# AURORAS

CAROLIN SCHUNTERMANN & PETER GOLDSBOROUGH

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# SOLAR WIND

# DEFINITION

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- Plasma: ionized air or gas
- Ionized: negatively or positively charged

# ORIGIN

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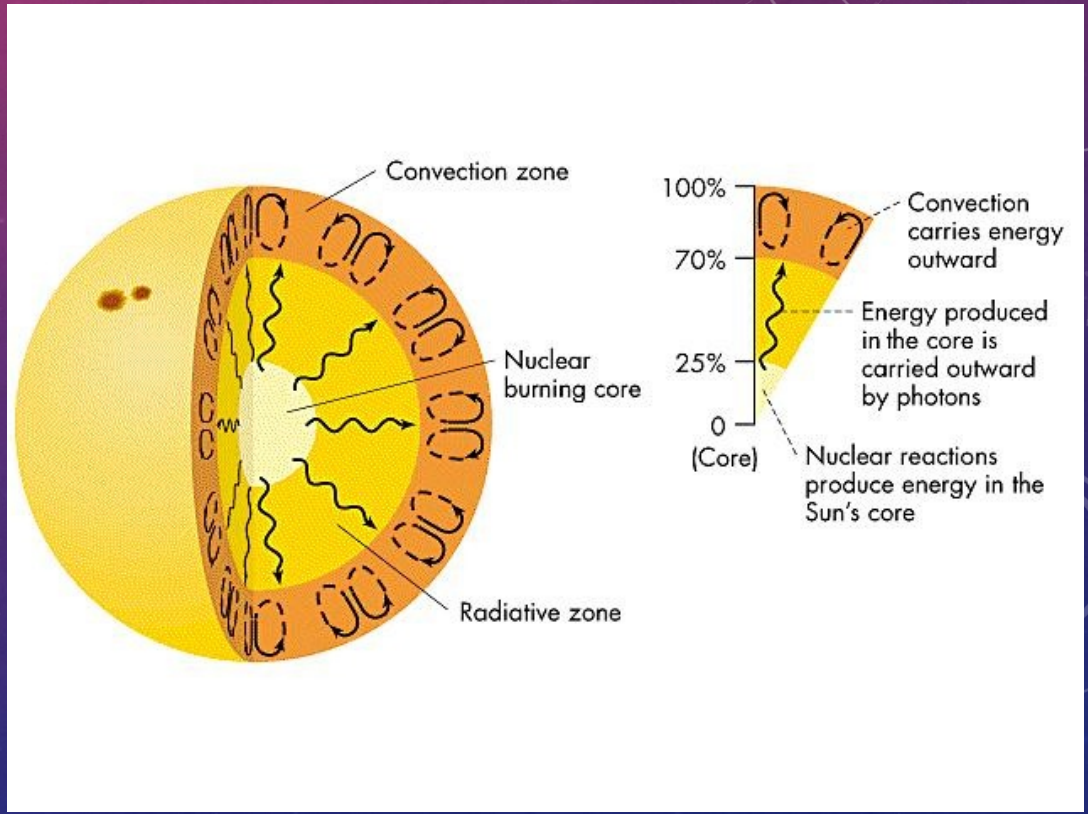
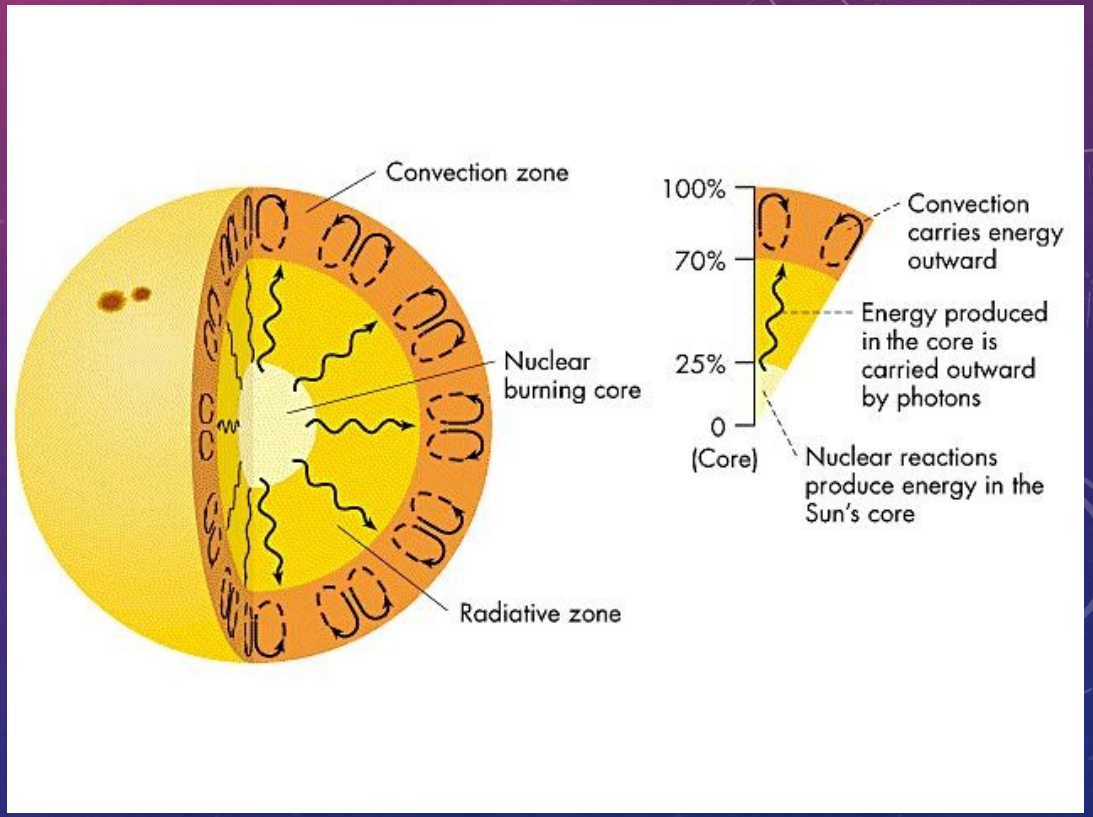

