

Introducing...

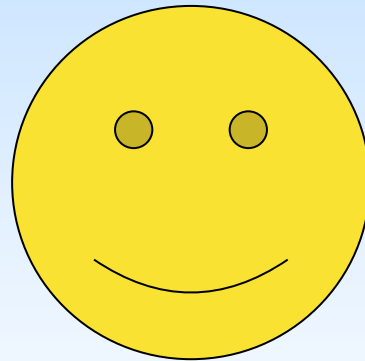
The Sun!!

Mitzi Adams

Solar Astrophysicist

NASA/MSFC ST13

What is the Sun??



What is the Sun??

It's a STAR!!



What do we get from the
Sun??

What do we get from the Sun??

- Light!!

What do we get from the Sun??

- Light!!
- Heat!!

What do we get from the Sun??

- Light!!
- Heat!!
- Seasons!!

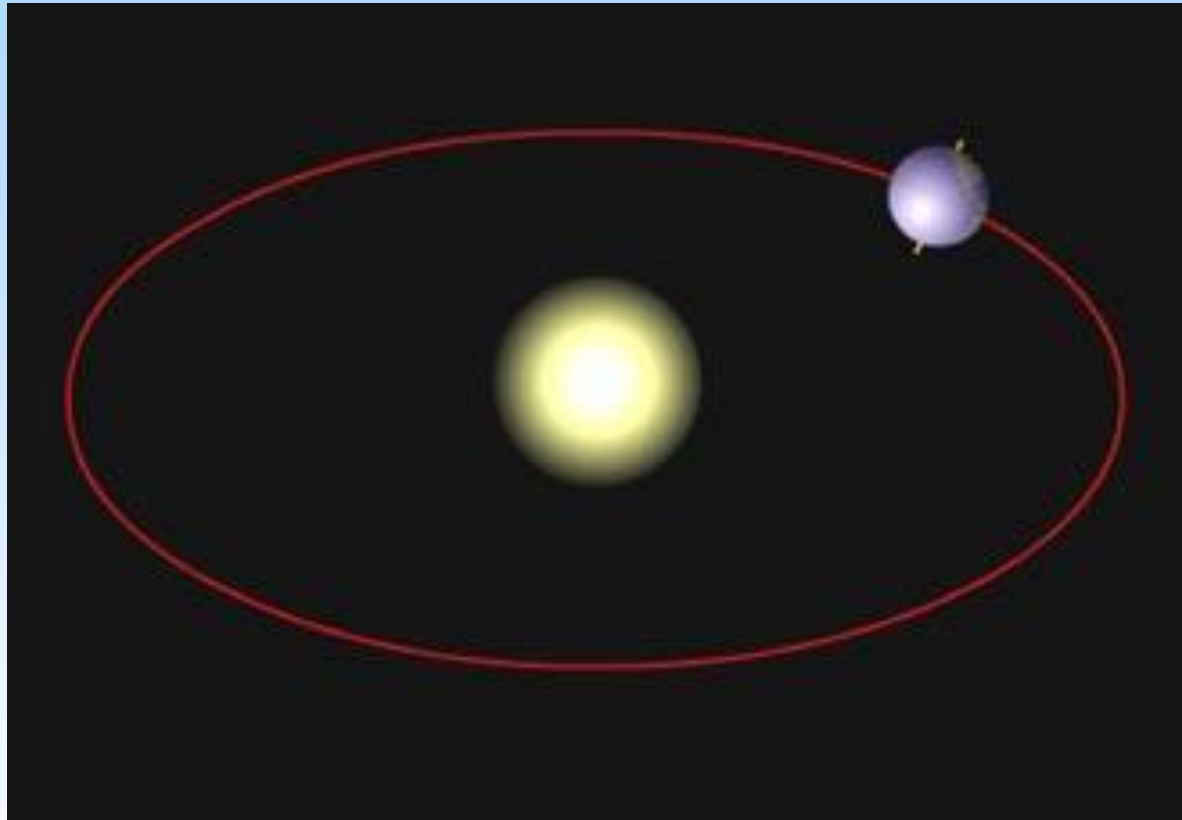


