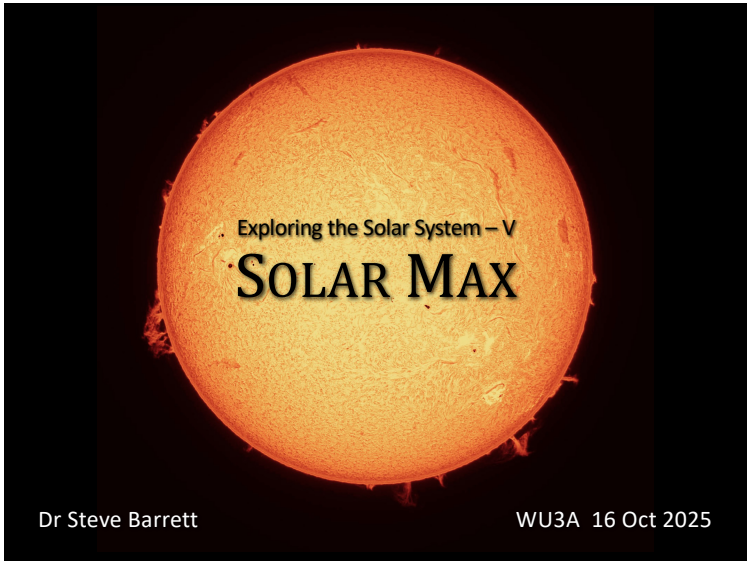
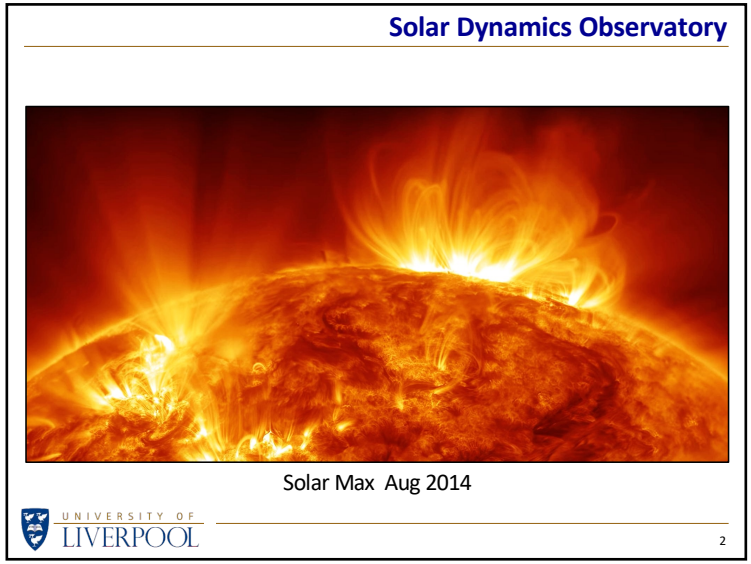
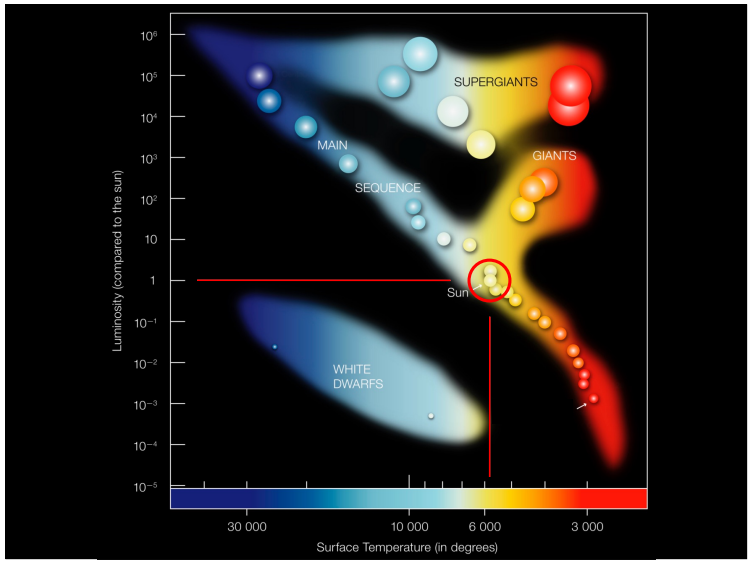
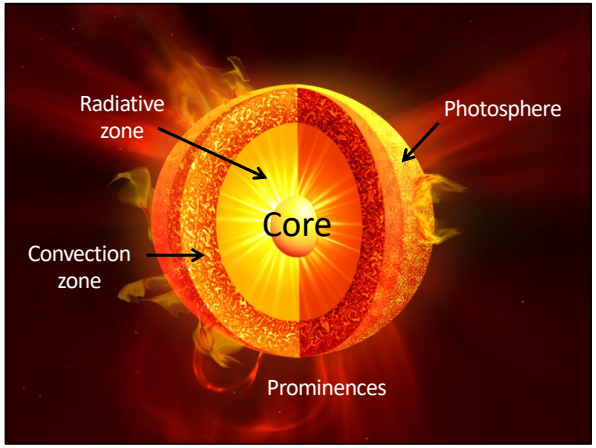
Exploring the Solar System V – Solar Max