Convection zone
Nuclear burning core
Radiative zone
100%
70%
25%
0
(Core)
Convection carries energy outward
Energy produced in the core is carried outward by photons
Nuclear reactions produce energy in the Sun's core

# ORIGIN

- Nuclear reactions in sun's core



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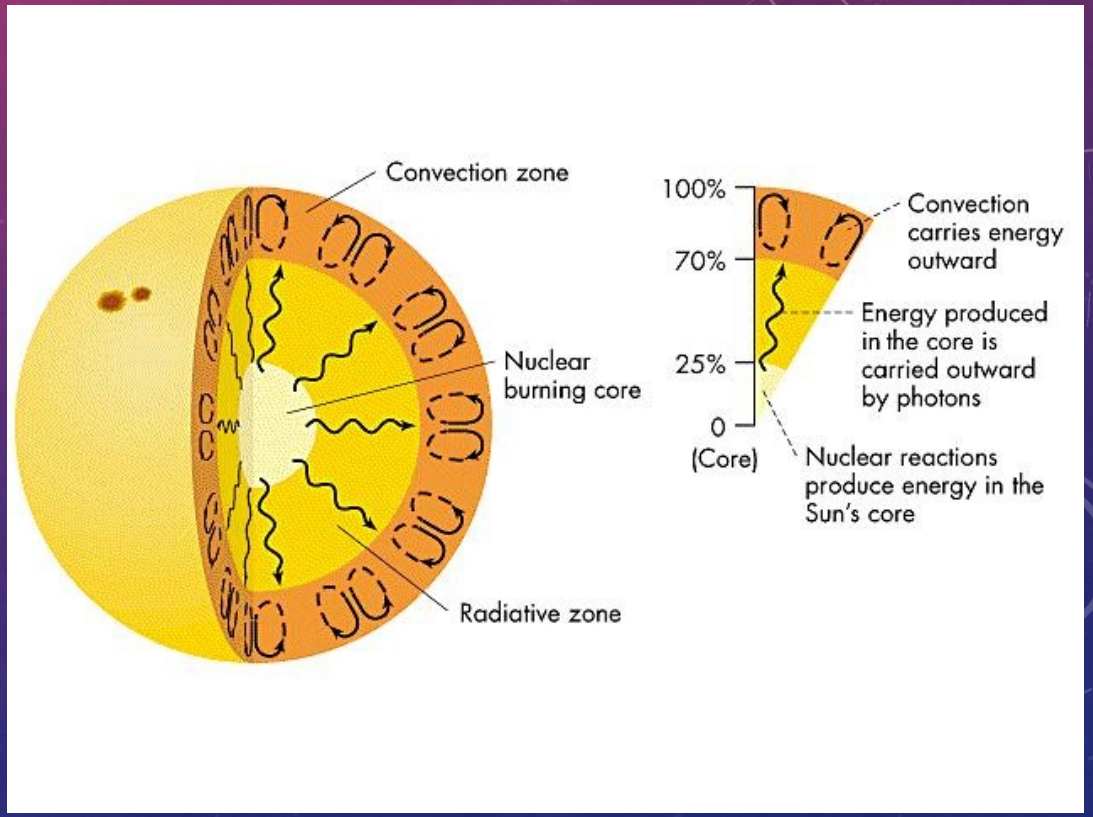