Image above: It takes the Earth one year to go around the sun. Credit: NASA

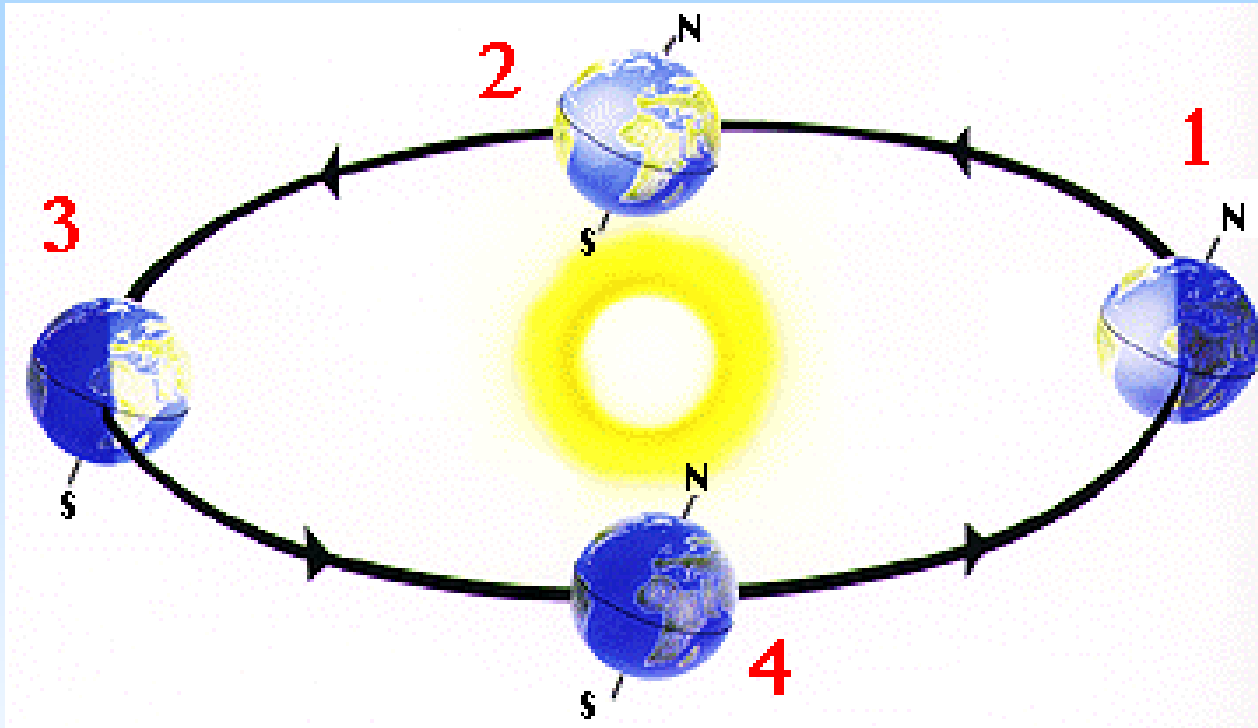
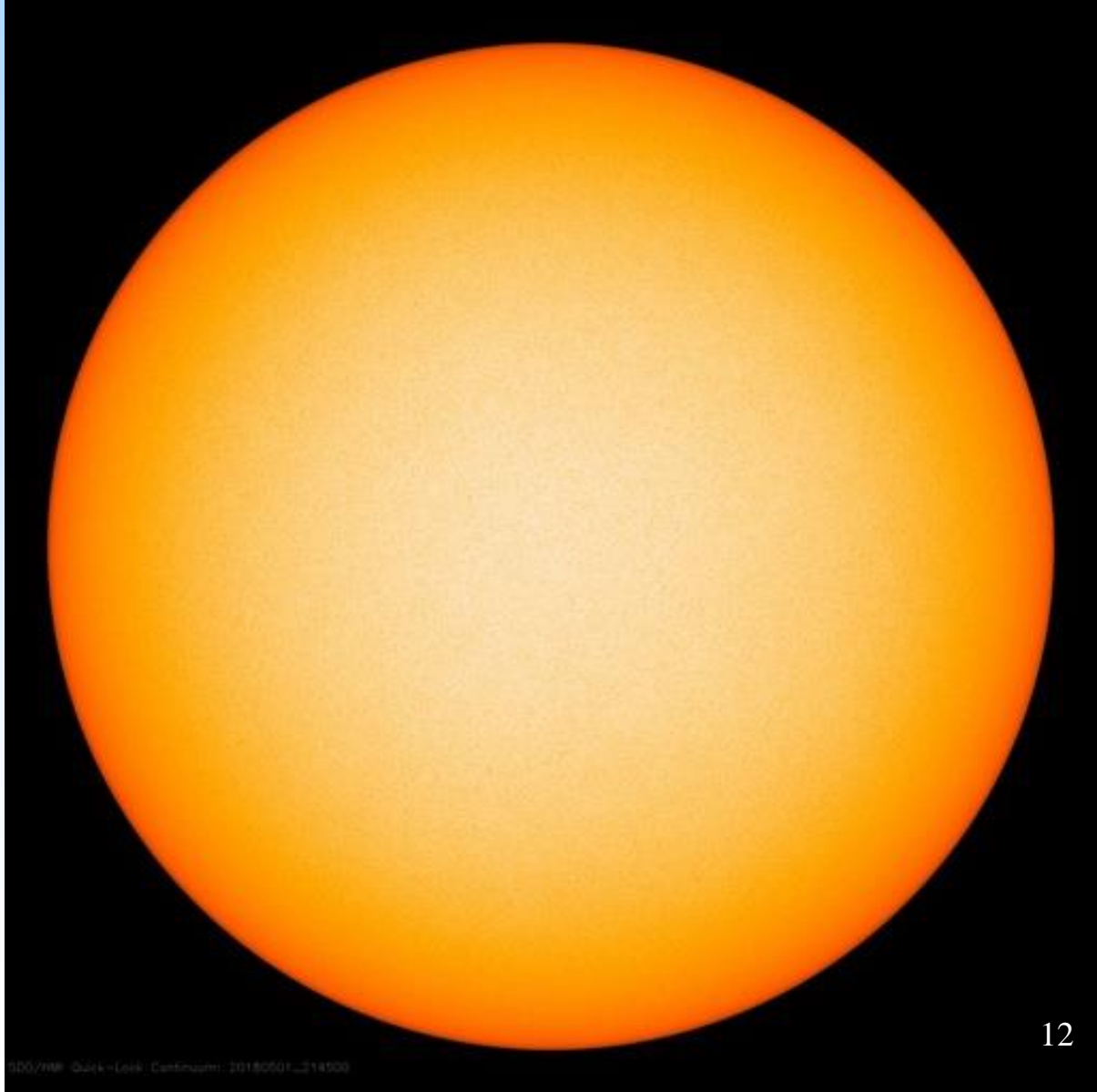
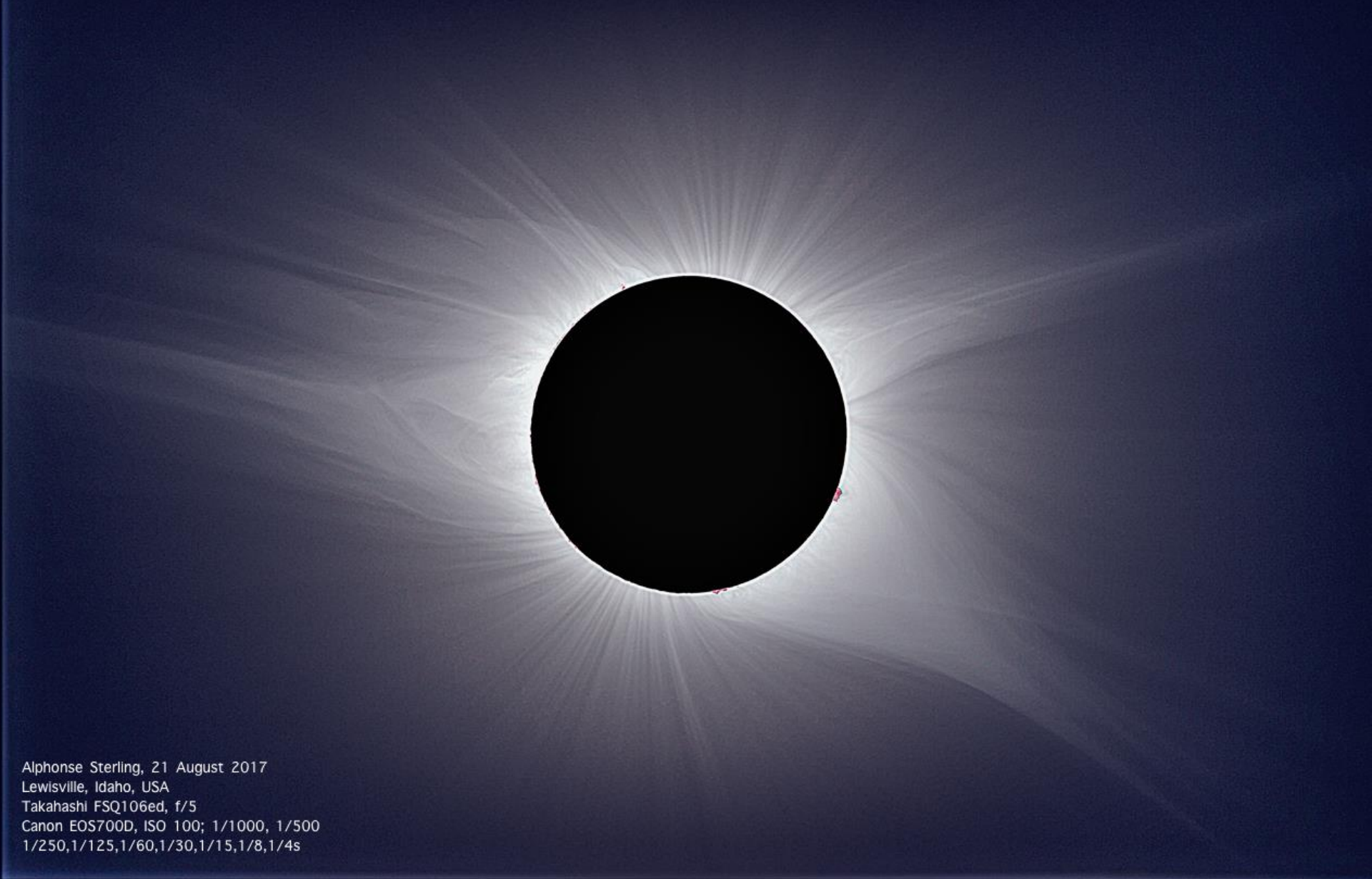


Image above: The tilt of Earth allows sunlight to fall on Earth with different intensities. Credit: NASA/Starchild

**NEVER Look at the Sun
with
Your Bare Eyes!!**



The Sun has an atmosphere!



