IMPROVEMENTS TO HiWind CODE

AND IMMERSIVE VISUALIZATION OF THE SOLAR CORONA

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JULY 28, 2021

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Overview

- HiWind Fabry-Perot Interferometer
- Existing Code
- Visualization Improvements
- Ground Control Improvements
- Payload Simulator
- Upcoming Applications & Enhancements

- Simulated Emissivity Data
- Virtual Reality
- Applications & Future Prospects

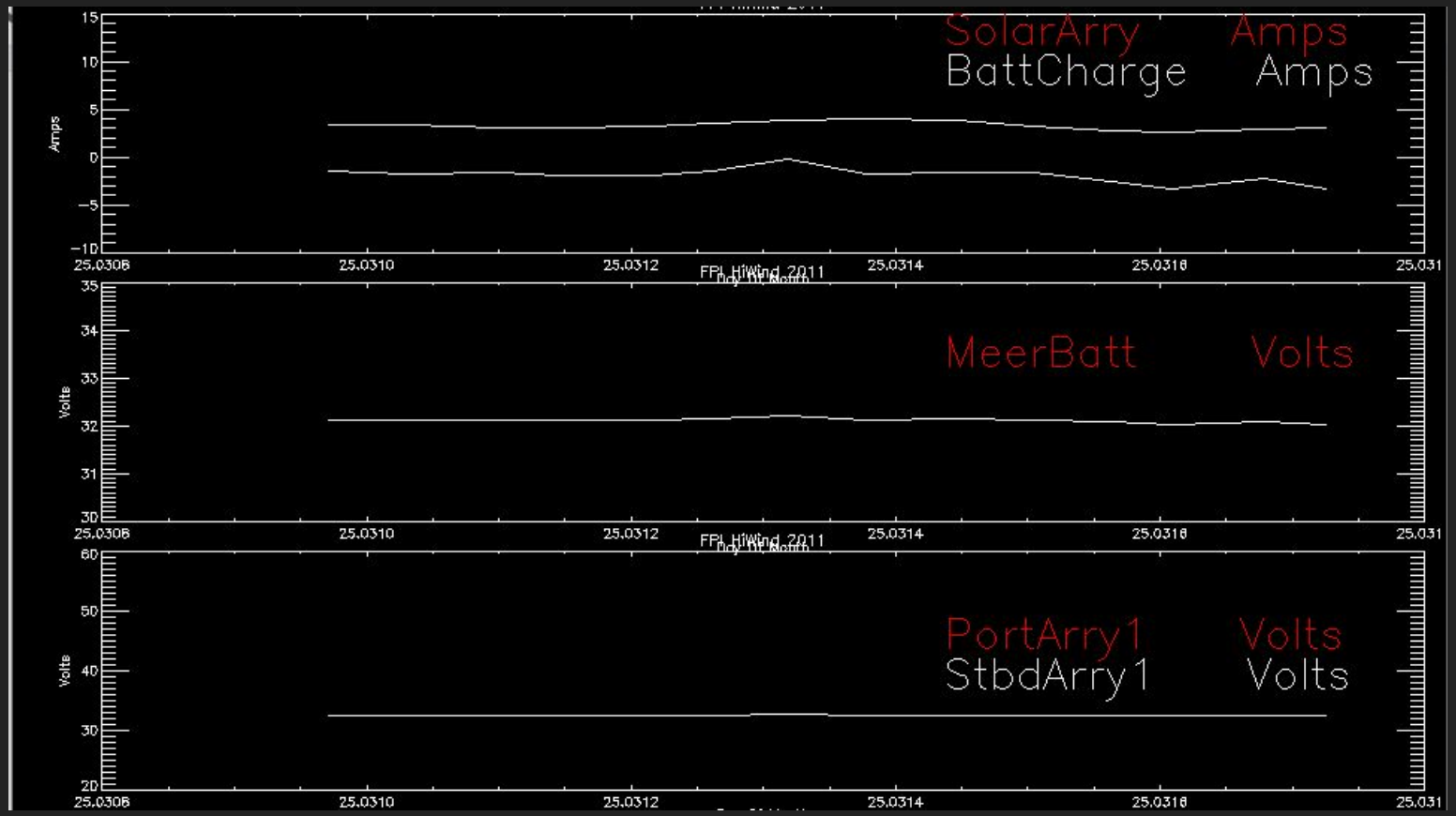
HiWind Fabry-Pérot Interferometer

Existing Code

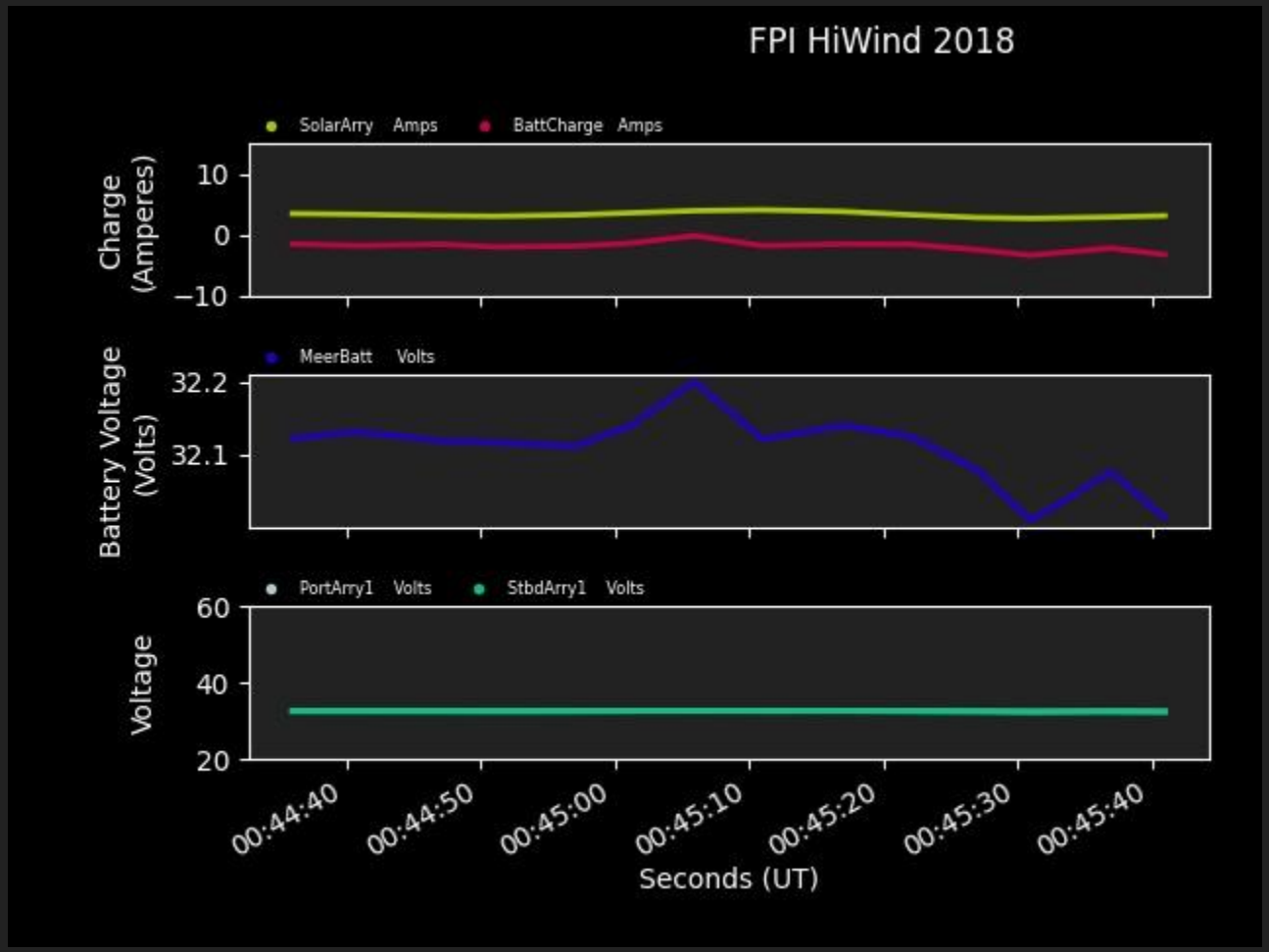
- Plotting routines
  - IDL
  - License issues

