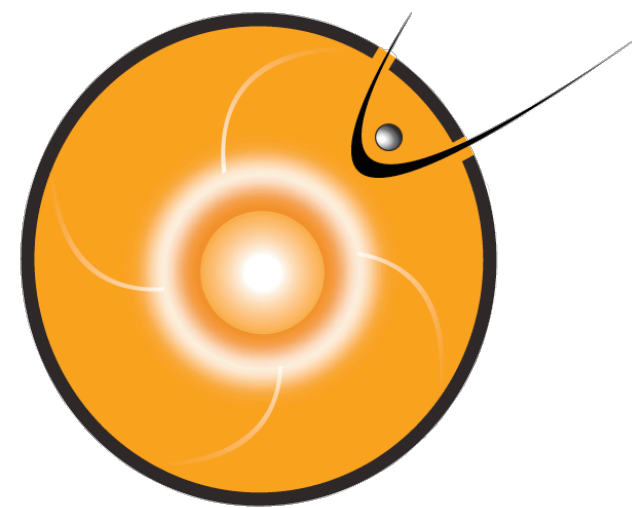


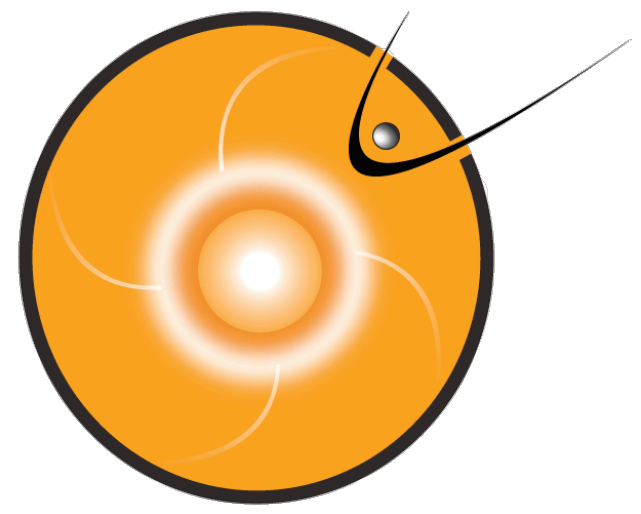
New Visualization and Analysis Tools for Magnetospheric, Heliospheric, and Solar Models



Presented by: David Hyon Berrios

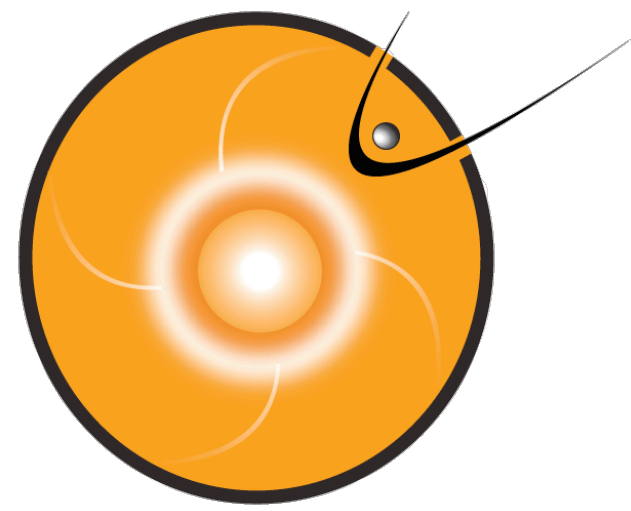
Community Coordinated Modeling Center
NASA Goddard Space Flight Center





Overview

- Introduction
- Kameleon library
- Space Weather Explorer
- Data streaming service
- Future
- Summary



Introduction

CCMC: Community Coordina X

http://ccmc.gsfc.nasa.gov/

COMMUNITY COORDINATED MODELING CENTER

Related Links | Frequently Asked Questions | Community Feedback | Downloads | Sitemap

About US | Space Weather Models at CCMC | Request A Model Run | View Model Run Results | Instant Run | Experimental Real-Time Simulations

CCMC Mission Statement

The CCMC is a multi-agency partnership to enable, support and perform the research and development for next-generation space science and space weather models.

CCMC Services

- We provide, to the scientific community, access to modern space research models
- We test and evaluate models
- We support Space Weather forecasters
- We support space science education

Latest Additions to the CCMC Services

- **Integrated Space Weather Analysis System** is a web-based dissemination system for NASA-relevant space weather information.
- **Space Weather Awareness at NASA** space weather information portal.
- **LWS Supported Tools and Methods**
- **Kameleon software**: model output from different models can now be stored uniformly in a common science