Alphonse Sterling, 21 August 2017
Lewisville, Idaho, USA
Takahashi FSQ106ed, f/5
Canon EOS700D, ISO 100; 1/1000, 1/500
1/250, 1/125, 1/60, 1/30, 1/15, 1/8, 1/4s

Corona - The Sun's outermost atmosphere

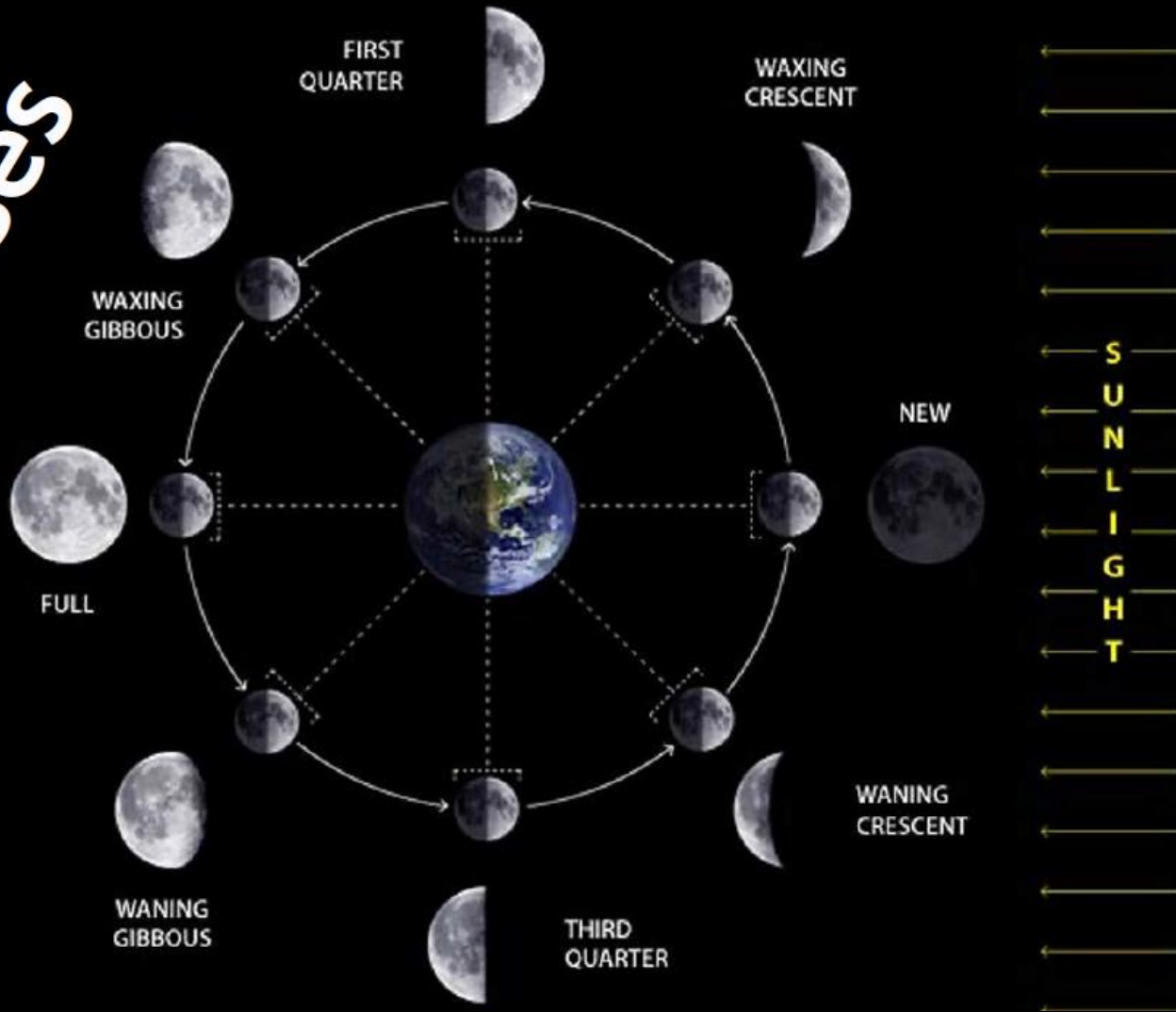


