Embedding Educational Material into ISWA (and feedback)

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What is Integrated Space Weather Analysis (ISWA) System?

Web-based dissemination system for NASA-relevant space weather information

What does it do?

Combines forecasts based on advanced space weather models with concurrent space environment information. Provides images, line plots, 2-D renderings with multi-perspective view

How is it used?

Operators- Monitoring, decision-making tool/aid, post event analysis

Educators/Sophisticated Users-

Source of broad spectrum "instances" of model output and observations

Ensembles, composites, consolidation of data

Each model output/observation instance is in a time sequenced/ fixed format

ISWA layouts can be configured/reconfigured to explore space weather event chain

Develop case studies

What's new at CCMC?

Novice students/Interested Professionals- SWREDI / Bootcamp

Public Users- Homework and Curiosity-driven inquiries

Is more needed?

CCMC Infrastructure (Highlights)-ISWA

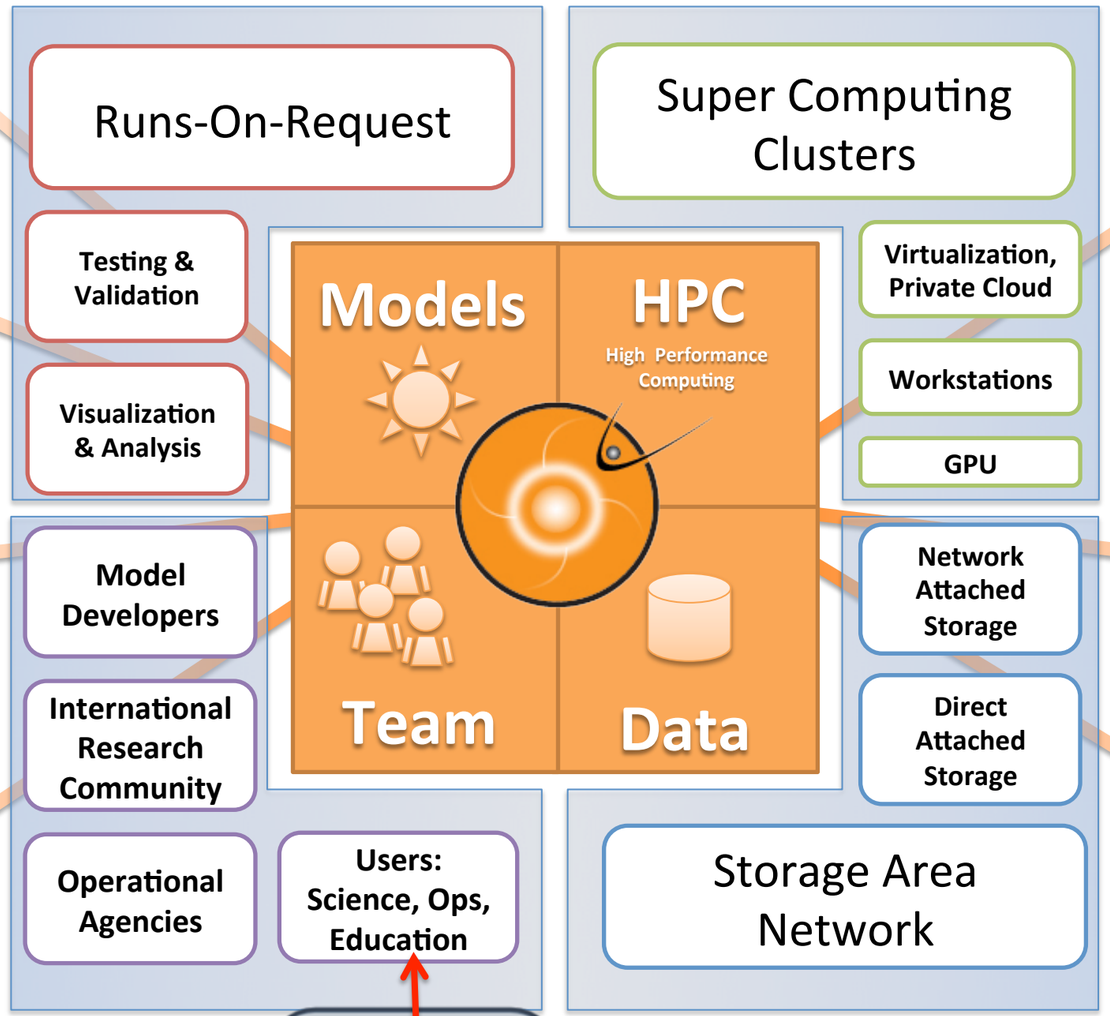
RoR
Next Gen

FlexDIT

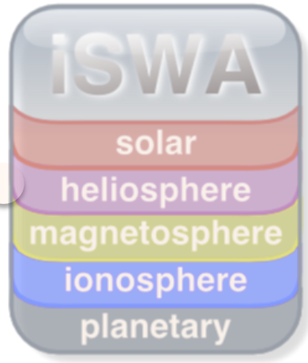
Flexible Data Ingestion Tool

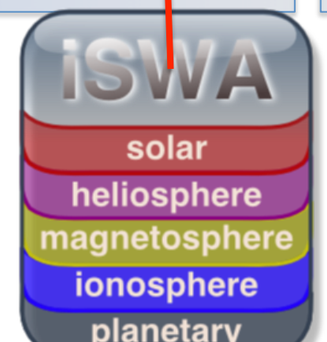
StereoCat

Space Weather
Scoreboard



DONKI





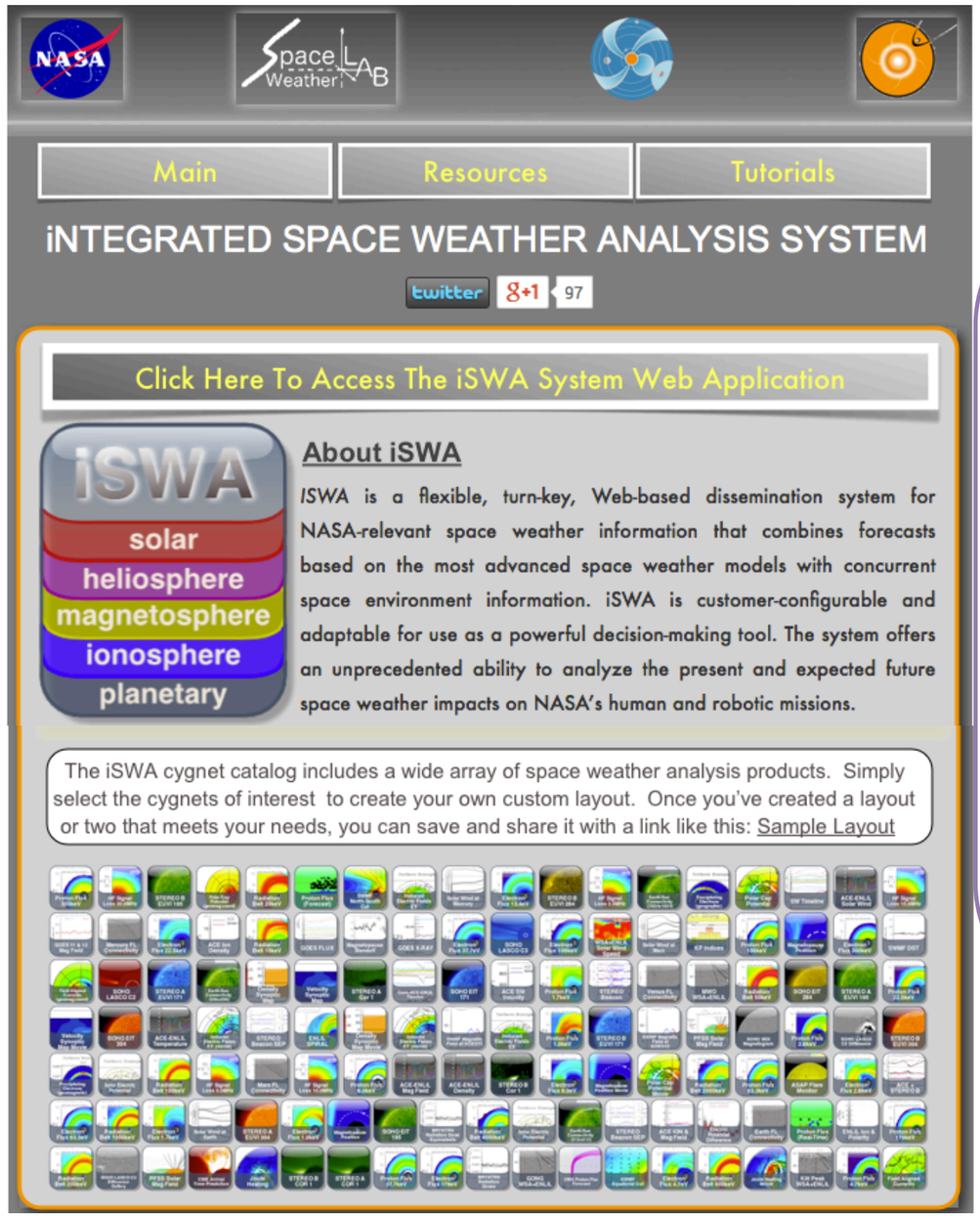
KameleonJ, Kameleon+

Integrated Space Weather Analysis

Data and Product Push:

"Web-based dissemination system for NASA-relevant space weather information"

Users are "knowledgeable" of their needs and products related to these needs



User/Education Pull:

Web-based window into CCMC's vast array of models and data

Users are unsure/unaware of their needs and products related to these needs

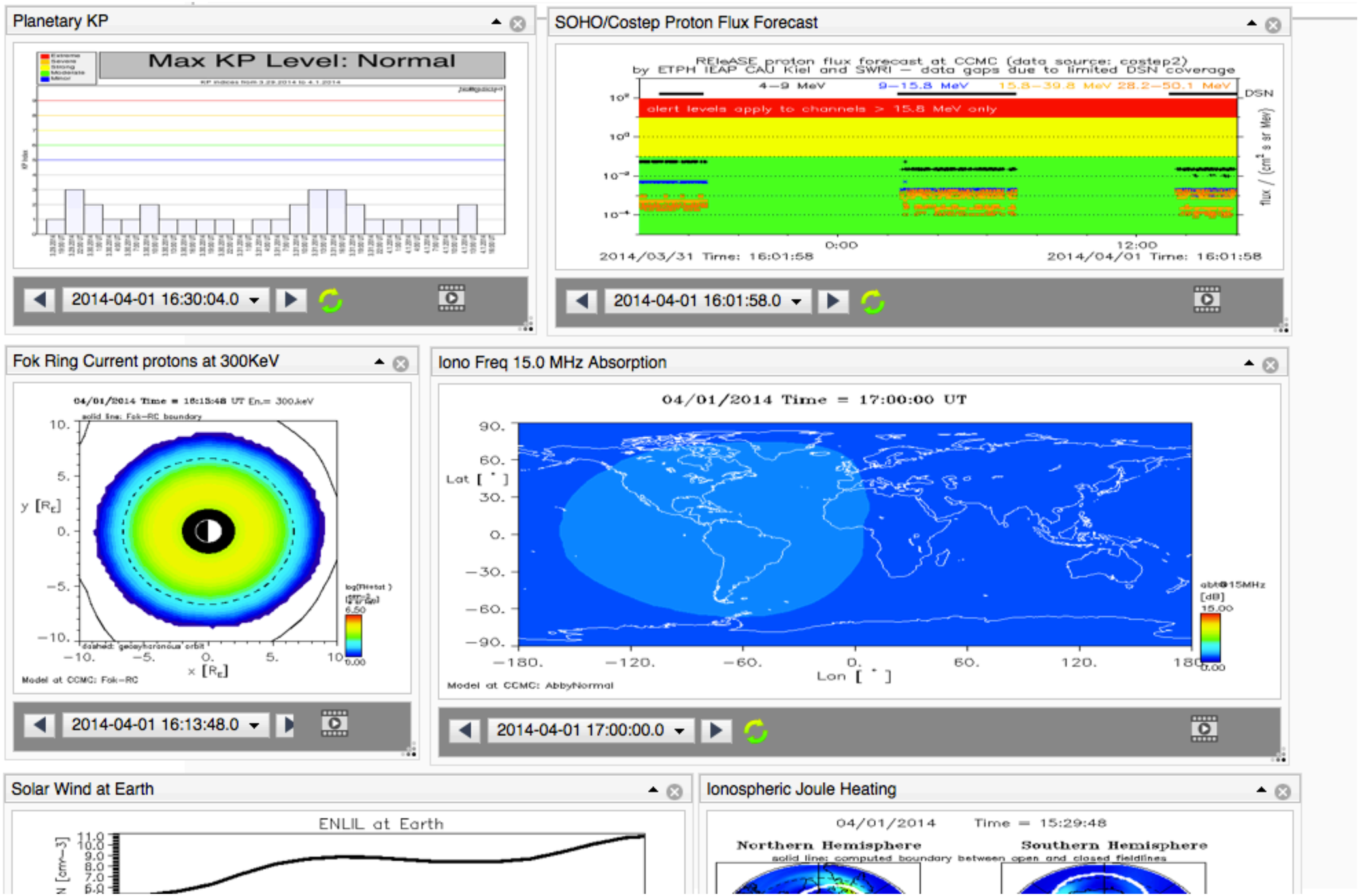
ISWA Catalog

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

More than 500 "cygnets"!

Cygnet= small unit of information including visuals, movies, and short explanations

SAMPLE LAYOUT



Layout = Array of interactive product images,
usually for a monitoring, forecasting or post event analysis application

http://iswa.ccmc.gsfc.nasa.gov/wiki/index.php/Glossary

Glossary of Space Weather related terms

A

ambient solar wind
the outflow of the Sun's ionized atmosphere into interplanetary space

ACE
the Advanced Composition Explorer (ACE) spacecraft is positioned on the
that will impact Earth. Glossary/ACE

active regions
A disturbed volume of the Sun's atmosphere that often consists of (from bo
release significant amounts of energy during magnetic eruptions that produ

ambient solar wind
the outflow of the Sun's ionized atmosphere into interplanetary space

aurora
transient displays of light, often displaying as moving curtains and rays, at l

auroral region
oval-shaped, high-latitude zone centered on the geomagnetic pole, in whic

auroral activity
usually refers to visible aurora and the particles that create them, but may a
hemispheric power

auroral boundary
The high and low latitude edges of the auroral zone, typically 72 deg (polev

auroral precipitation
ionized particles that fall, or are accelerated, into Earth's atmosphere to cre