Structure of the Sun



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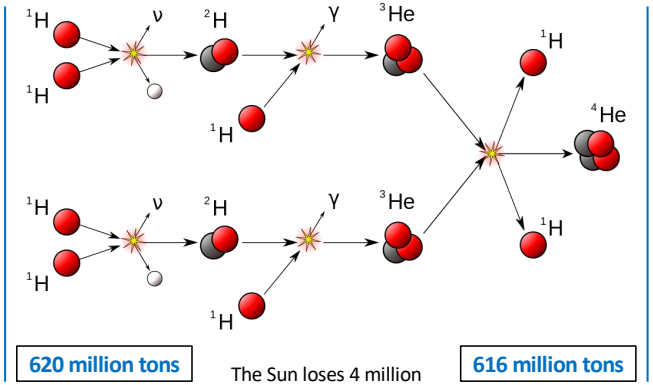
Fusion in the Core



620 million tons

The Sun loses 4 million tons of mass every second

616 million tons

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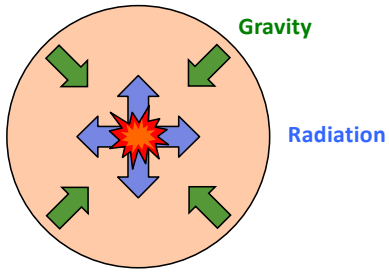
A Question of Balance

Fusion in the core produces a **radiation** pressure that pushes outward, balancing the inward force of **gravity**.

The core is very dense and so radiation can take 200,000 years to reach the surface.



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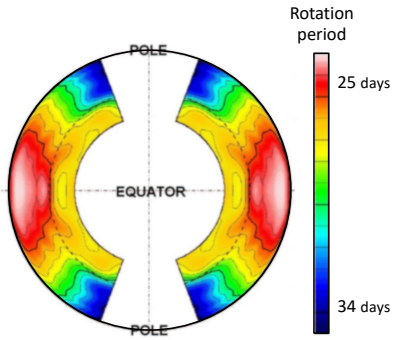
Helioseismology

Sound waves can be used to probe inside the Sun (just like geologists use seismic waves from earthquakes to probe inside the Earth).

These waves can be used to determine the temperature, density and motion of the interior of the Sun.



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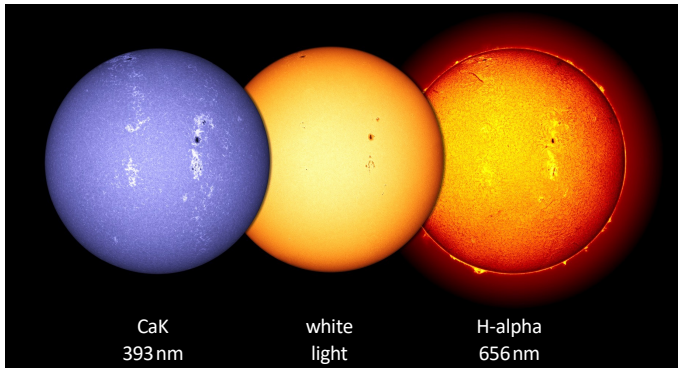
Photosphere of the Sun