JUNE 10, 2021
ANNULAR SOLAR ECLIPSE

OCTOBER 14, 2023
ANNULAR SOLAR ECLIPSE

APRIL 8, 2024
TOTAL SOLAR ECLIPSE

Lunar Phases



Not to scale



NO SOLAR ECLIPSE



NO LUNAR ECLIPSE

MOST MONTHS



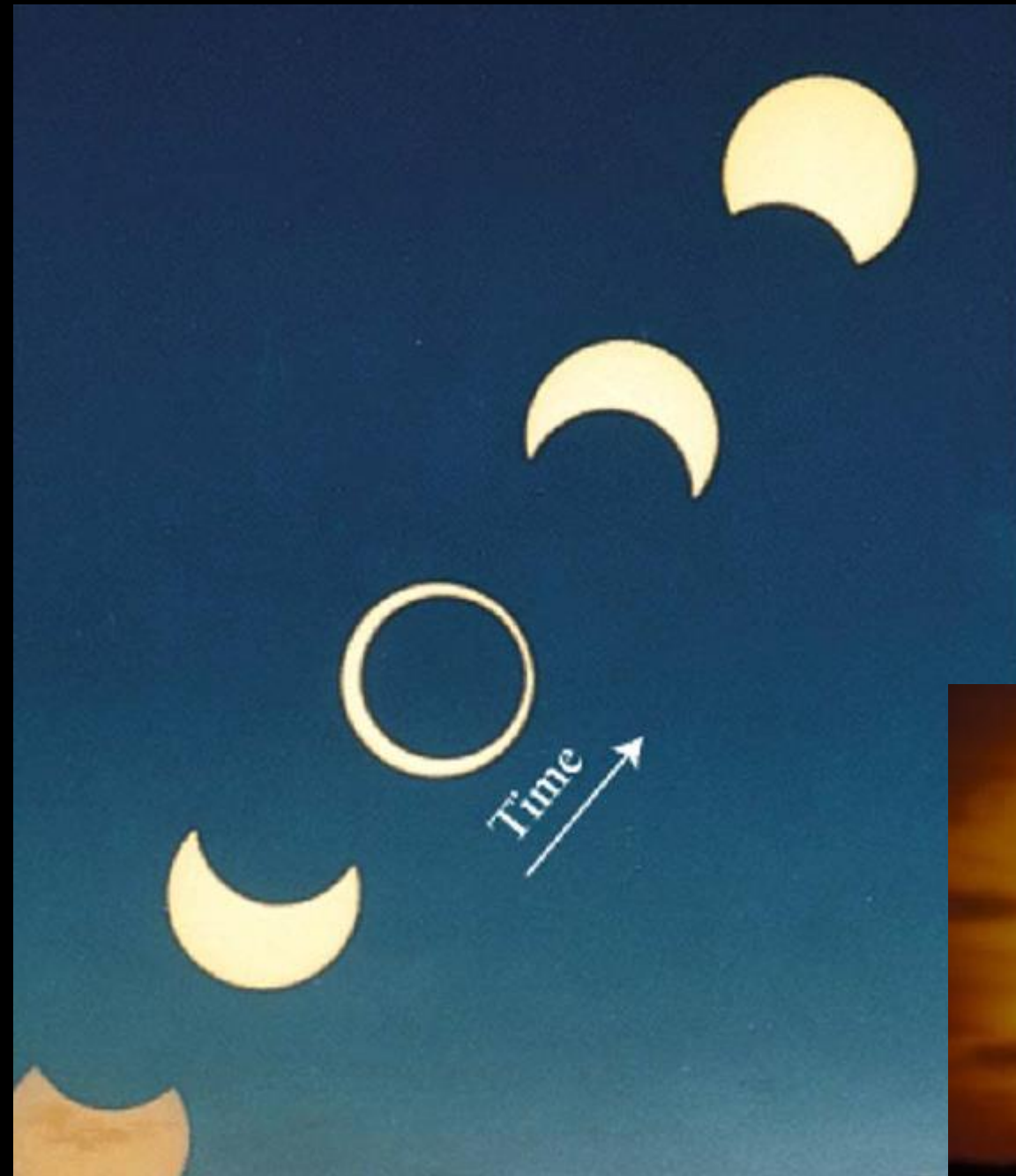