C

Carrington event

An atmospheric layer in which a small fraction of electrons have bee
particles, with sufficient energy, strip the electrons to produce a wea

ionospheric disturbance

ionospheric effects of a solar flare

K

KeV
Kilo electron Volt - see electron Volt

kinematic properties of a CME

Kp Index
The Kp index indicates the magnitude of geomagnetic disturbance
shows a three-day history of the real-time Kp index in 3 hours perio
page. [2]

L

L1 magnetic field observations

L1 point
Lagrange Point 1 is an (unstable) gravitational fix point between the
spacecraft are in orbit around the L1 point.

leading edge of the CME /nose of the CME front

LEO orbit

M

magnetic connectivity

magnetic polarity

magnetopause

magnetopause compression

magnetopause standoff distance

magnetosphere
The region of space dominated by the magnetic field of a star or pla

Glossary/magnetosphere

magnetospheric plasma

http://iswa3.ccmc.gsfc.nasa.gov/wiki/index.php/KP_Indices

Navigation

Main page
Recent changes
Help
FAQ

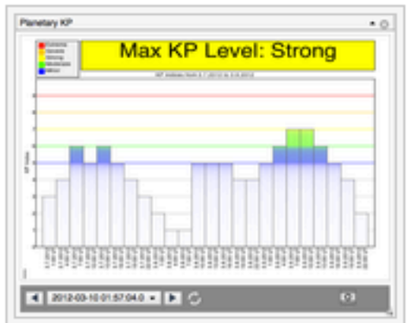
Links

iSWA
iSWA Tutorials
CCMC
NASA Anomaly Database

Toolbox

What links here
Related changes
Special pages
Printable version
Permanent link

KP Indices



Three day KP

Kp Index

The Kp index reports the magnitude of geomagnetic disturbance on a 0-9 scale, with zero being very quiet and 9 indicating an extreme geomagnetic storm. The index has a three hour cadence. This cygnet shows a three-day history of the real-time Kp index produced by the NOAA Space Weather Prediction Center.

Description

Kp is an indicator of the disturbance level in Earth's mid- and high-latitude magnetic field compared to a quiet day. Higher values of Kp are associated with geomagnetic storming, the appearance of auroral lights at lower than normal latitudes, and stronger linkages between Earth's upper atmosphere and magnetosphere. The official index and most real-time versions of the index cover three-hour intervals in Universal Coordinated Time (UT) beginning with 00-03 UT, and progressing through the end of the UT day. There are no units associated with the Kp index. Rather the index values relate to classes of geomagnetic activity: quiet, unsettled, and storm level. In the cygnet the colored horizontal lines indicate the level of geomagnetic storming listed in the legend.

The Kp scale is a relative scale and varies from 0-9, with "0" indicating no disturbance from background, and "9" indicating a severe disturbance associated with an extreme