CEDAR ETI Challenge

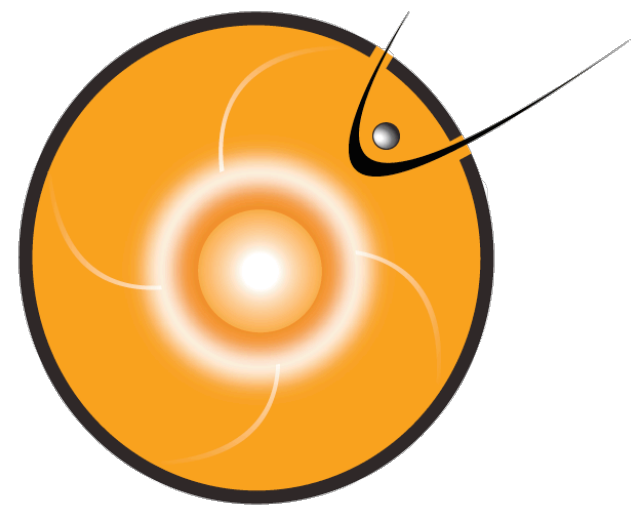
CCMC is supporting CEDAR Electrodynamics Thermosphere Ionosphere (ETI) Modeling Challenge. The outcome of the preliminary round of model output comparisons will be discussed at the [CEDAR 2010 Workshop](#) (June 25, 2010, 10:30 - 12:30). To participate in this first round of the Challenge please submit your model results using CCMC on-line [submission interface](#) prior to June 1st, 2010. [Find out more](#)

GEM Modeling Challenge

CCMC is supporting GEM Modeling Challenge organized by

<http://ccmc.gsfc.nasa.gov>

Introduction • Kameleon • Space Weather Explorer • Data Streaming • Future • Summary

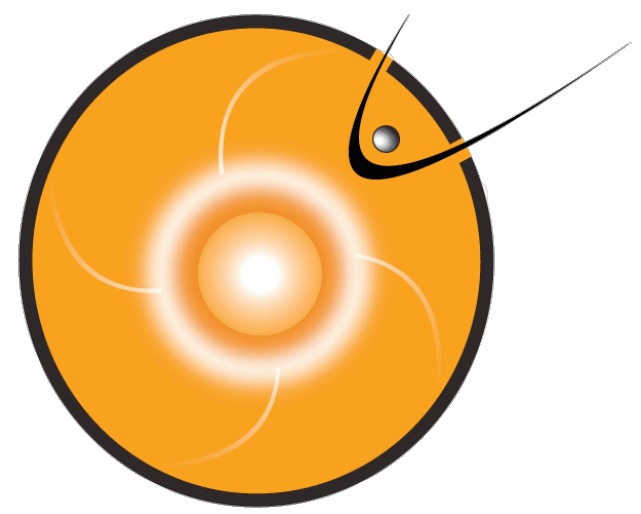


Software suite that consists of two parts

1. Conversion software

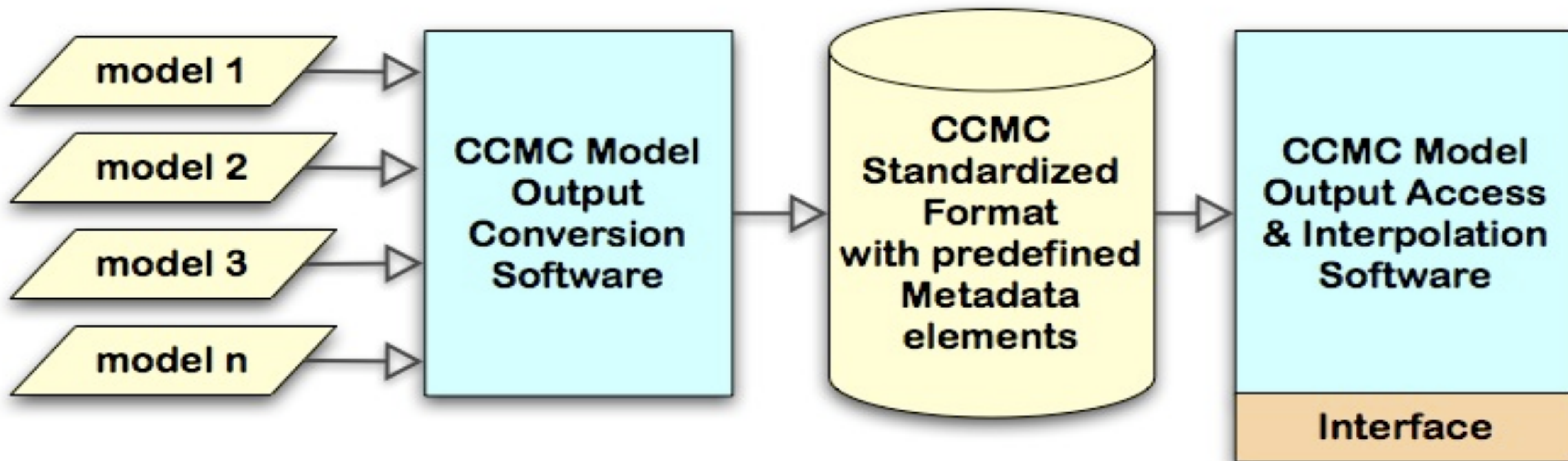
2. Access and interpolation software

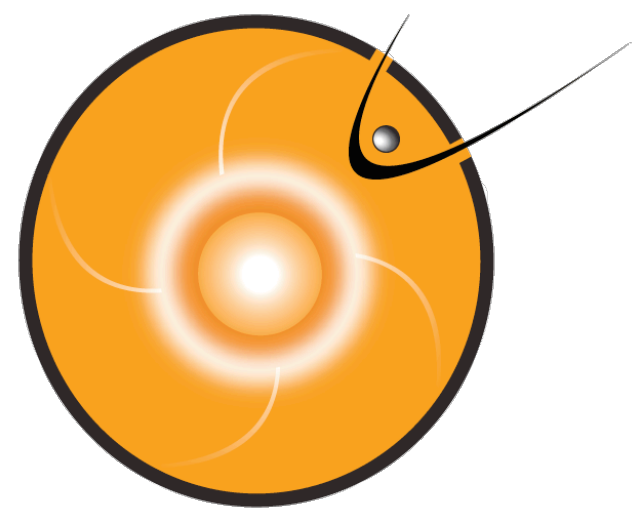
Introduction ● [Kameleon](#) ● Space Weather Explorer ● Data Streaming ● Future ● Summary