- Ground control
  - C++
  - No checks for instrument malfunction
  - No opportunities to simulate HiWind in flight

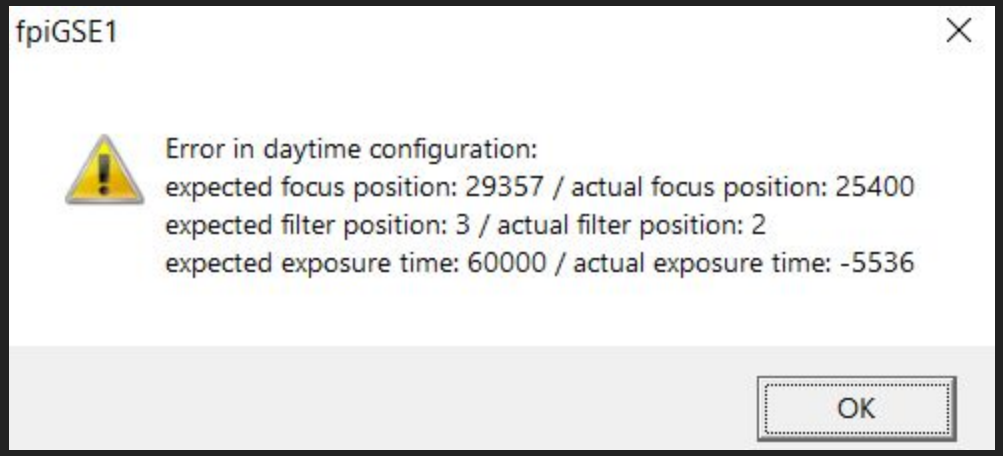
Visualization Improvements



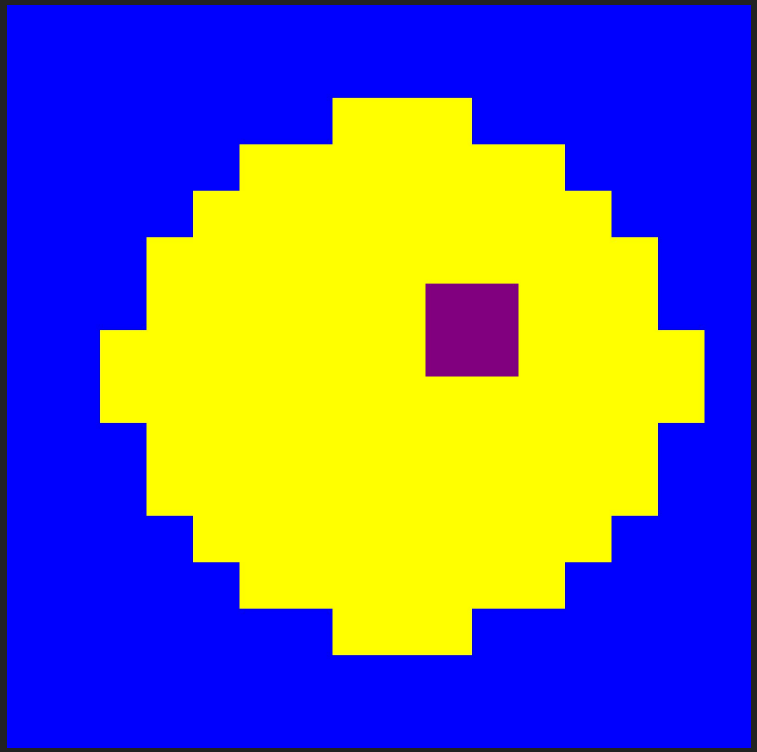
Visualization Improvements



Ground Control Improvements



Payload Simulator



Upcoming Enhancements & Applications

- Refining logic for error notifications
- Adding robustness to payload simulator
- Launching HiWind from New Zealand in 2022