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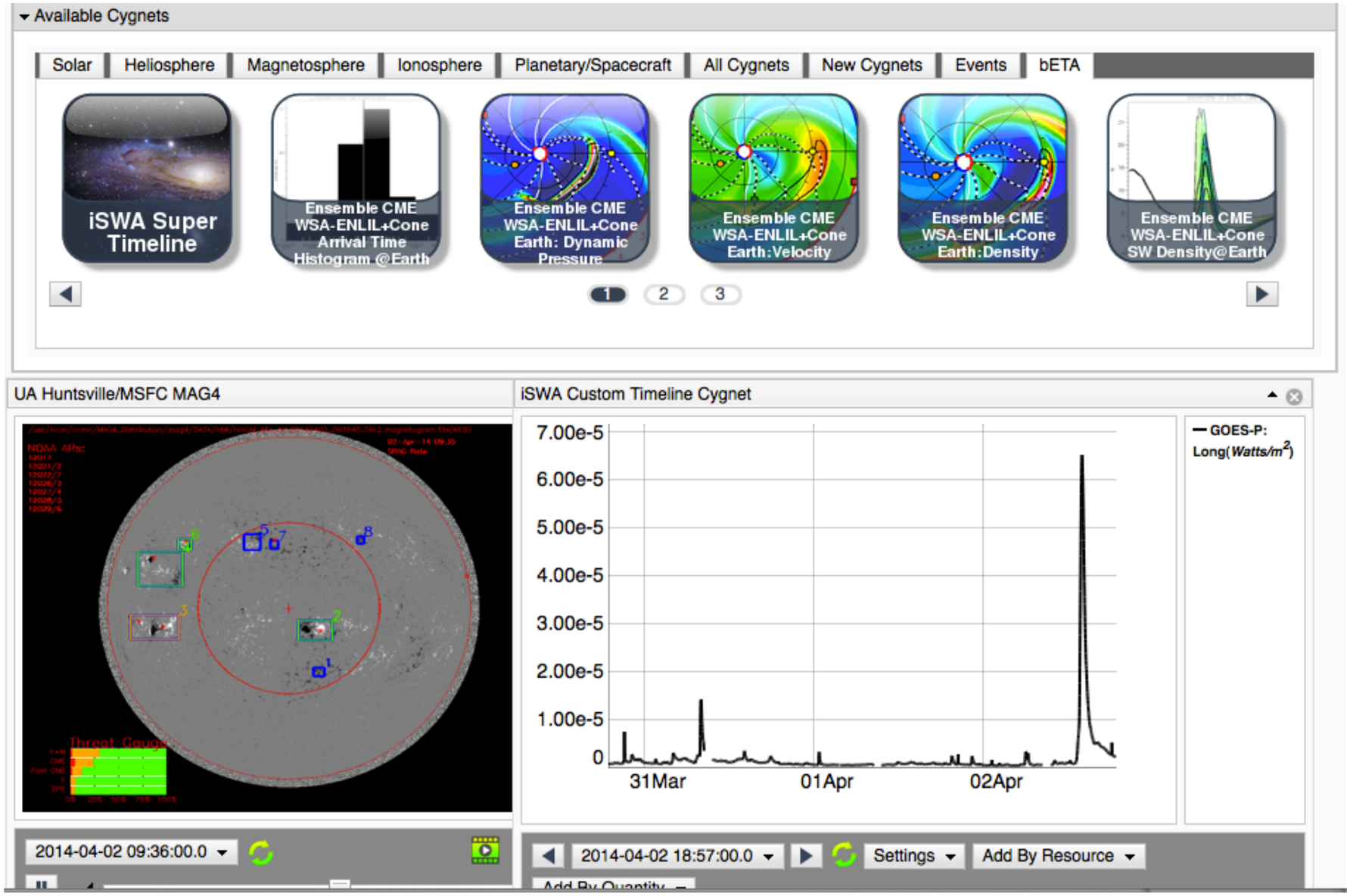
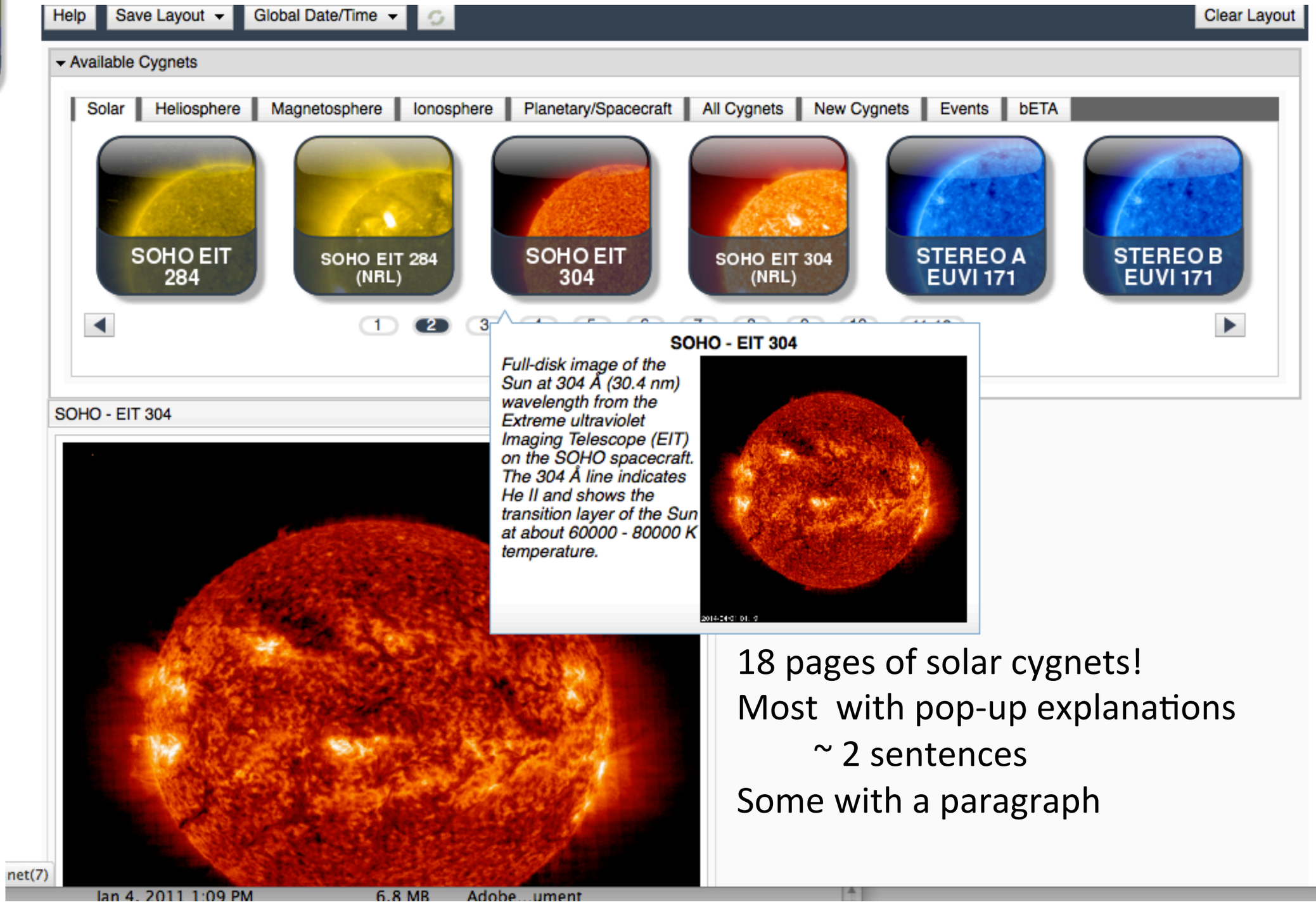
http://iswa.ccmc.gsfc.nasa.gov/IswaSystemWebApp/index.jsp?clear=1