Kameleon Library

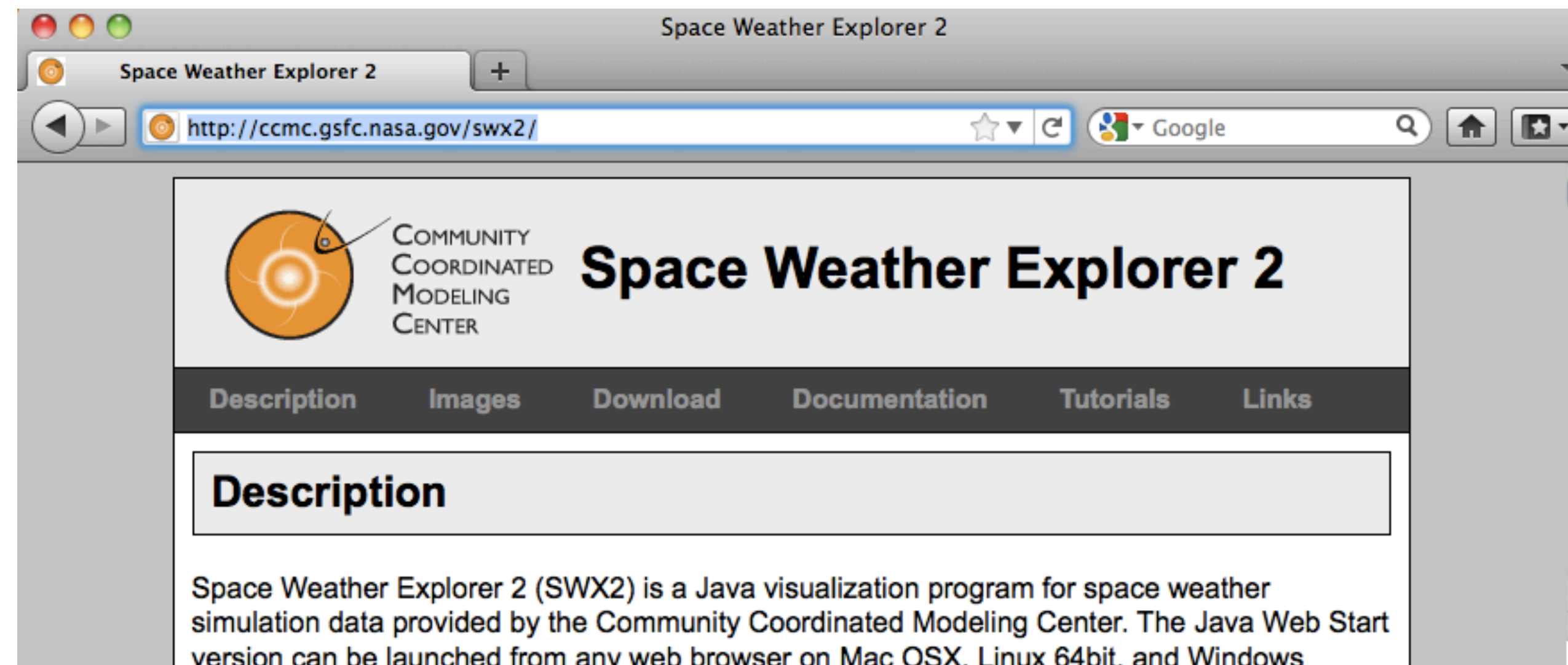
Data access and interpolation library provides a single common interface for all supported models.



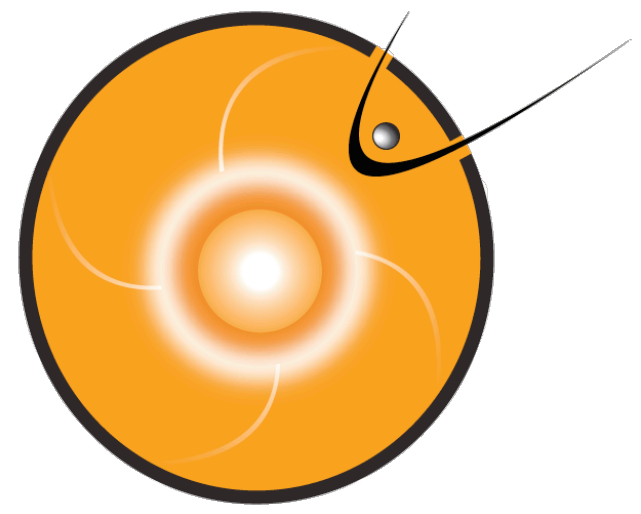


Space Weather Explorer 2

- Java-based 3D visualization program
- Supports multiple models
- Requires no installation!