SOLAR ECLIPSE



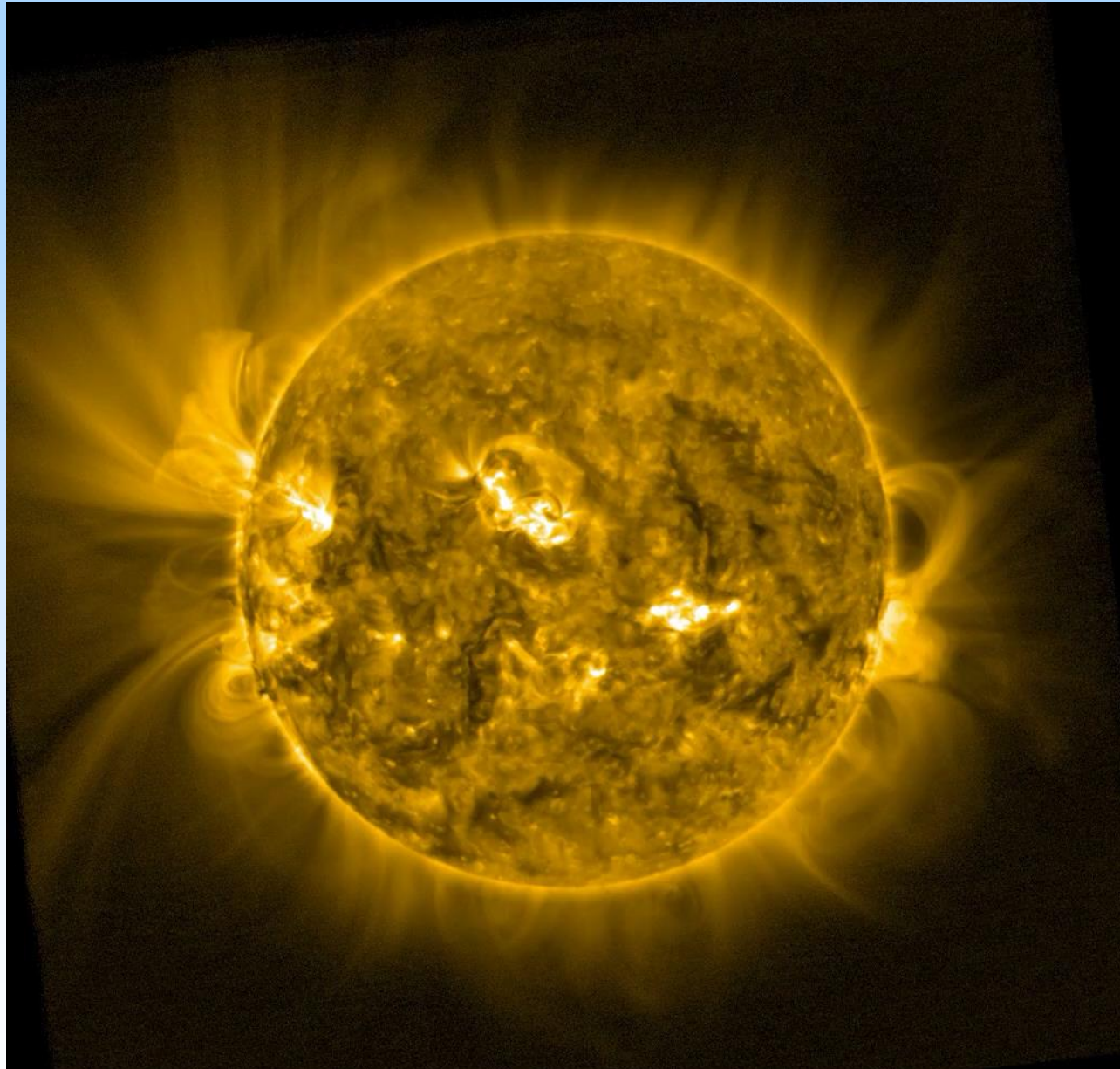
LUNAR ECLIPSE



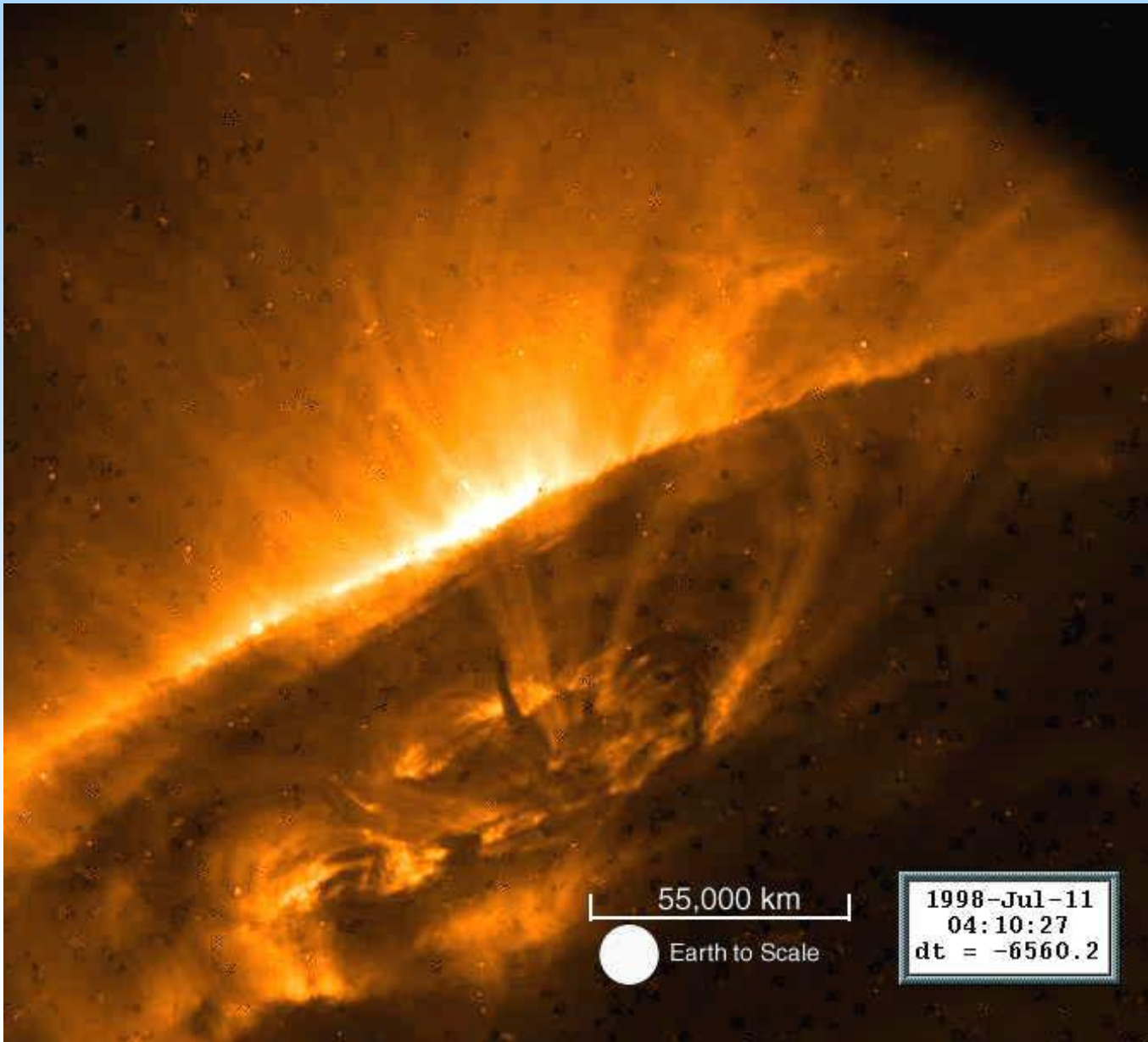
Annular Eclipse

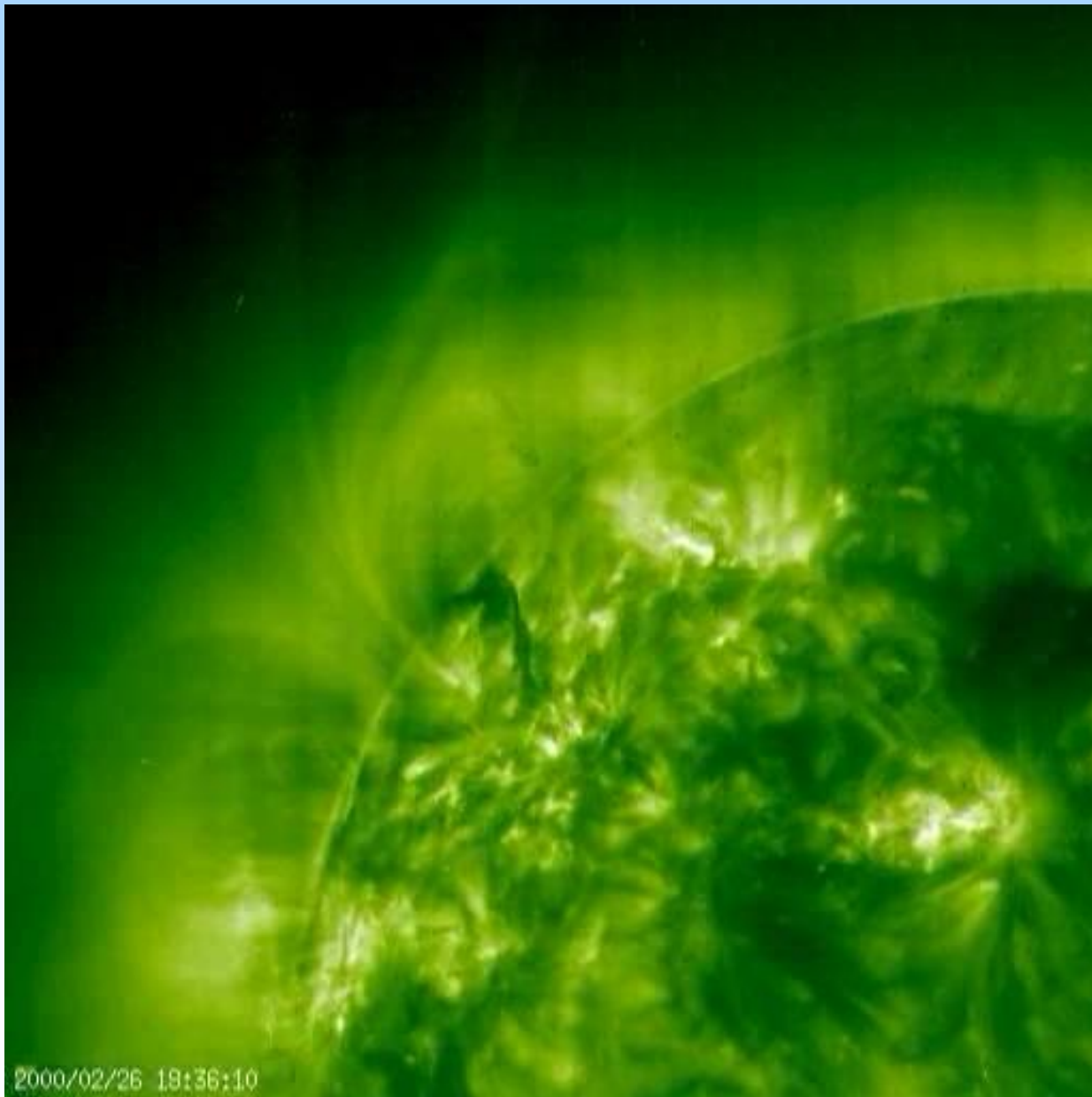


We have to go to **space** to see the Sun's atmosphere
with regularity.