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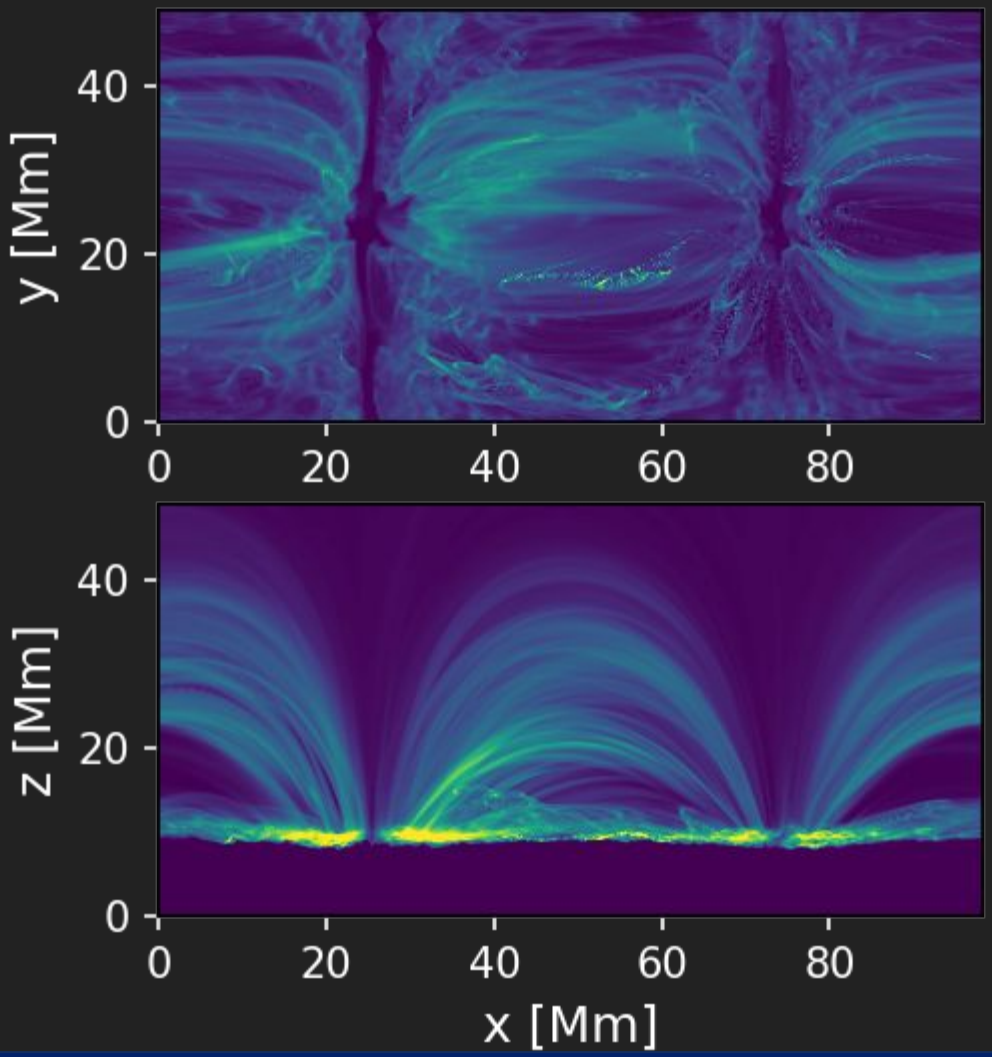