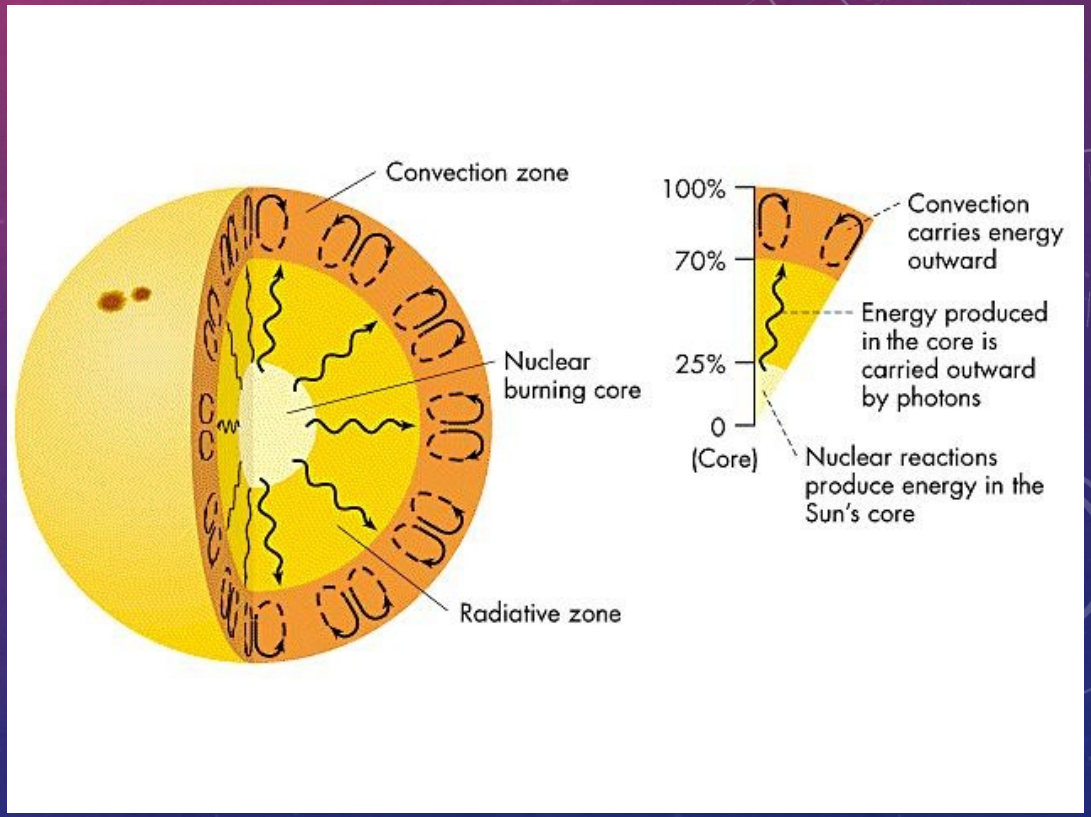
- Nuclear reactions in sun's core
- Energy radiates to convection cells, form magnetic fields



# ORIGIN

- Nuclear reactions in sun's core
- Energy radiates to convection cells, form magnetic fields
- Given enough energy, the plasma is no longer held back by the sun's gravity