iSWA
solar
heliosphere
magnetosphere
ionosphere
planetary

Solar Domain



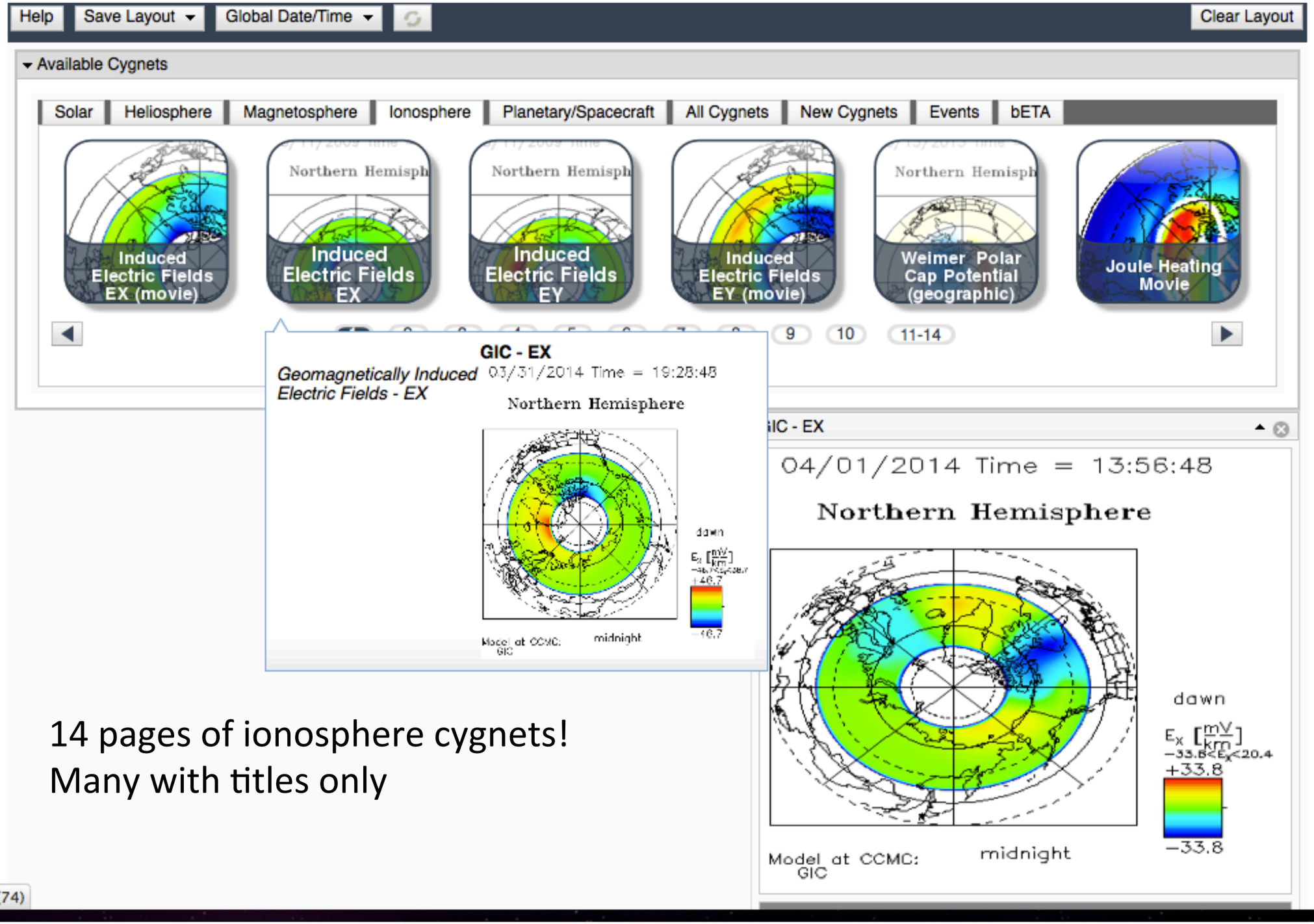
18 pages of solar cygnets!