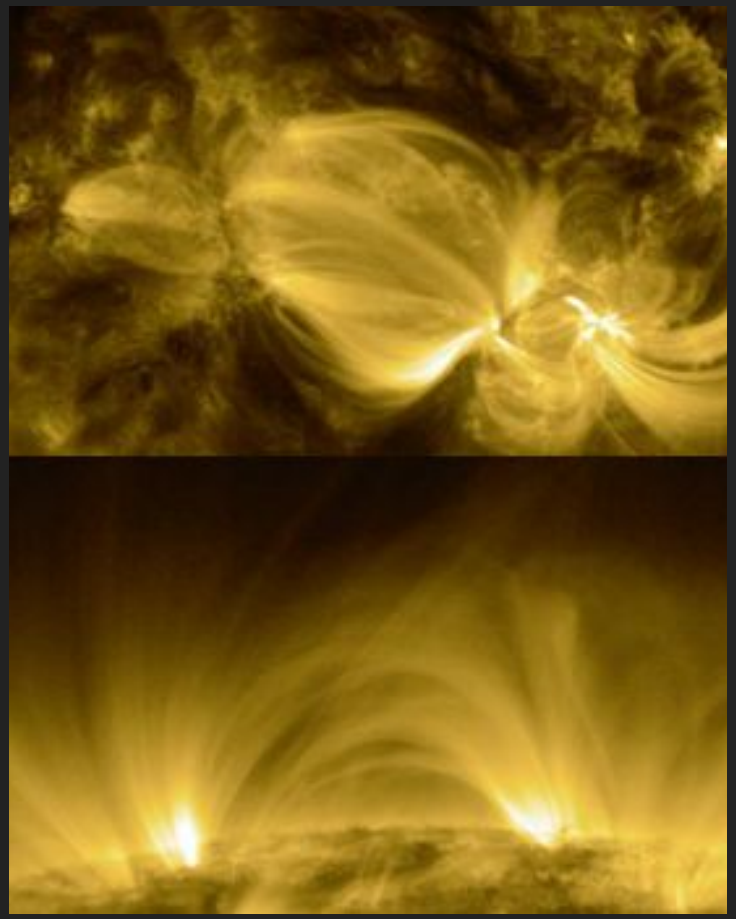
Simulated Emissivity Data