# VIDEO

# MAGNETOSPHERE

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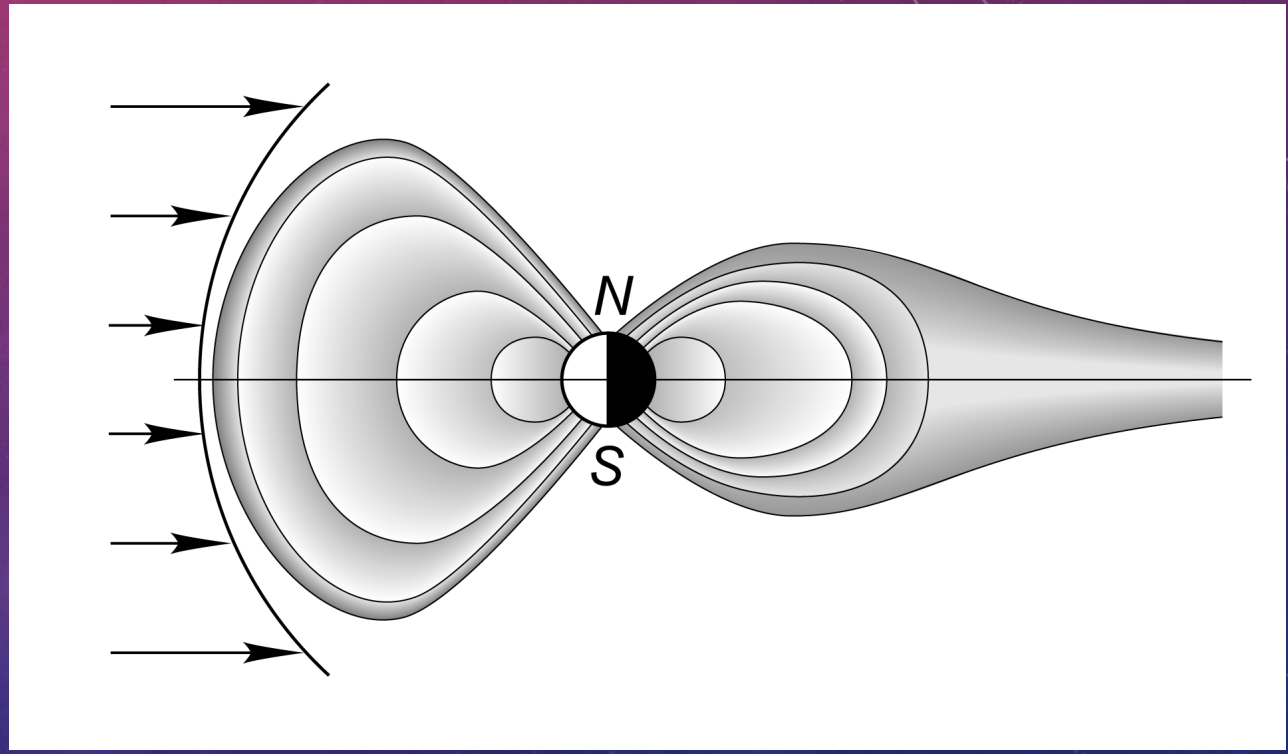
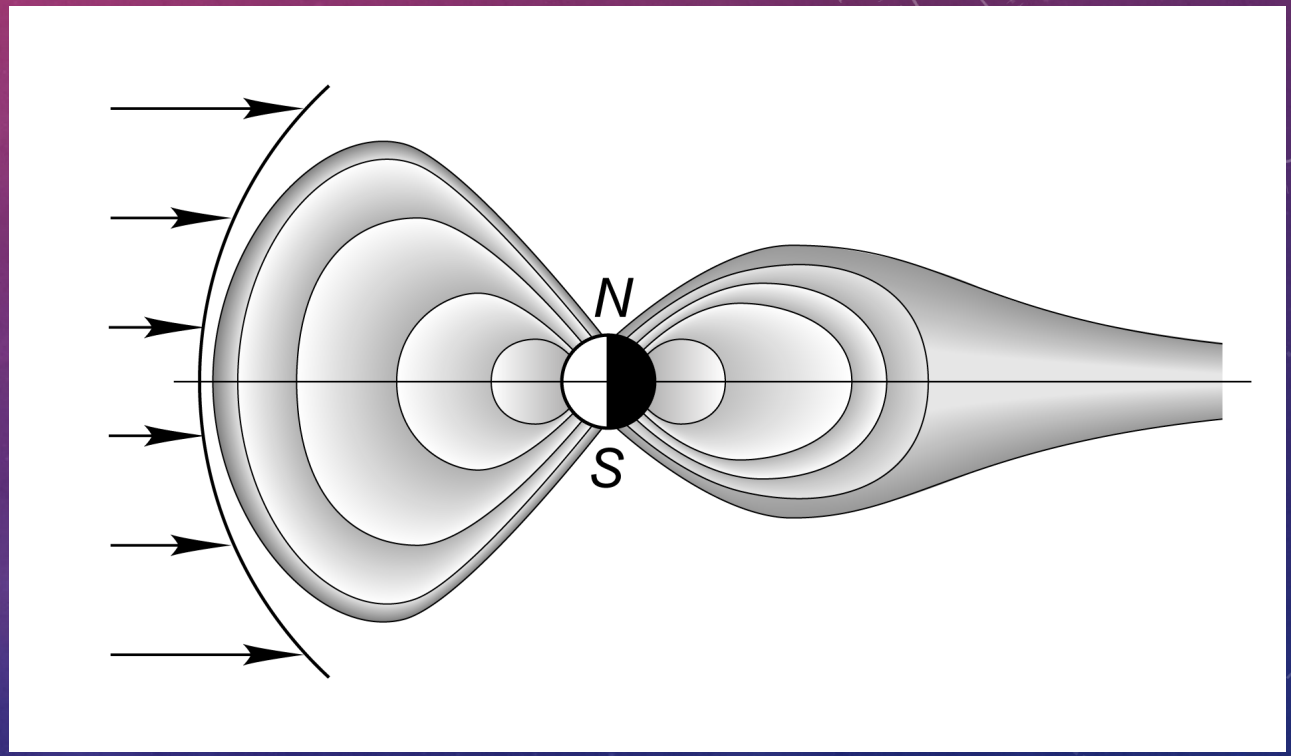