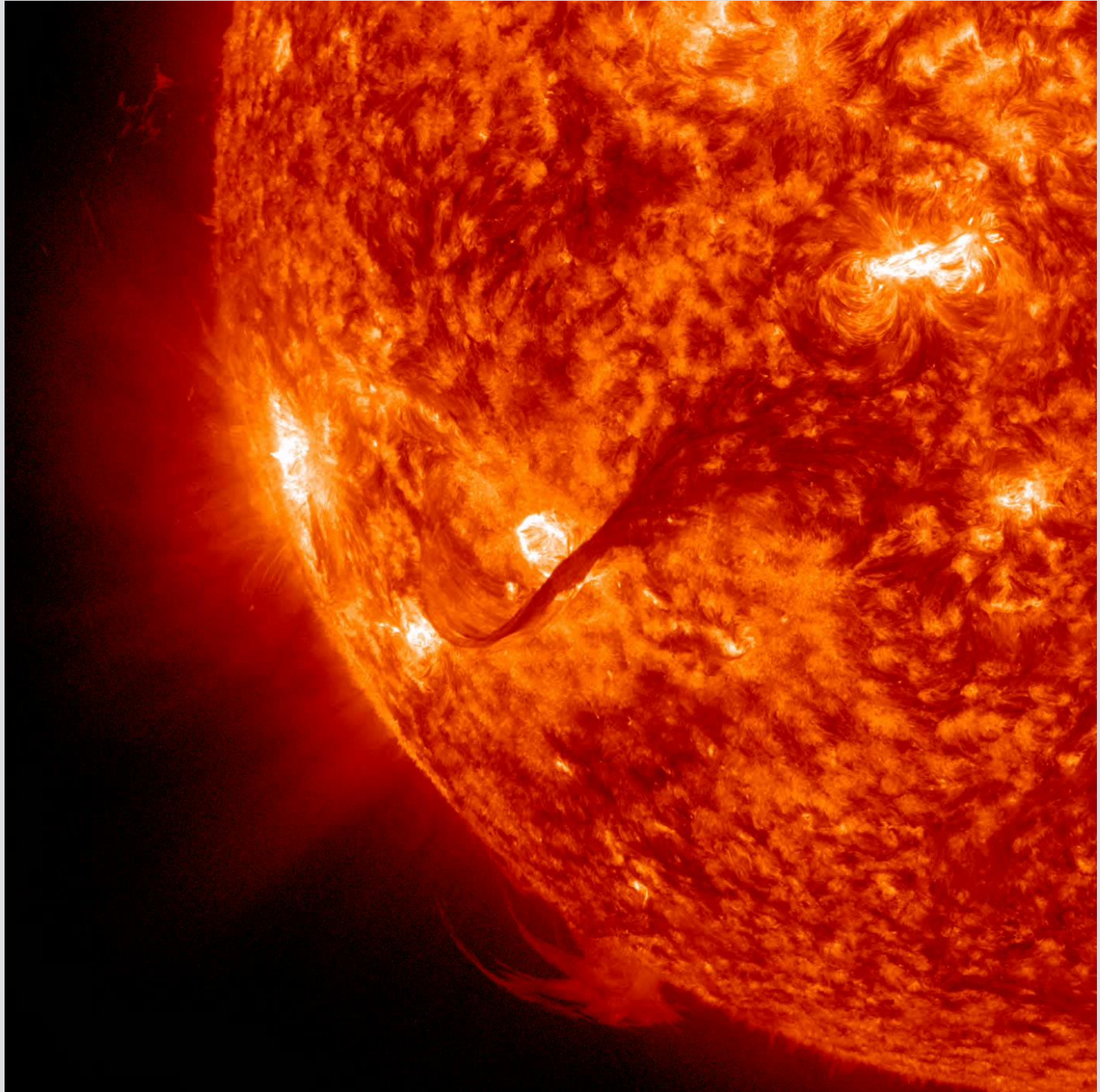


PROBA2/SWAP 17.4nm 2014-06-28 01:15:35

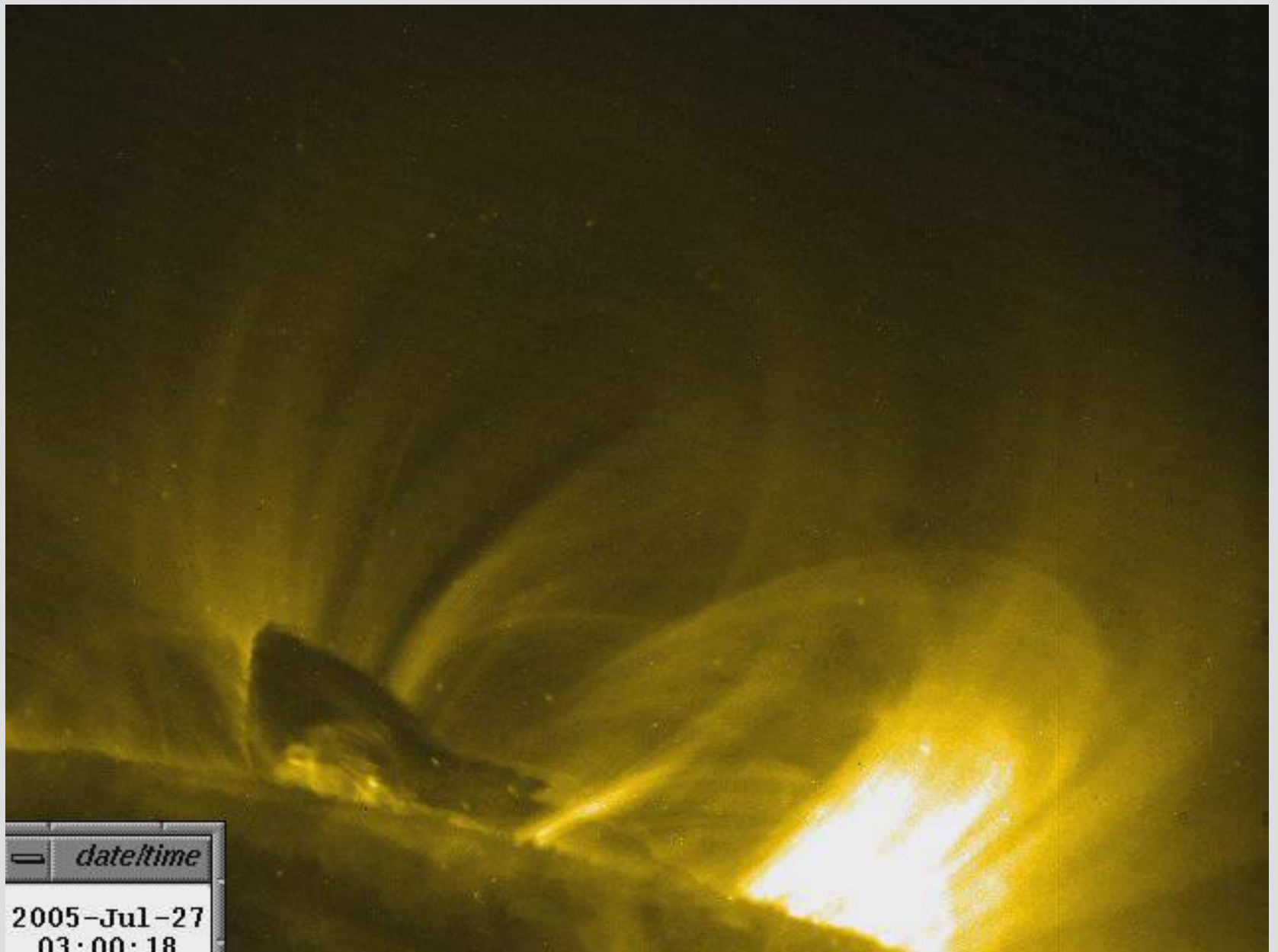




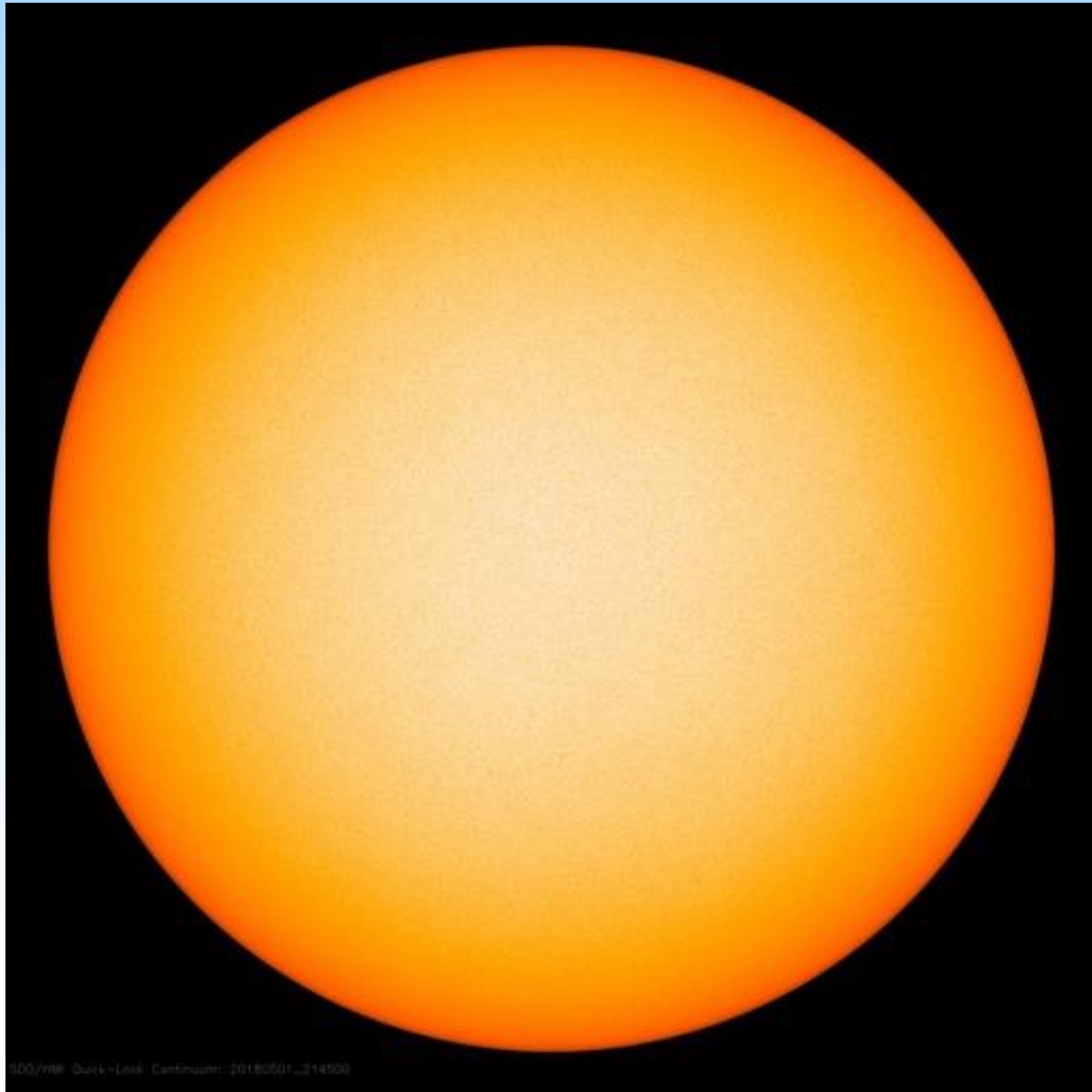
(Sterling & Moore 2004)



