

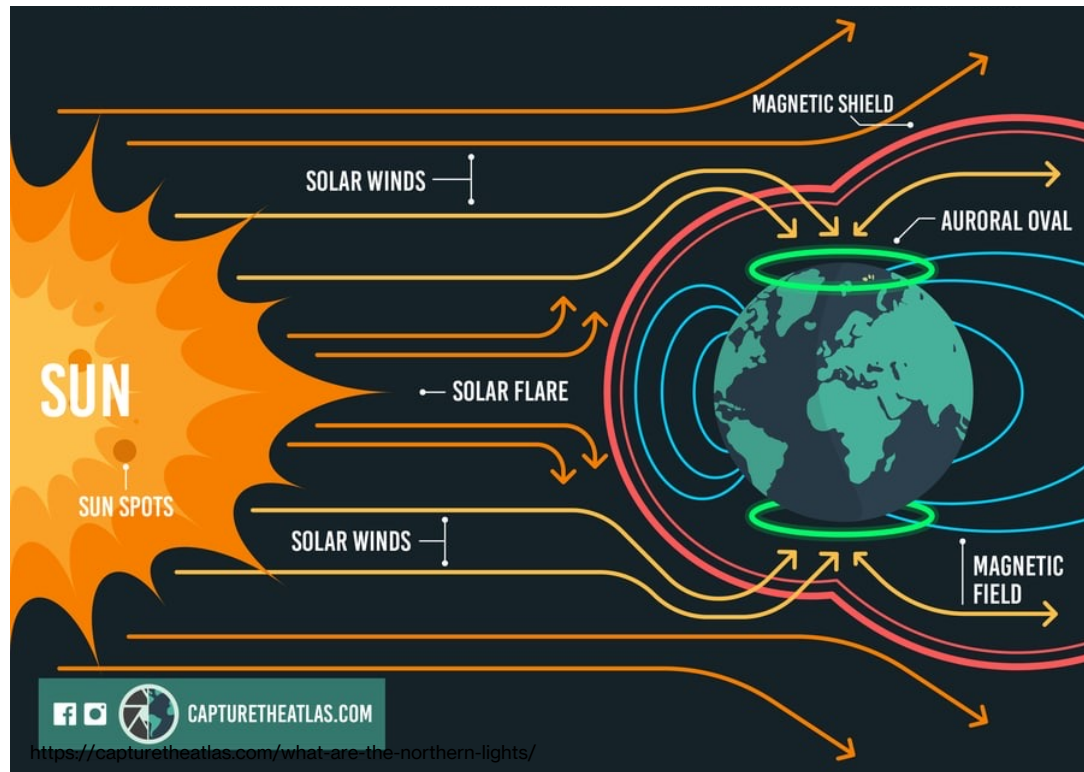
# CHASING THE AURORA

*Multispectral Study of Sunlit Aurora Using HiT&MIS:  
Deployment and Preliminary Results*

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# WHAT IS AURORA?

Magnetized particles from the sun interact with the earth's atmosphere to create aurora



# WHY DO WE CARE?

**METEOMONDAY**

## LAYERS OF THE EARTH'S ATMOSPHERE

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The infographic shows the five layers of the Earth's atmosphere, separated by boundaries called pauses. The layers and their characteristics are:

- EXOSPHERE** (700 - 10,000 km): The outermost layer, containing the ISS and Space Shuttle.
- THERMOSPHERE** (80 - 700 km): Contains aurora, Elves, and Sprites.
- MESOSPHERE** (50 - 86 km): Contains Meteors, Polar Mesospheric Clouds (Noctilucent Clouds), and Sounding Rocket.
- STRATOSPHERE** (12 - 50 km): Contains Weather Balloon, Polar Stratospheric Clouds (Nacreous Clouds), Airplane, and Ozone Layer.
- TROPOSPHERE** (7 - 15 km): The lowest layer, containing clouds and mountains.

The boundaries between two layers where great changes in density and temperature characteristics occur are called pauses.

The Earth's atmosphere helps make the planet habitable. It is composed of five major layers characterized by:

- chemical composition,
- density, and
- temperature changes with height.

From the surface of the Earth moving upwards, the atmospheric layers are troposphere, stratosphere, mesosphere, thermosphere, and exosphere.

**REFERENCES**

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- [2] National Geographic Society (2019, October 22). Atmosphere. National Geographic. <https://www.nationalgeographic.org/encyclopedia/atmosphere/>
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Enhanced Infographic - NASA & UCAR

Earth Shaker

# THE RESEARCH GAP

- Nighttime aurora are extensively studied through spectrographs, imagers, etc.
- Daytime aurora is difficult to observe because of the bright solar background

## HiT&MIS

- **High Throughput & Multislit Imaging Spectrograph** overcomes this issue with high resolution
- It is currently deployed in Kiruna, Sweden (Arctic Circle)





# FIRST GLANCE