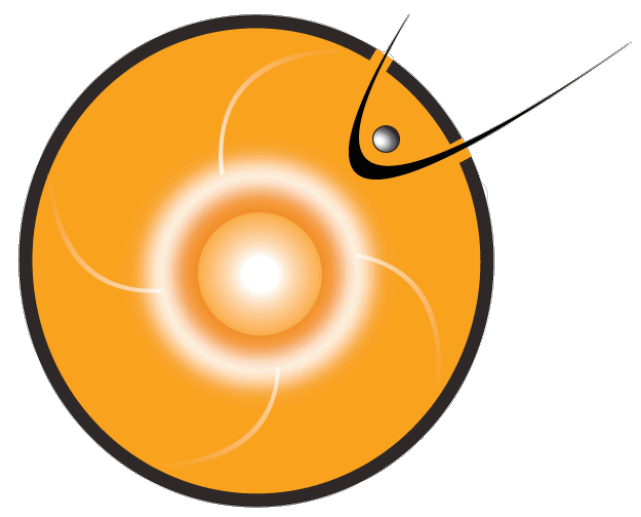
Introduction • Kameleon • [Space Weather Explorer](#) • Data Streaming • Future • Summary



Space Weather Explorer 2

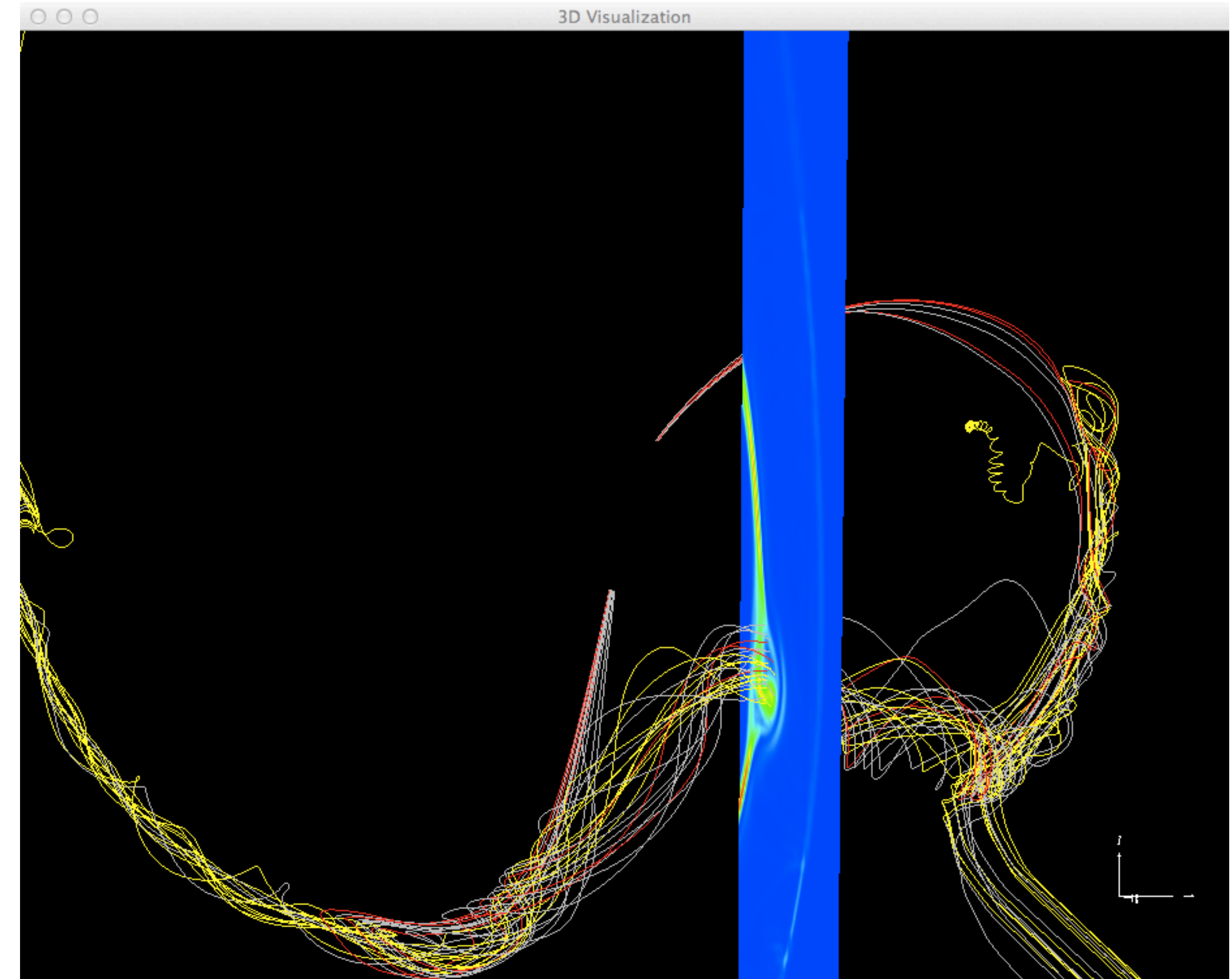
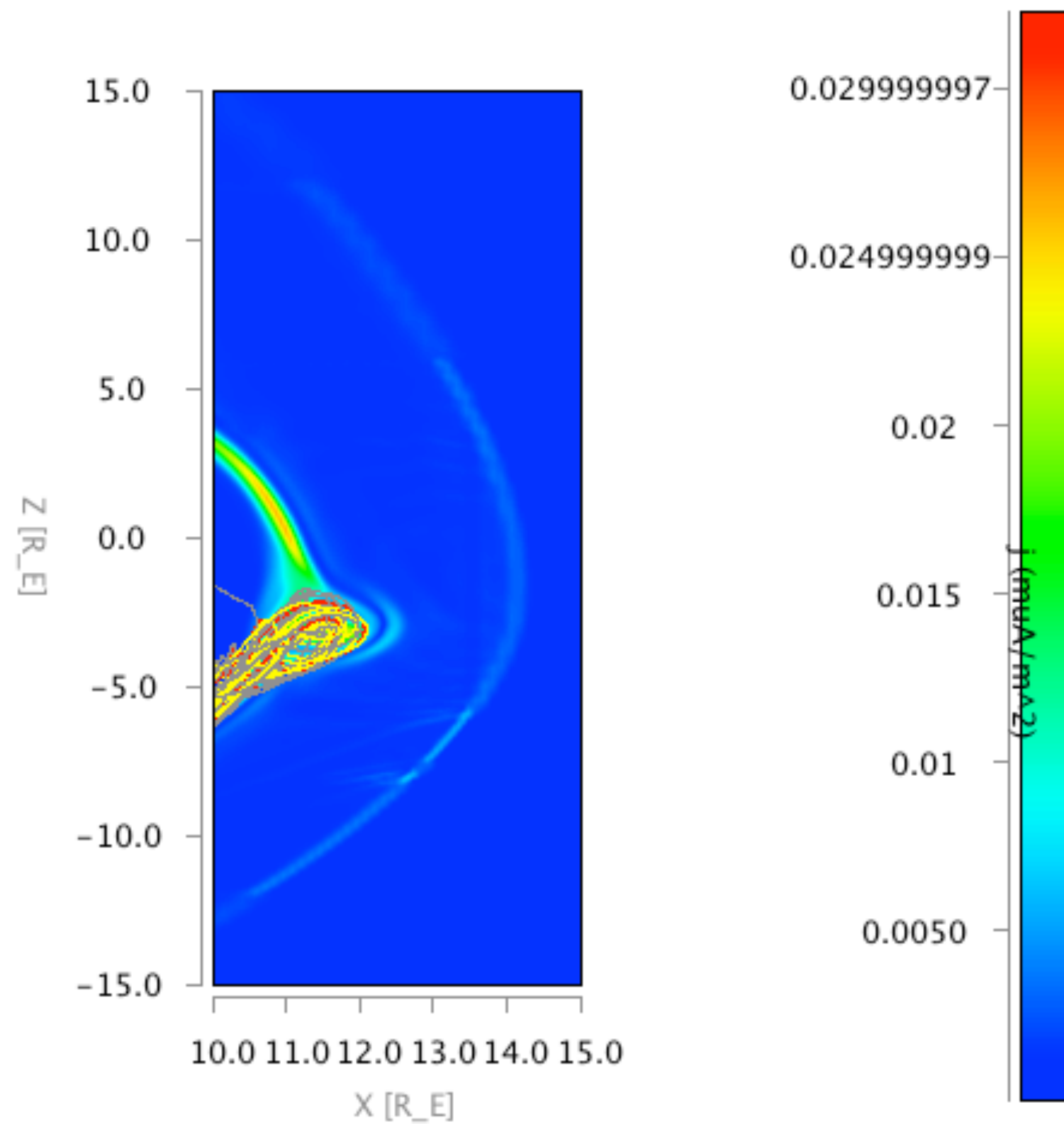
- 2D and 3D visualizations
- Support for multiple models
- Multiple ways of initiating fieldline calculations: clicking, importing
- Export saved state, images, seed position information
- Interactive and simple to use!

Introduction • Kameleon • **Space Weather Explorer** • Data Streaming • Future • Summary