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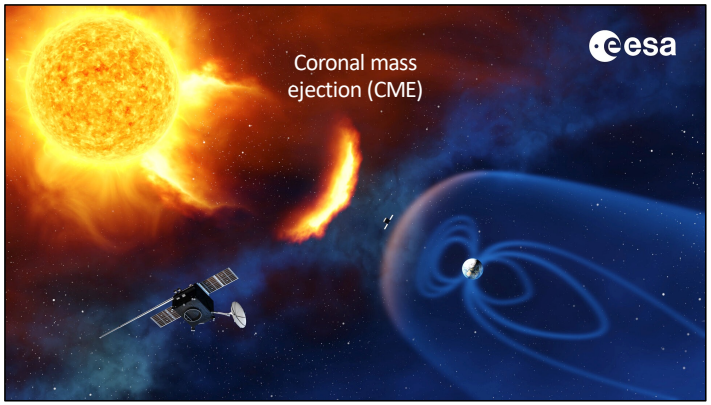
Space Weather



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Aurora Borealis

Feb 2002

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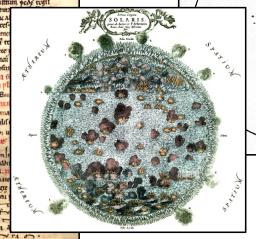
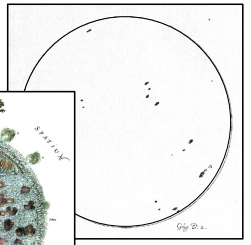
Sunspot Drawings

John of Worcester 1128



Scheiner 1635



Galileo 1615

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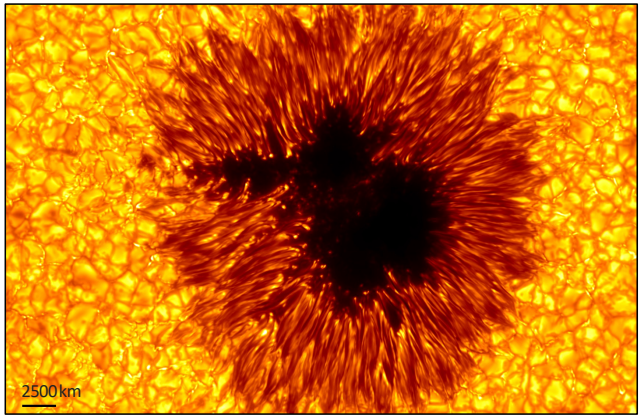
Sunspot Detail



SST 5 Sep 2016

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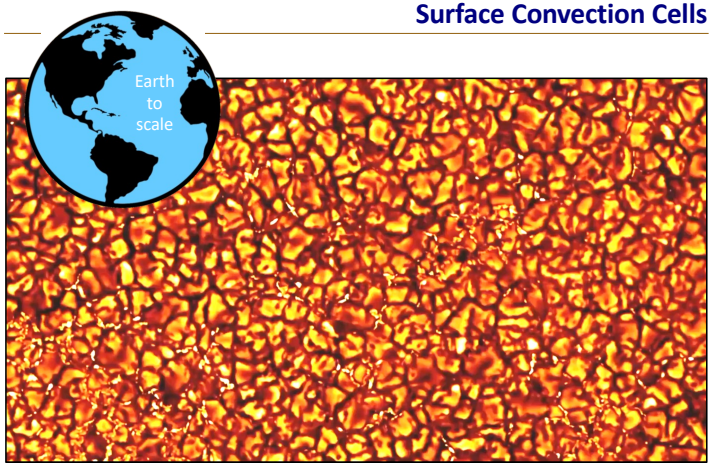
Surface Convection Cells



