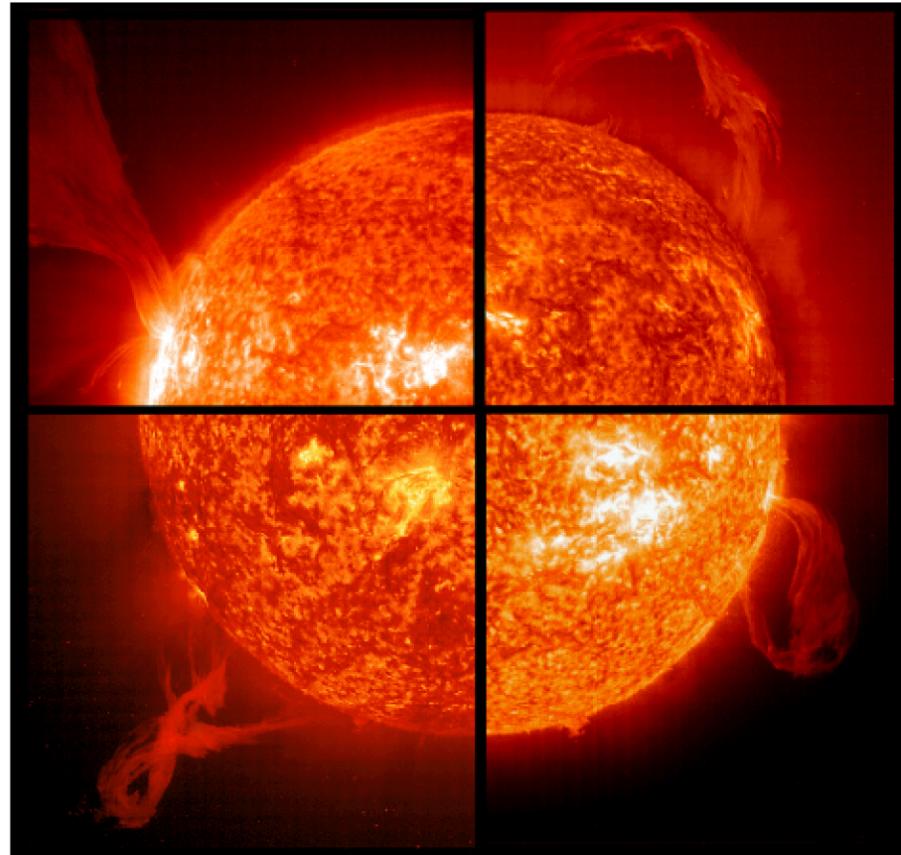
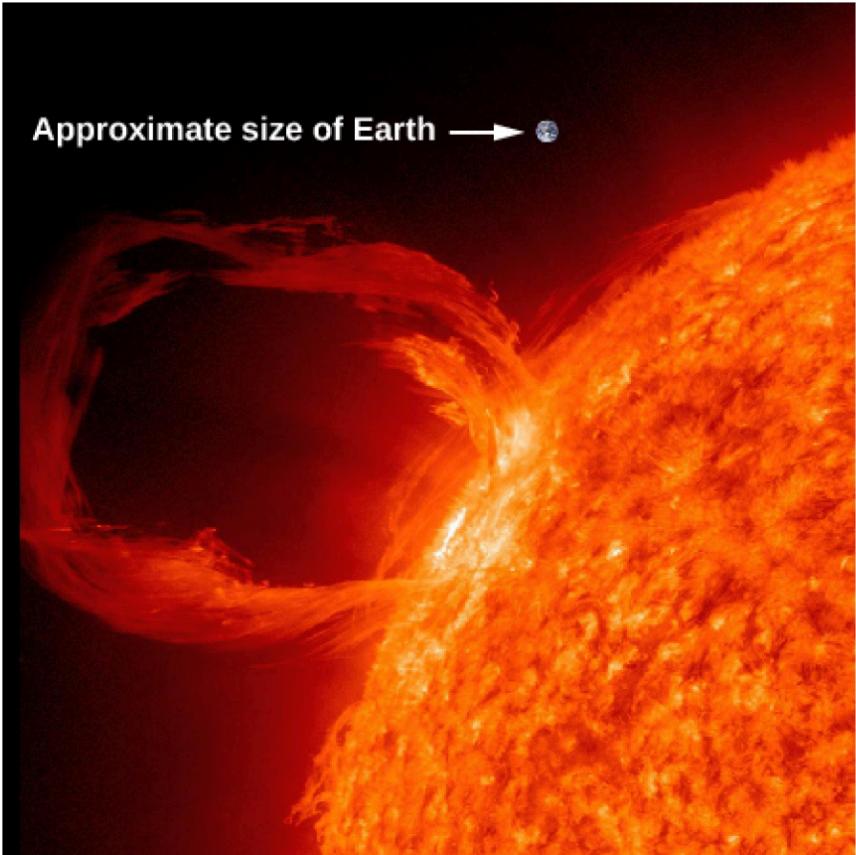