Most with pop-up explanations

~ 2 sentences

Some with a paragraph

Ionosphere Domain



14 pages of ionosphere cygnets!
Many with titles only

ISWA Cygnet Catalog List

http://tinyurl.com/Full-ISWA-Cygnet-List:

Examples

SOHO_EIT_17.1 nm

Basic Entry

GOES_Primary_Proton_flux_Interactive_Timeline

Functional Entry

SDO AIA 17.1 nm

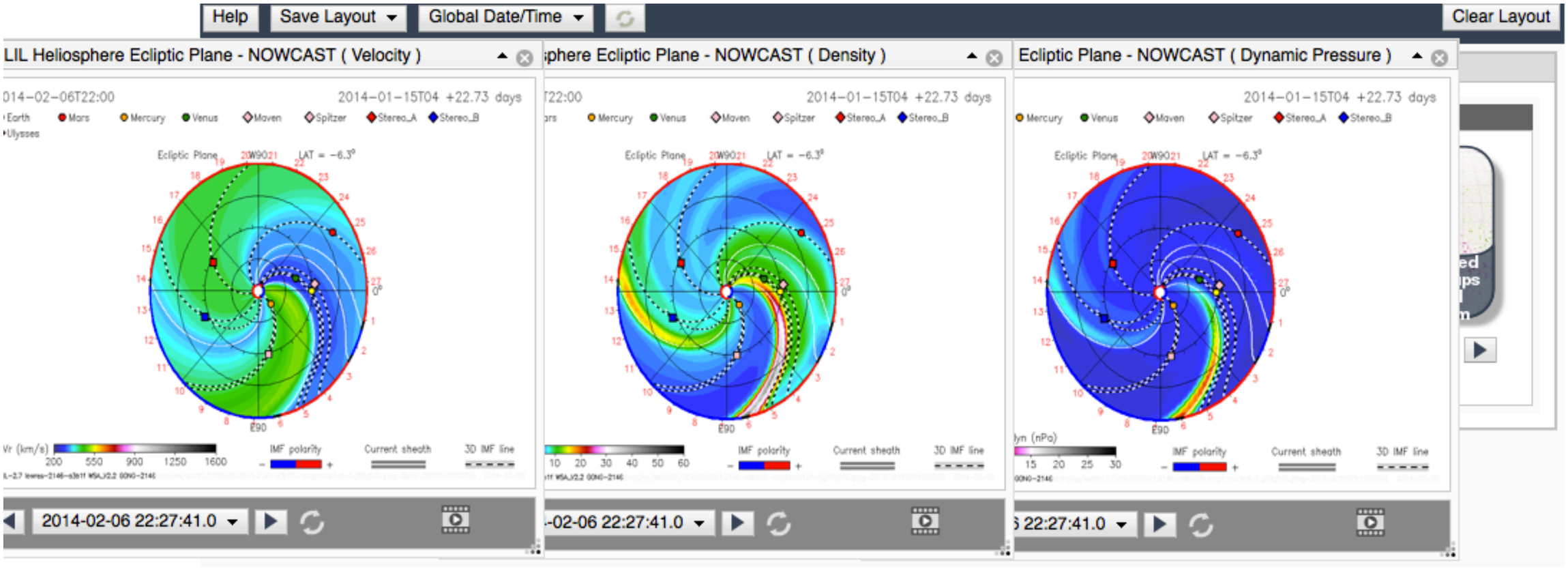
Full Wiki Entry

SDO_EVE_MEGS-SAM

Needs Work Entry

http://iswa.ccmc.gsfc.nasa.gov/wiki/index.php/Main_Page

http://iswa.ccmc.gsfc.nasa.gov/IswaSystemWebApp/index.jsp?i_1=427&l_1=597&t_1=26&w_1=415&h_1=362&s_1=2014-02-06 22:27:41.0_0_10_3&i_2=425&l_2=303&t_2=26&w_2=399&h_2=361&s_2=2014-02-06 22:27:41.0_0_10_3&i_3=423&l_3=-22&t_3=26&w_3=397&h_3=360&s_3=2014-02-06 22:27:41.0_0_10_3



ENLIL Dynamic Pressure (Inner Planets)

There is currently no text in this page. You can search for this page title in other pages, or search the related logs, but you do not have permission to create this page.