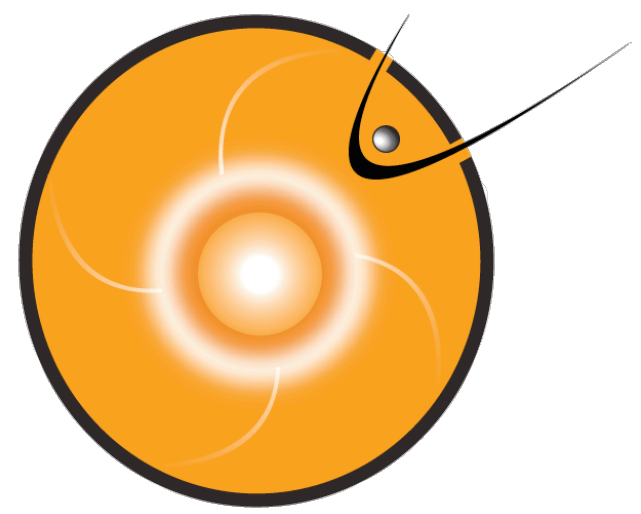


Space Weather Explorer 2

- 2D and 3D visualizations

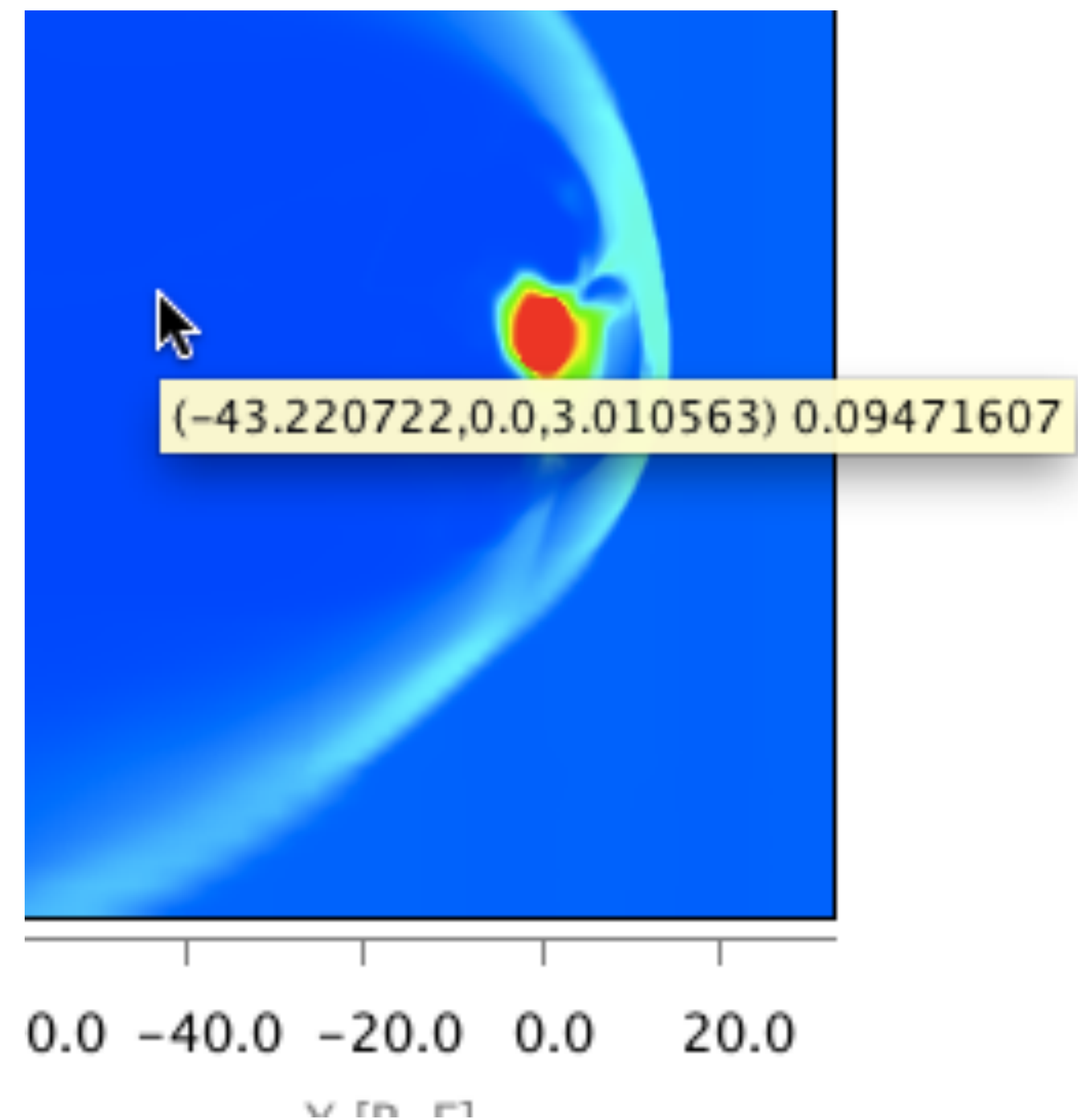
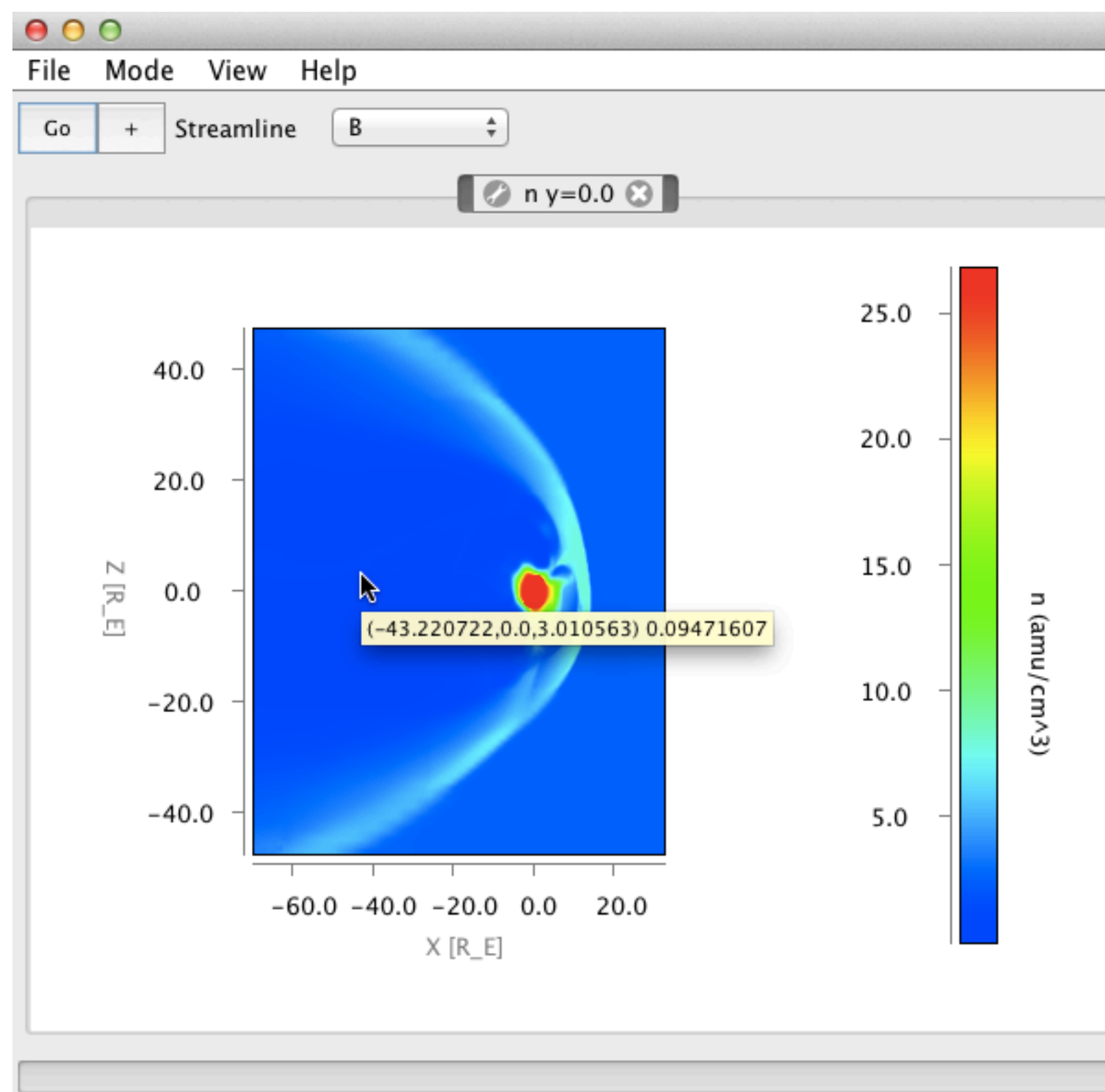