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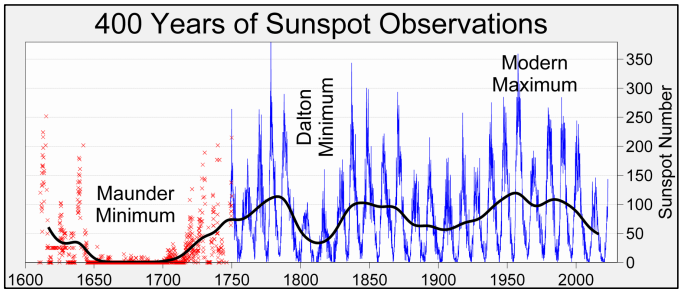
Sunspot Numbers



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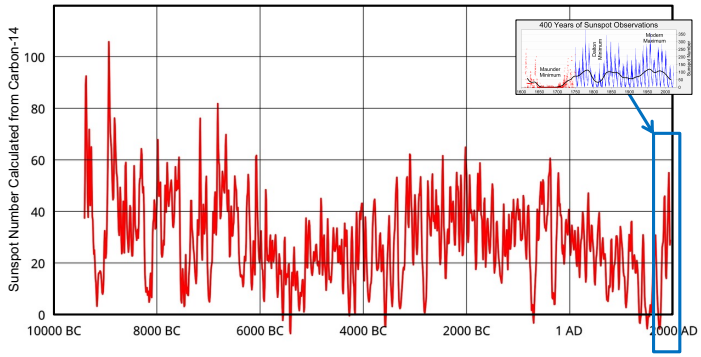
Sunspot Numbers



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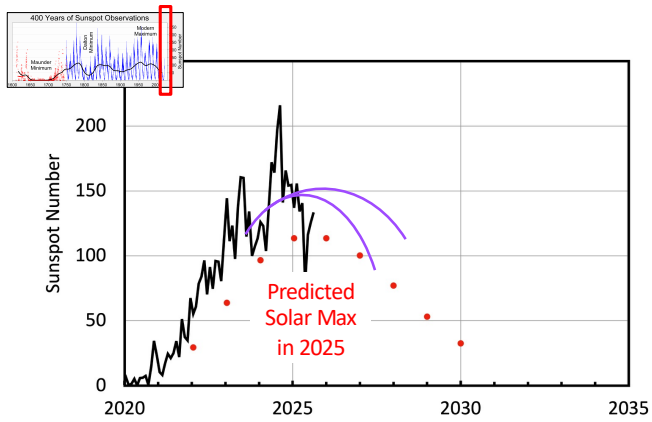
Sunspot Numbers



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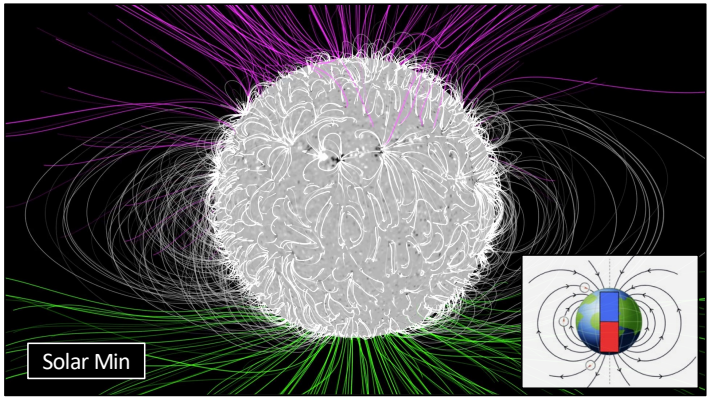
Solar Magnetic Field



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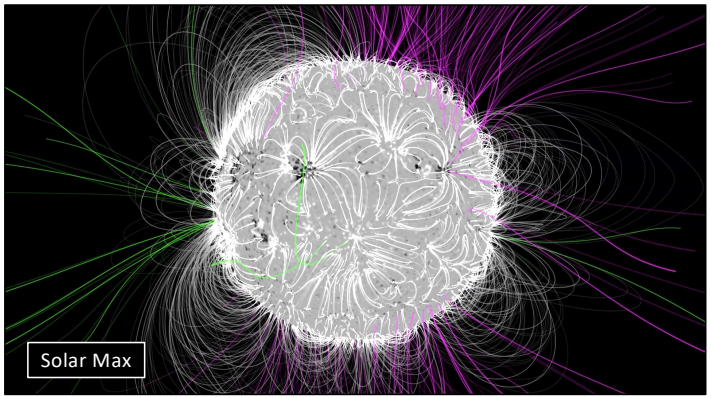
Solar Magnetic Field