11 year
magnetic cycles

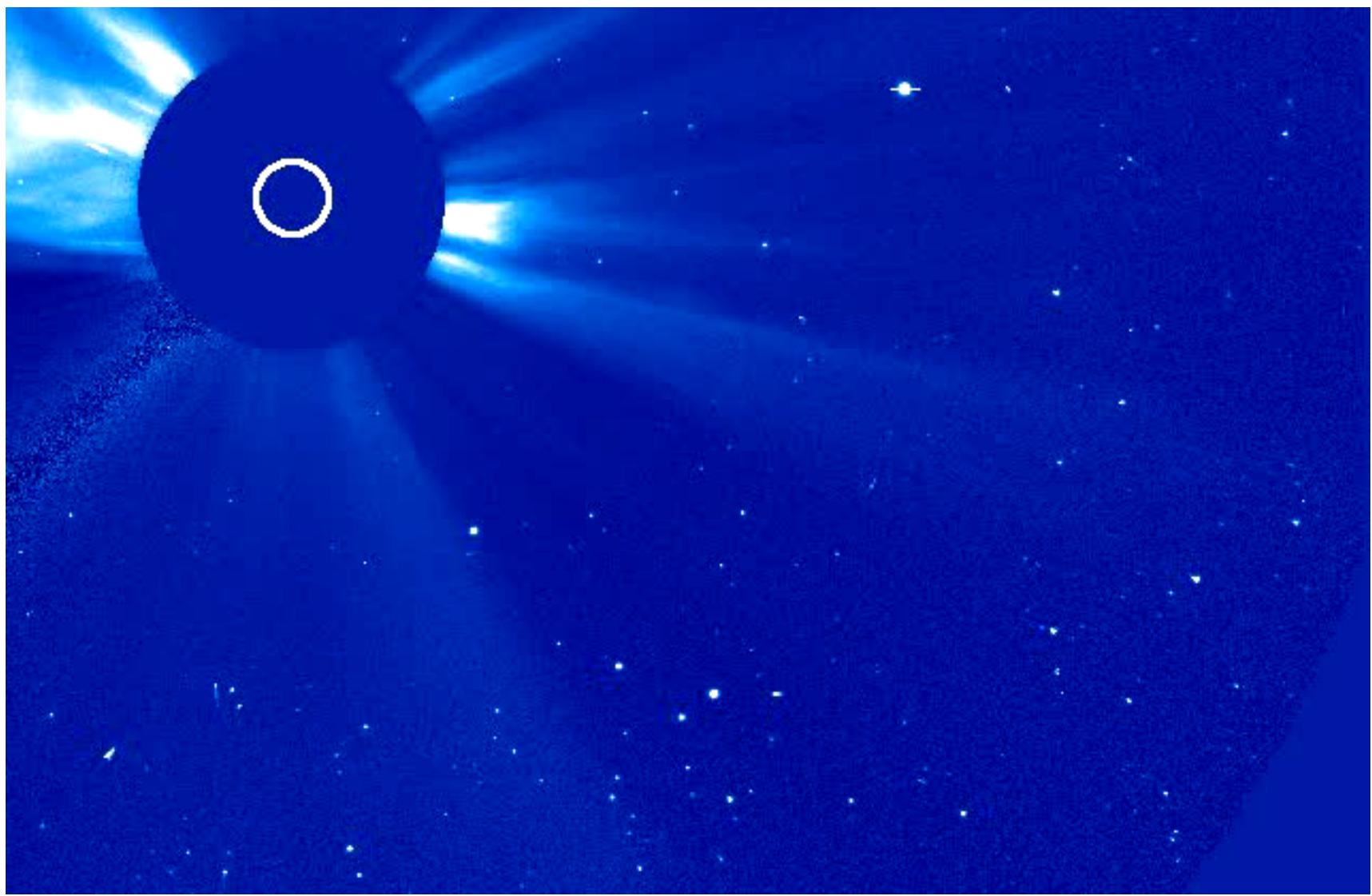


