AuroraX and aurorax-asilib: a user-friendly auroral all-sky imager analysis framework

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Key Points:

- AuroraX is a seamless online interface to visualize the aurora
- aurorax-asilib is a Python package for the detailed analysis of auroral all-sky imager data
- Together, these tools lower the barriers to entry for scientists who want to study the aurora

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Abstract

Abstract

Plain Language Summary

Test

1 Introduction

OUTLINE

- Brief history of ASIs and ASI arrays. Talk about why THEMIS ASI exists.
- Why this software? Aurora ASI data formats very greatly, each with their own caveats. Our goal is to remove the need for scientists needing to write duplicate code to use these popular missions. AS a result, this will enable scientists to dive right into the science and not need to know the details of data management (downloading and loading data, as well as applying routine data processing steps)

1.1 Design Philosophy

2 AuroraX

OUTLINE

- A highly optimized conjunction search
- On-demand keograms
- Virtual Observatory
- What is the difference between swarm-aurora and Conjunction Search? The're confusingly similar.

3 aurorax-asilib

OUTLINE

- Plug-in based architecture
- Handles the downloading and loading of ASI images. Ultimately, ASI image files consists of time stamps and images, so the load data is equally as simple.
- Similarly with skymap calibration files.
- If a file is already downloaded, you do not need an internet connection to work with the data.
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OUTLINE

- asilib on GitHub. unit and integration tests run automatically before every release.
- THEMIS and REGO data formats are set and won't change.

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