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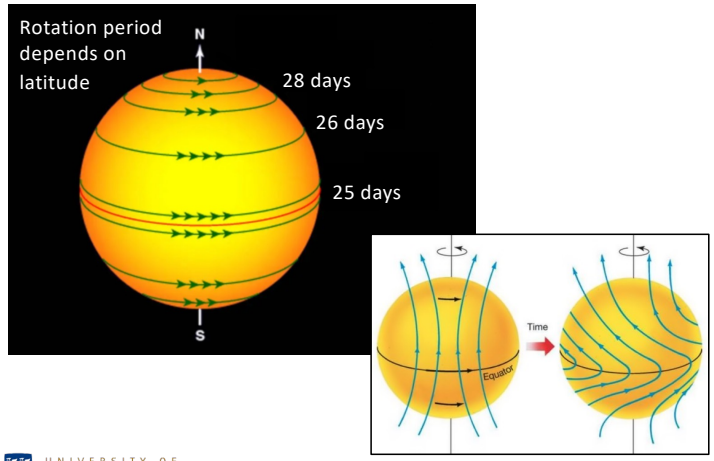
Differential Rotation



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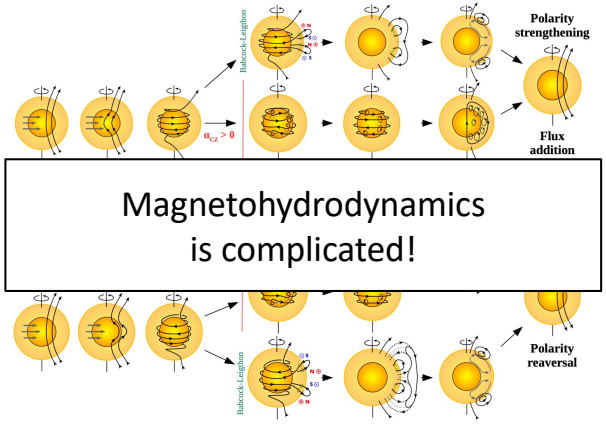
Tangled Magnetic Field



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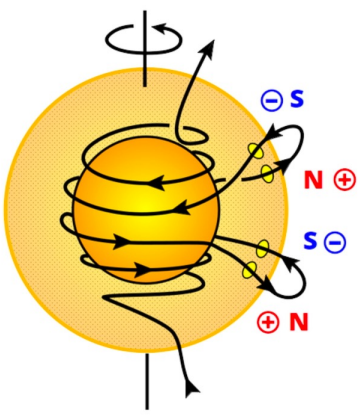
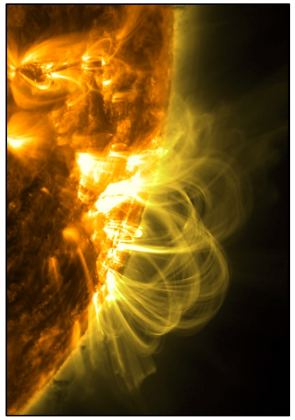
Tangled Magnetic Field





Solar Dynamics Observatory

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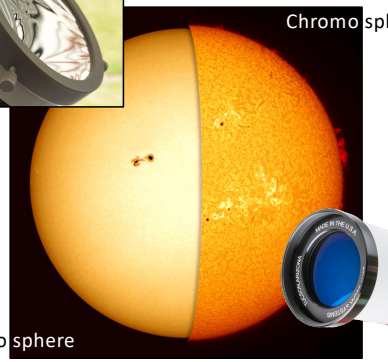
Amateur Solar Telescopes