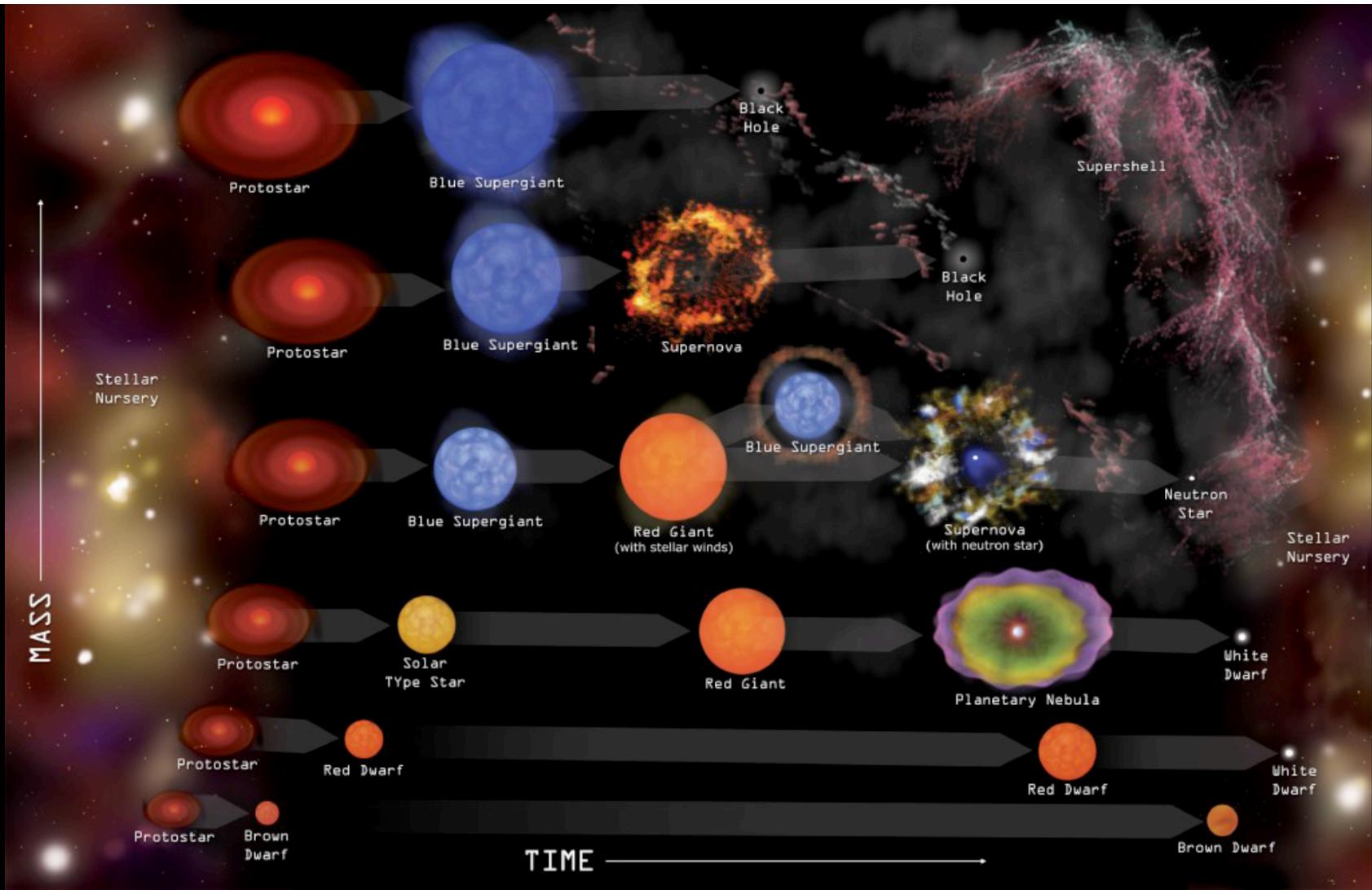
Monthly Average Sunspot Numbers



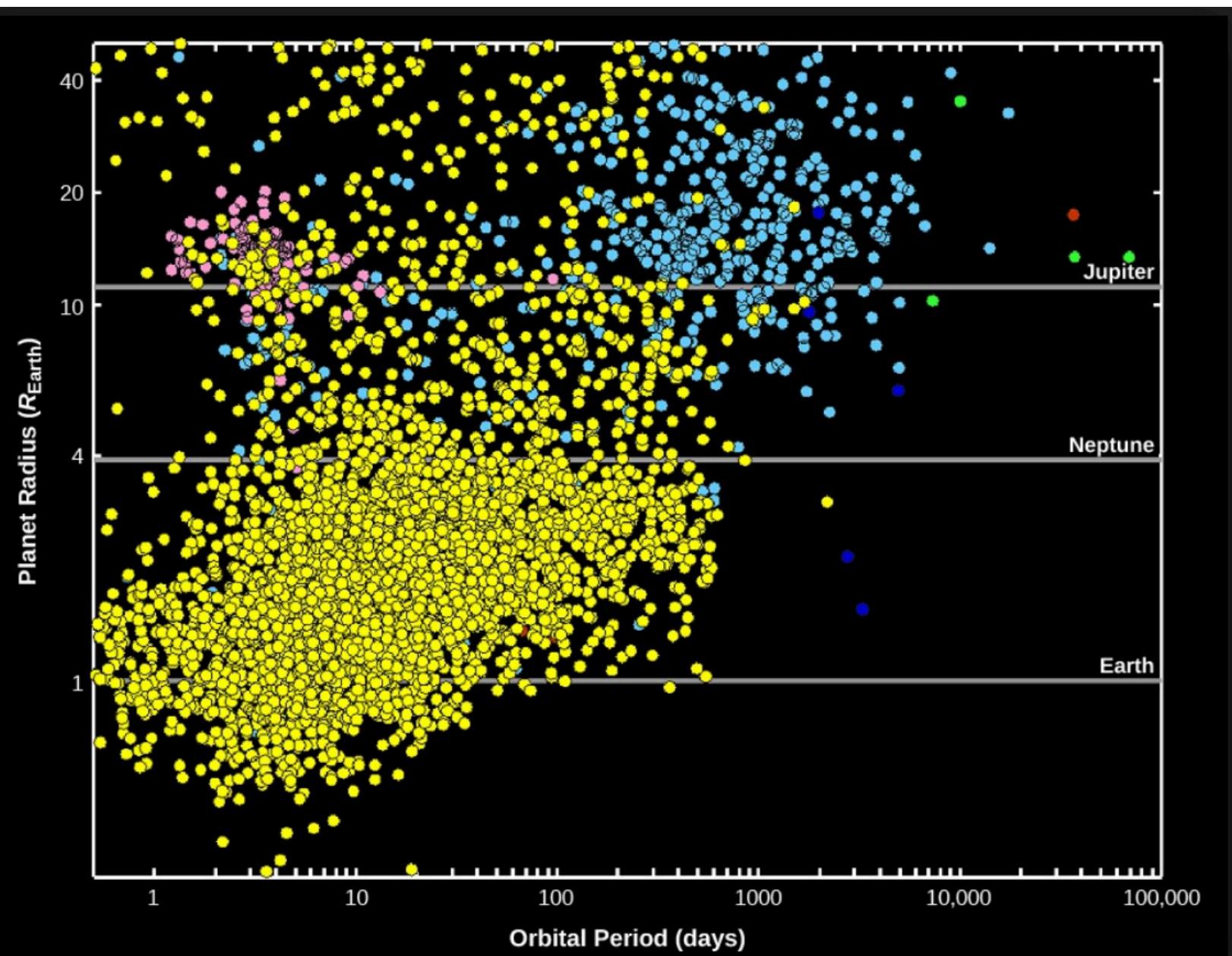
Approximate size of Earth → ☽







EXOPLANETS!



EXOPLANETS!