Introduction • Kameleon • **Space Weather Explorer** • Data Streaming • Future • Summary

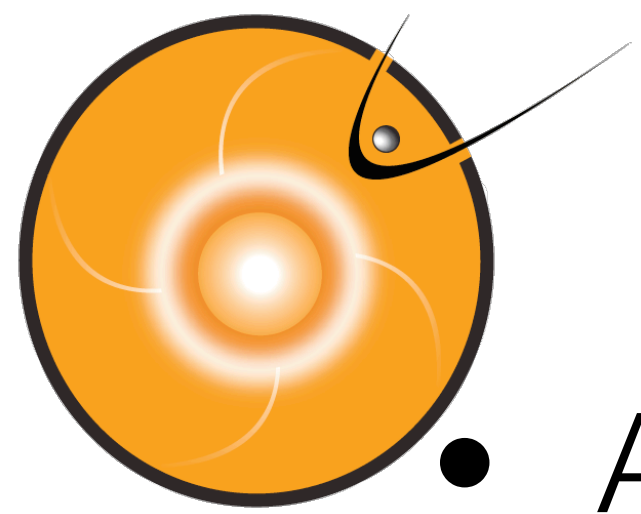


Space Weather Explorer 2

- Intuitive interaction

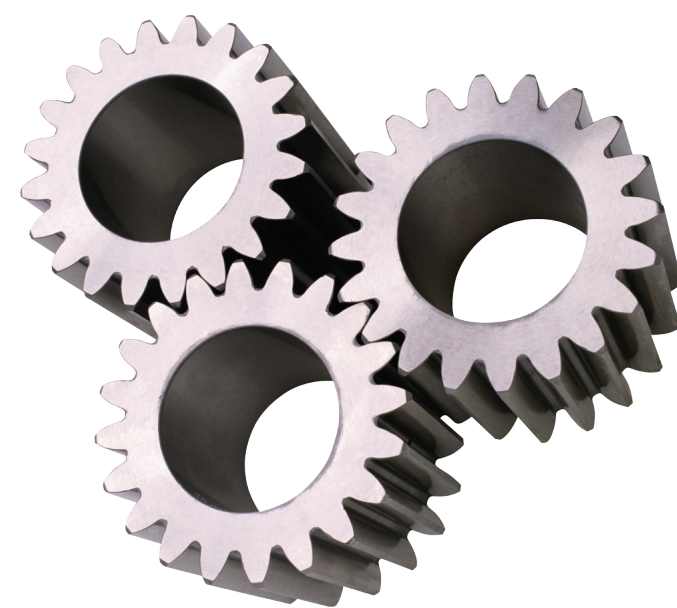


Introduction • Kameleon • [Space Weather Explorer](#) • Data Streaming • Future • Summary