White light mylar filter



H-alpha (Hα) solar telescope

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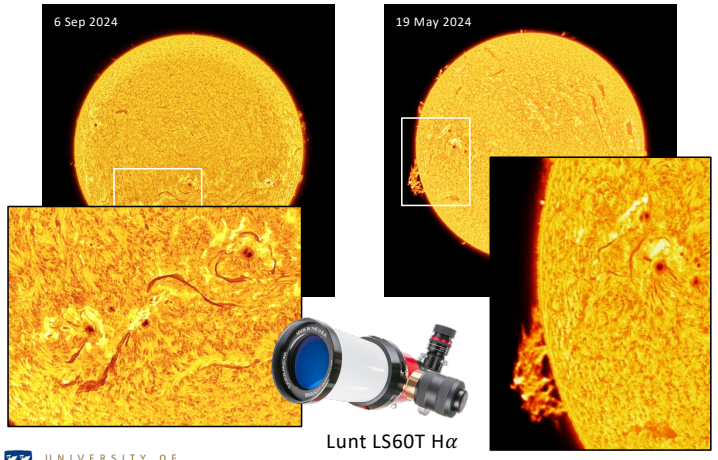
Amateur Solar Telescopes



Lunt LS60T Hα

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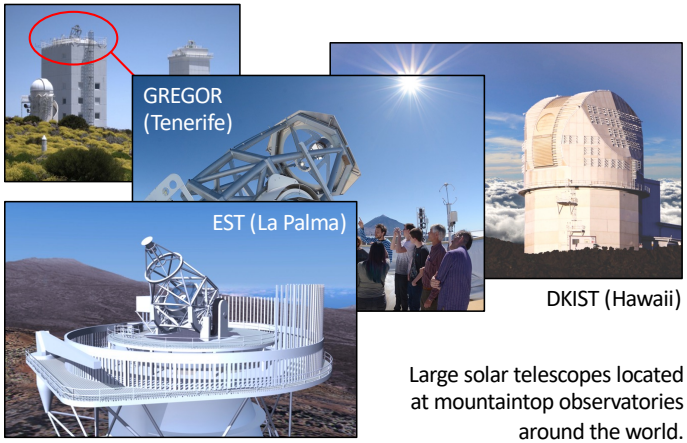
Large Solar Telescopes



Large solar telescopes located at mountaintop observatories around the world.

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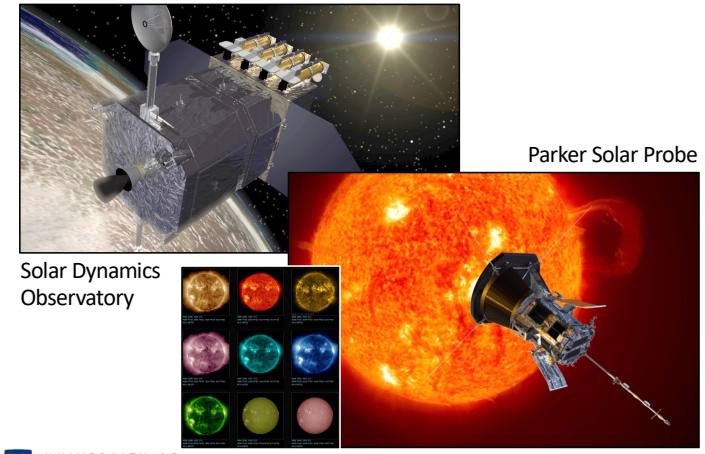
Solar Telescopes in Space



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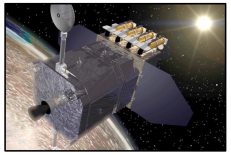
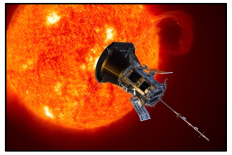
Want To Know More?

NASA overview

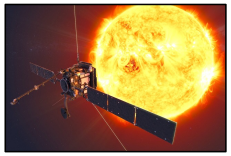
science.NASA.gov/sun



science.NASA.gov/mission/sdo

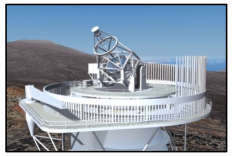


science.NASA.gov/mission/parker-solar-probe



ESA.int/Science_Exploration/Space_Science/Solar_Orbiter

NSO.edu/telescopes/inouye-solar-telescope



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