# MAGNETOSPHERE

- "Area of space where charged particles are controlled by earth's magnetic field" [2]



# MAGNETOSPHERE

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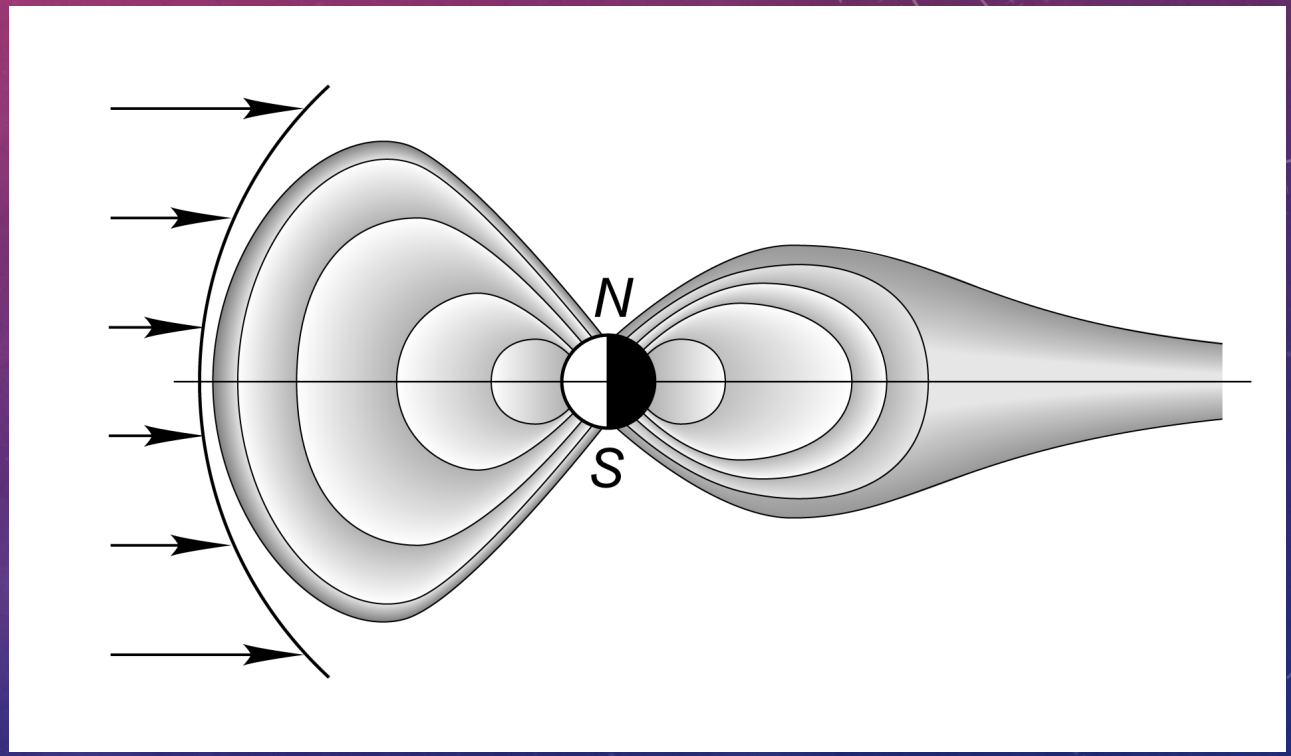
- Deflects solar wind and plasma towards poles