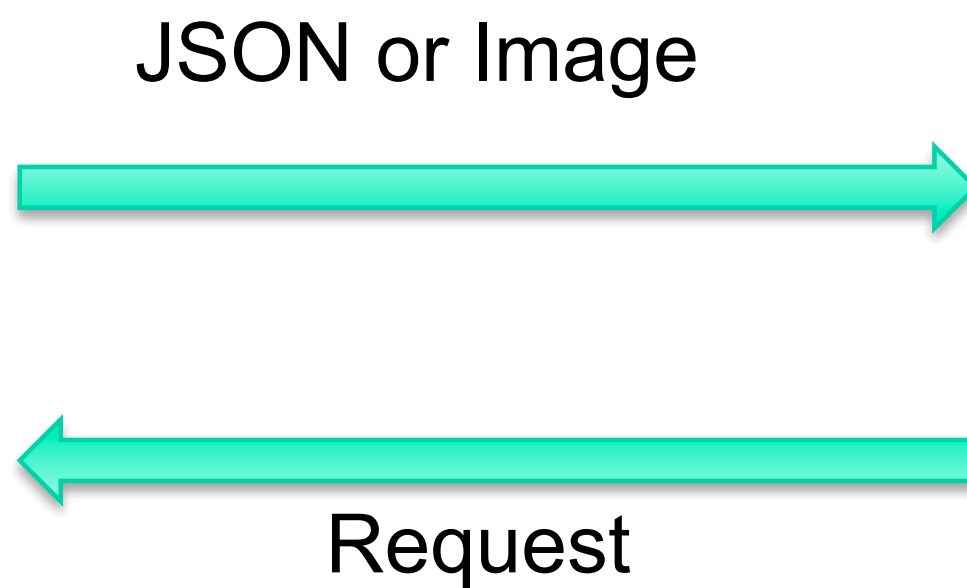


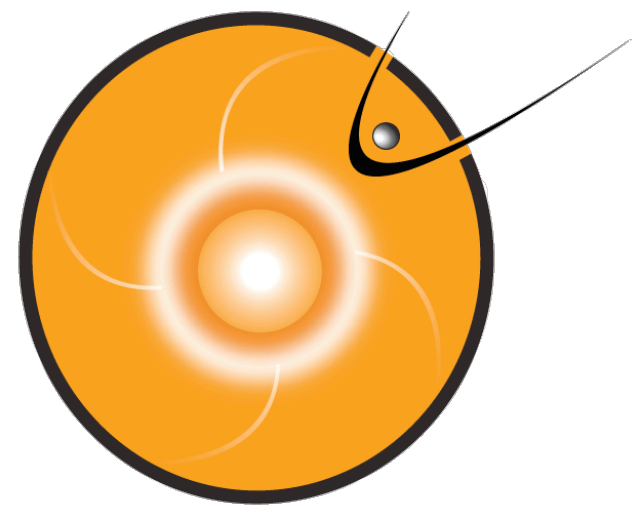
Data Streaming

- API to request interpolated data, visualization structures, and images
- Request encoded in URL to webserver
- Data processed on server using Kameleon
- Data sent to client in JSON or image format



CCMC

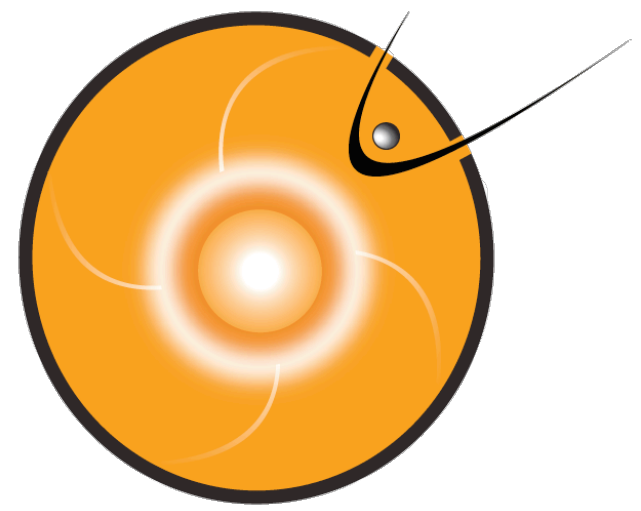




Web-based visualizations

- WebGL and data streaming service
- Collaborative visualizations

Introduction • Kameleon • Space Weather Explorer • Data Streaming • **Future** • Summary



Summary

- Kameleon - <http://ccmc.gsfc.nasa.gov>
- Space Weather Explorer 2 - <http://ccmc.gsfc.nasa.gov/swx2>
- WebGL and HTML5 version of Space Weather Explorer - soon!
- Collaborative tools