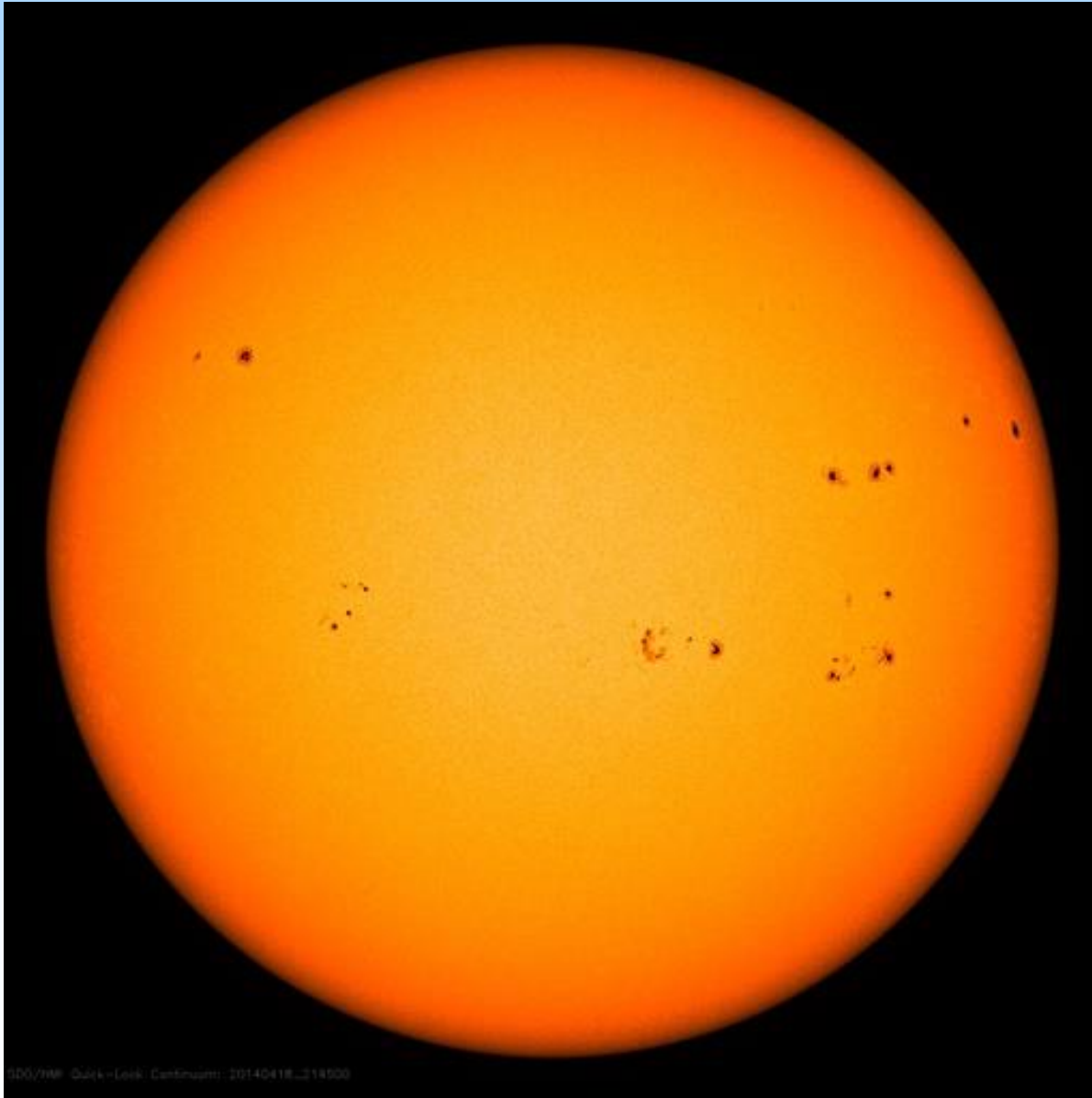
(TRACE 171)



datetime
2005-Jul-27
03:00:18



The Photosphere



SDO/HMI Quick-Look Continuum: 20140418_218500

The Photosphere — with Sunspots!

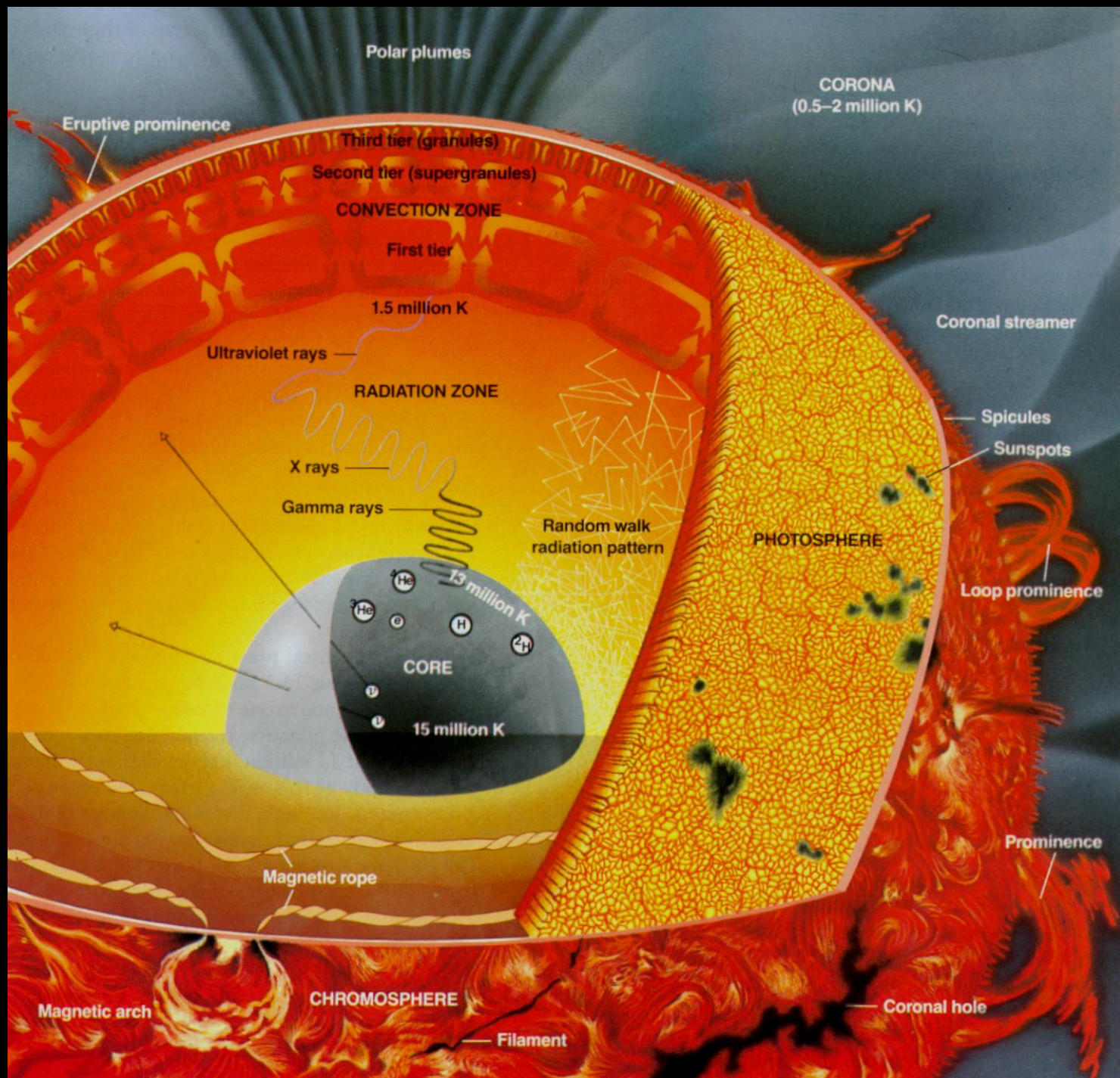
Magnetism is the key to many of the changing features of the Sun.