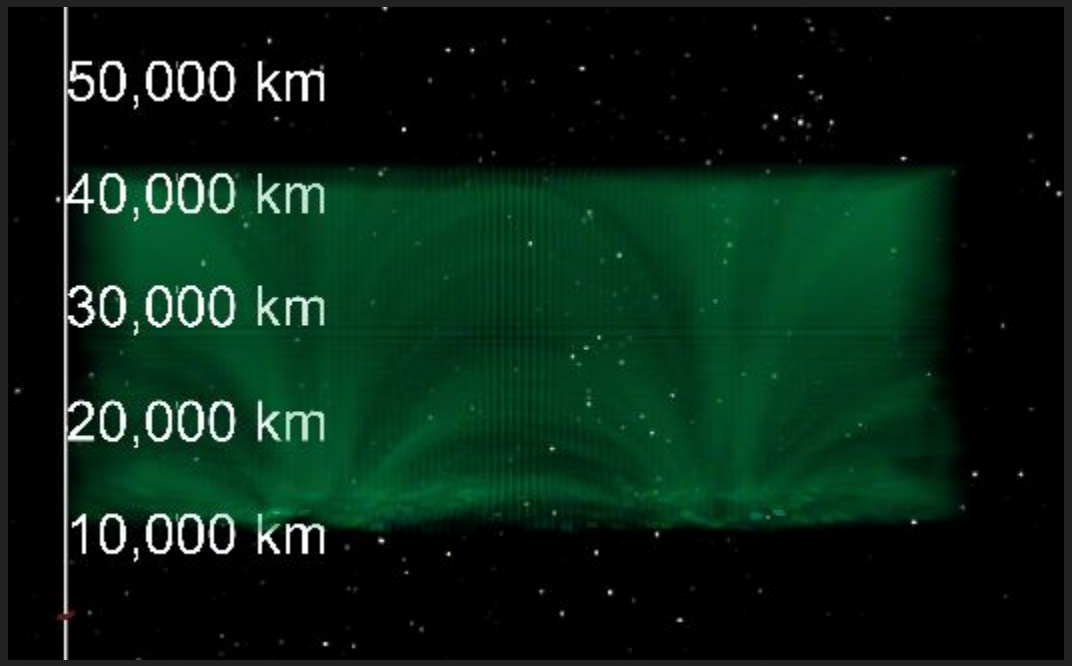


Observations with AIA 171

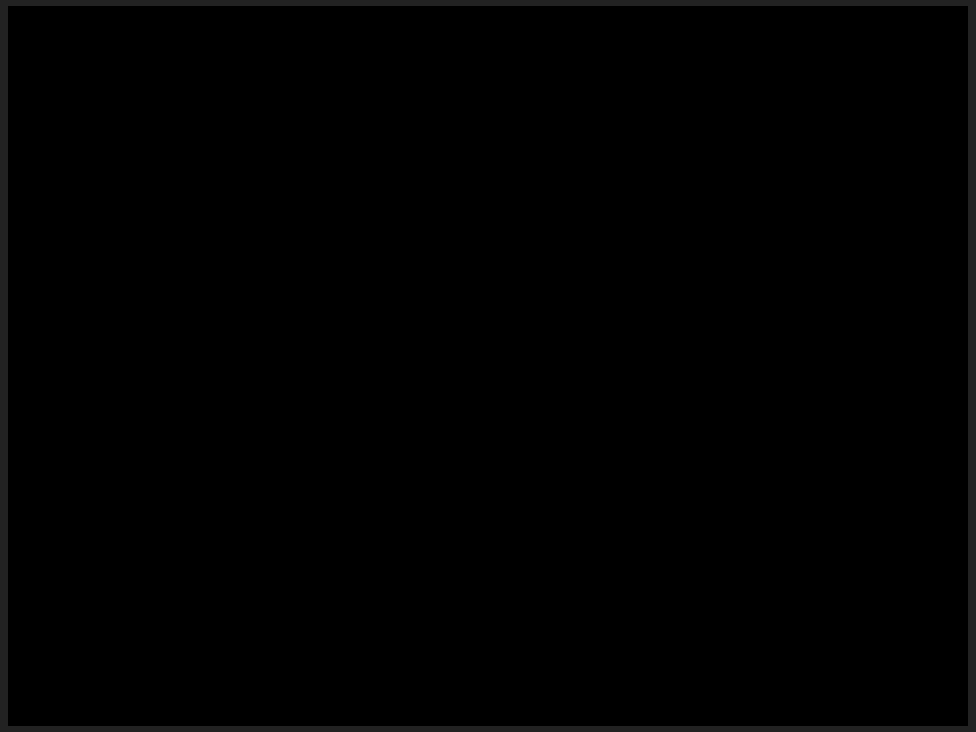


Malanushenko et al. (2021)