# AURORAL LIGHTS

# FROM PLASMA TO LIGHT

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- Emission of light (photons)

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- Yellow and Pink: mixtures of the above

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- Auroras are best observed at **magnetic midnight**
- Are caused by Earth’s magnetosphere and the magnetic field of the solar wind

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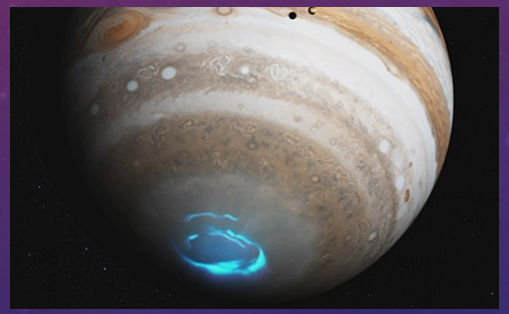
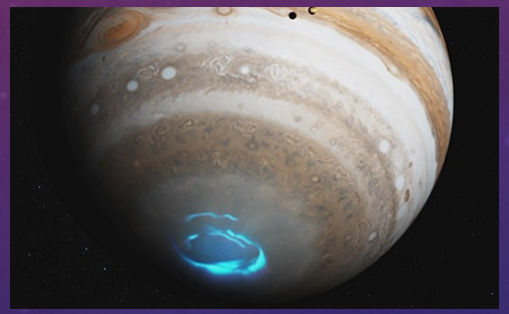
- On Jupiter, it's moons Io, Ganymede and Europa are a source for the auroras
- Also have been seen on Venus and Mars

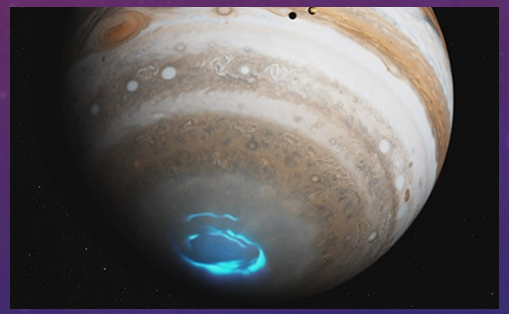


*Aurora on Jupiter*



*Aurora on Jupiter*

*Aurora on Saturn*



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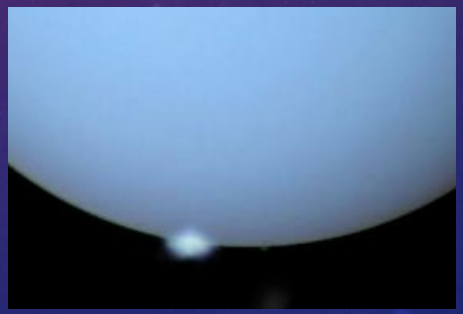
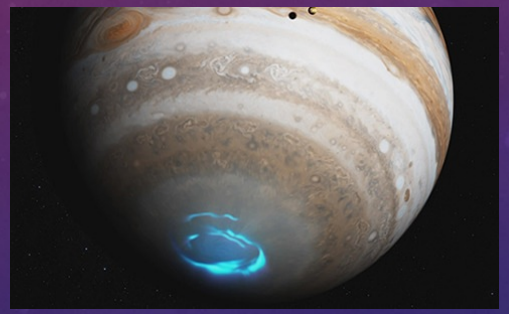
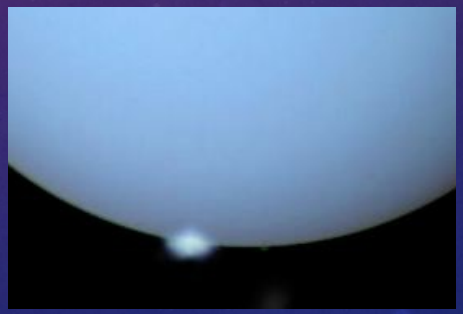