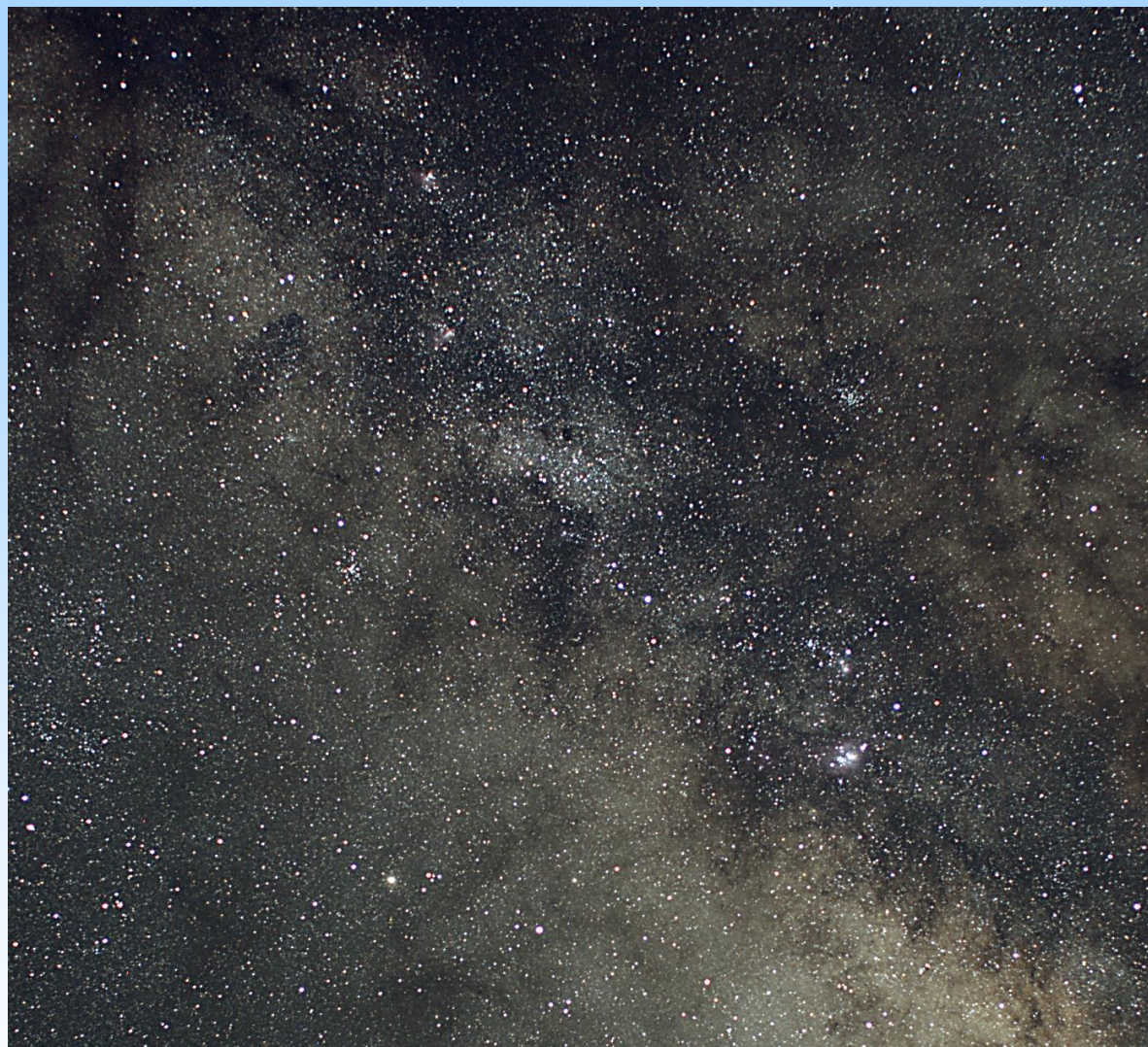
How Hot is the Sun??

How Hot is the Sun??

- About 11,000 degrees!

- About 11,000 degrees!
- But sunspots are cool — “only” 7,000 degrees!





The Sun is one of many(!) stars. Studying the sun tells us about other stars, and studying other stars tells us about the sun.

Orion!!







Quiz Time!!!!!!

Quiz Time!!!!!!

(But a fun one!)

What is the Sun?

What is the Sun??

It's a STAR!!

What do we get from the
Sun??

What do we get from the Sun??

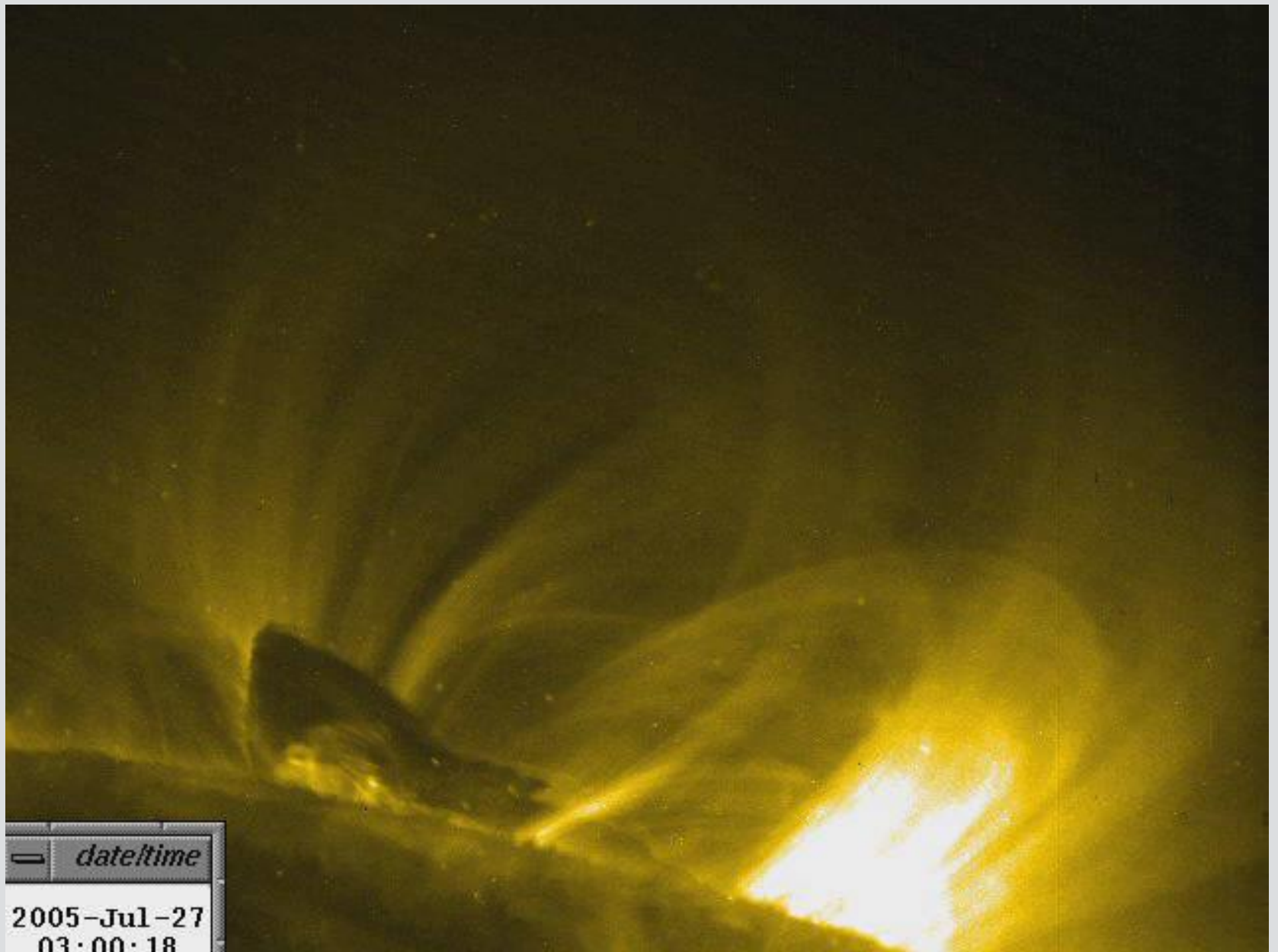
- Light!!
- Heat!!
- Seasons!!

How long does it take the Earth
to go around the Sun once?

How long does it take the Earth
to go around the Sun once?

One year!

(TRACE 171)



datetime
2005-Jul-27
03:00:18

True or False: Nothing
exciting ever happens on the
Sun.

True or False: You can be a
scientist too.

TRUE!!!