Virtual Reality

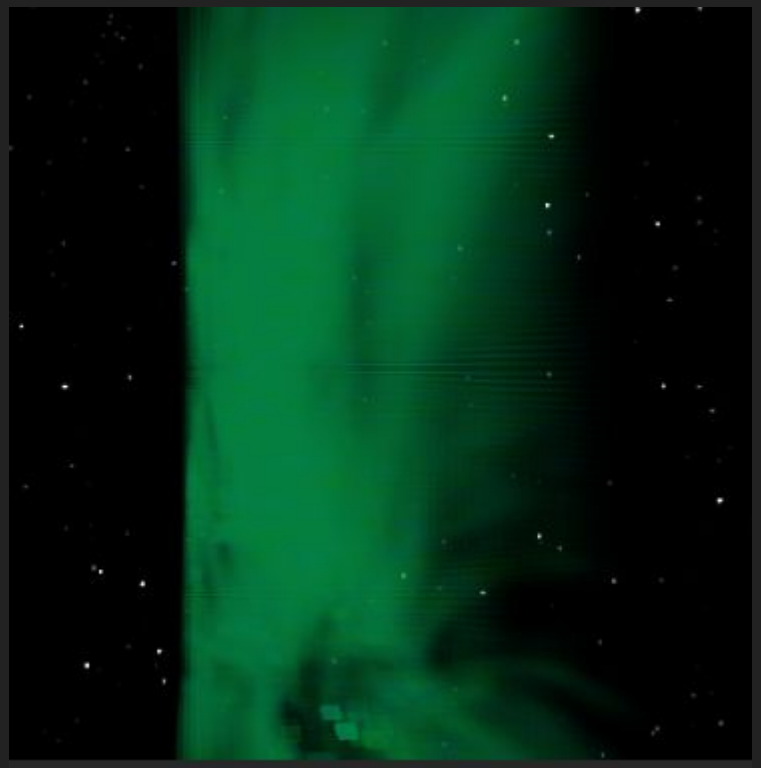


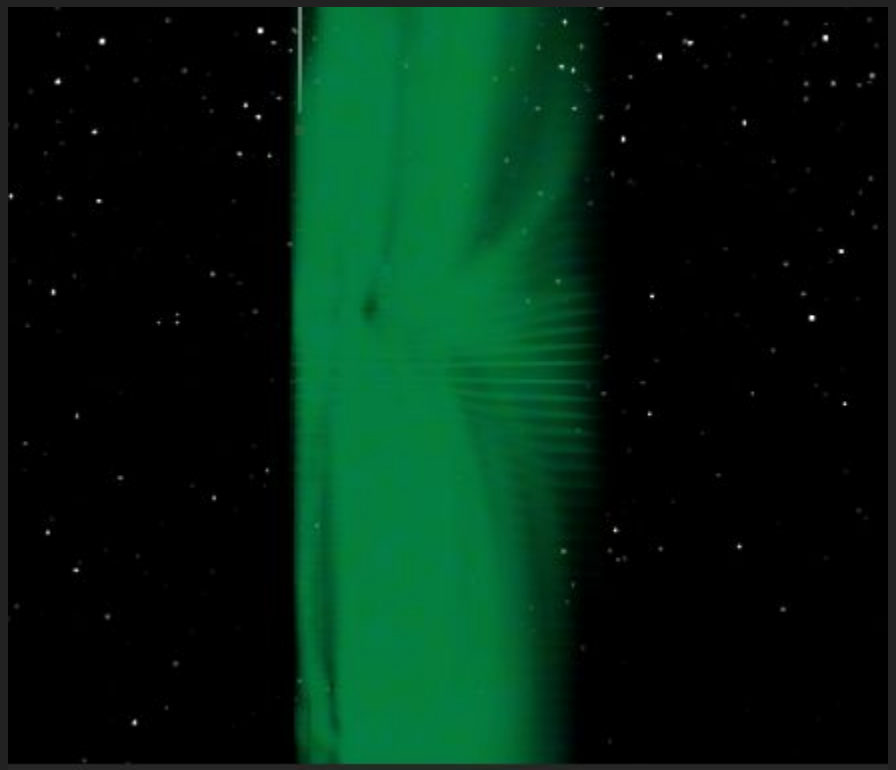
Virtual Reality



Virtual Reality

Virtual Reality





Applications & Future Prospects

- Exploration
- Selection
- Interaction
- Education
- Expand data range
- Port to more capable hardware
- Introduce new controls
- Improve physical realism

Questions?