*Aurora on Uranus*



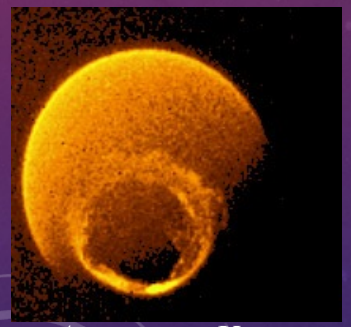
*Aurora on Jupiter*

*Aurora on Saturn*

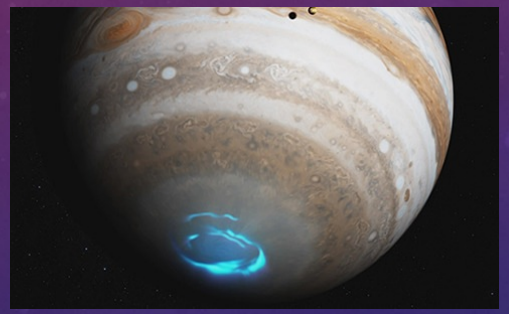


*Aurora on Uranus*

*Aurora on Neptune*



*Aurora on Venus*



*Aurora on Jupiter*

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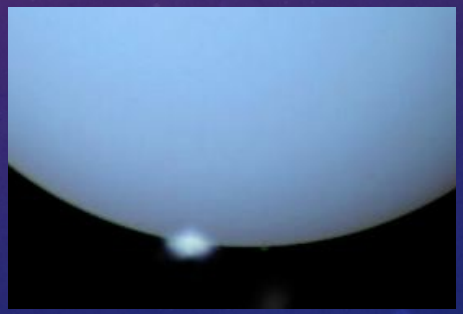

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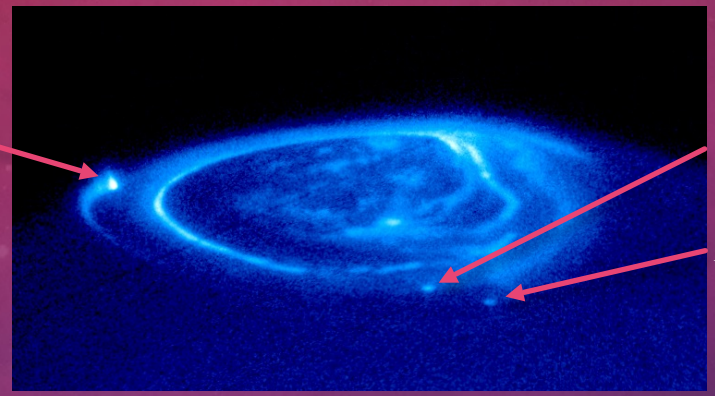
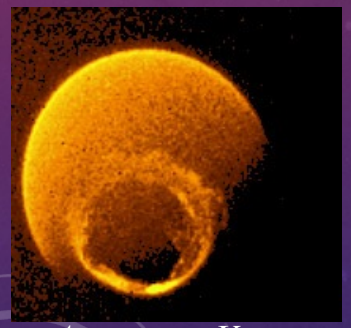



*Ultraviolet aurora on Jupiter, observed by the Hubble Space Telescope*



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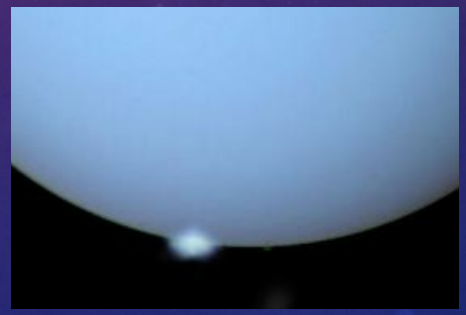

*Aurora on Uranus*

*Aurora on Neptune*

# VIDEO

# QUESTIONS?

# SOURCES

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1. http://en.wikipedia.org/wiki/Solar_wind
2. http://en.wikipedia.org/wiki/Magnetosphere
3. http://en.wikipedia.org/wiki/Aurora
4. http://www.northernlightscentre.ca/northernlights.html
5. http://science.howstuffworks.com/nature/climate-weather/atmospheric/question471.htm

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5. http://science.howstuffworks.com/nature/climate-weather/atmospheric/question471.htm


Video 1: youtu.be/1DXHE4kt3Fw?t=54s

Video 2: youtu.be/czMh3BnHFHQ

# THANK YOU FOR LISTENING!