ENLIL Explanation

Front End Improvement for ISWA Catalog

-Interactive interface (rollover) and

-Organized and searchable by category on front page

Basic Categories:

Space Weather Domain,

Type (Model/Obs/Fcst),

Cause/Effect

Searchable Keyword

Most Accessed

Tree/branch Layout

- Are all of these Cygnets Useful?

Layout/Cygnet Improvement for ISWA Catalog and Wiki

Provide a “explanation/glossary” option for every cygnet

“Rollover” short explanation for all cygnets

Determine glossary content/Finish ISWA glossary

Provide wiki content for every cygnet

Provide wiki content for key concepts related to cygnets

Standardize the links

Develop tool to shorten URLs

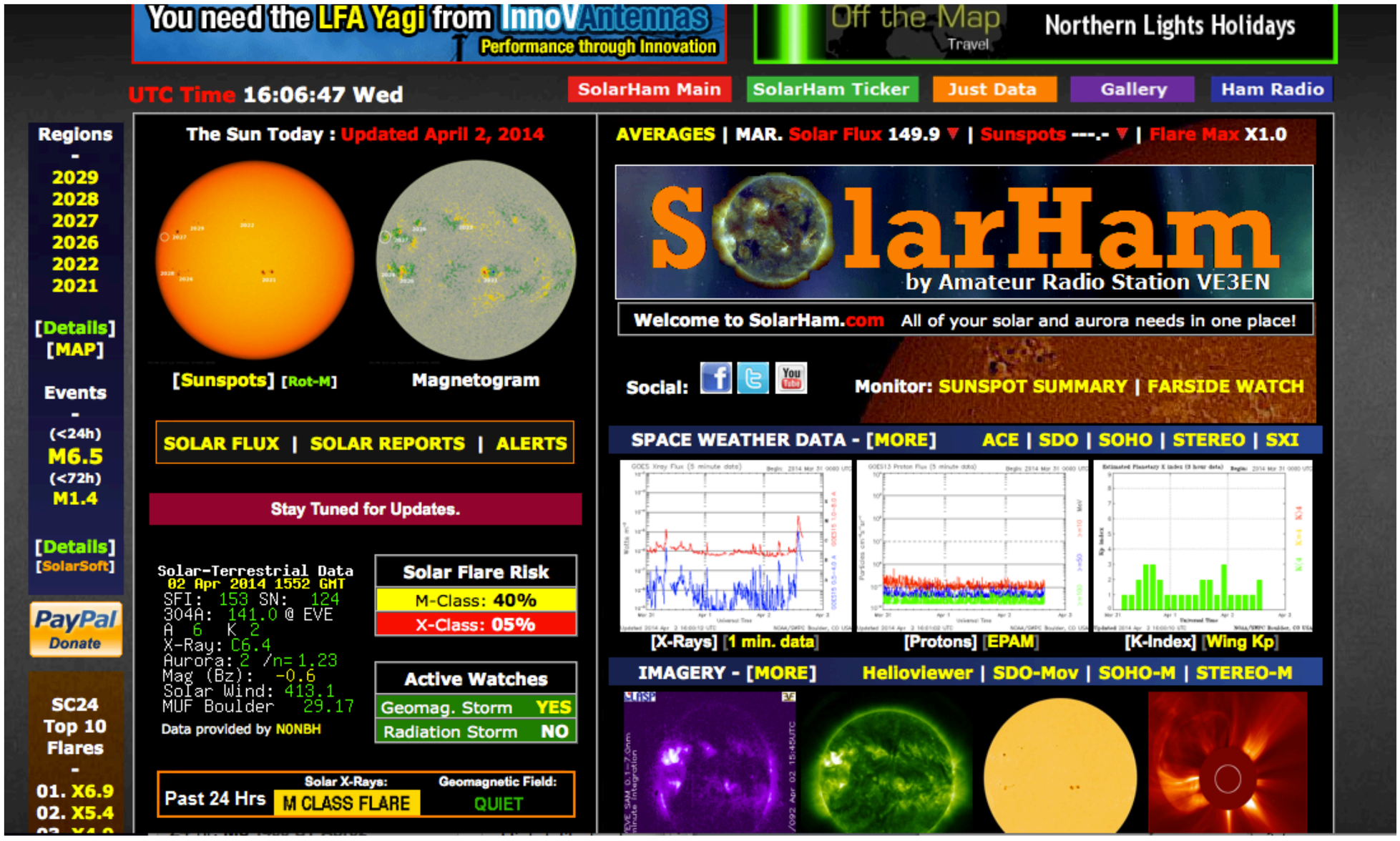
Include cross links to related material/cygnets

Basic vs Advanced Explanation option

Tree/Branch Knowledge Layout

Crowd Supported Data Access

Solar Ham



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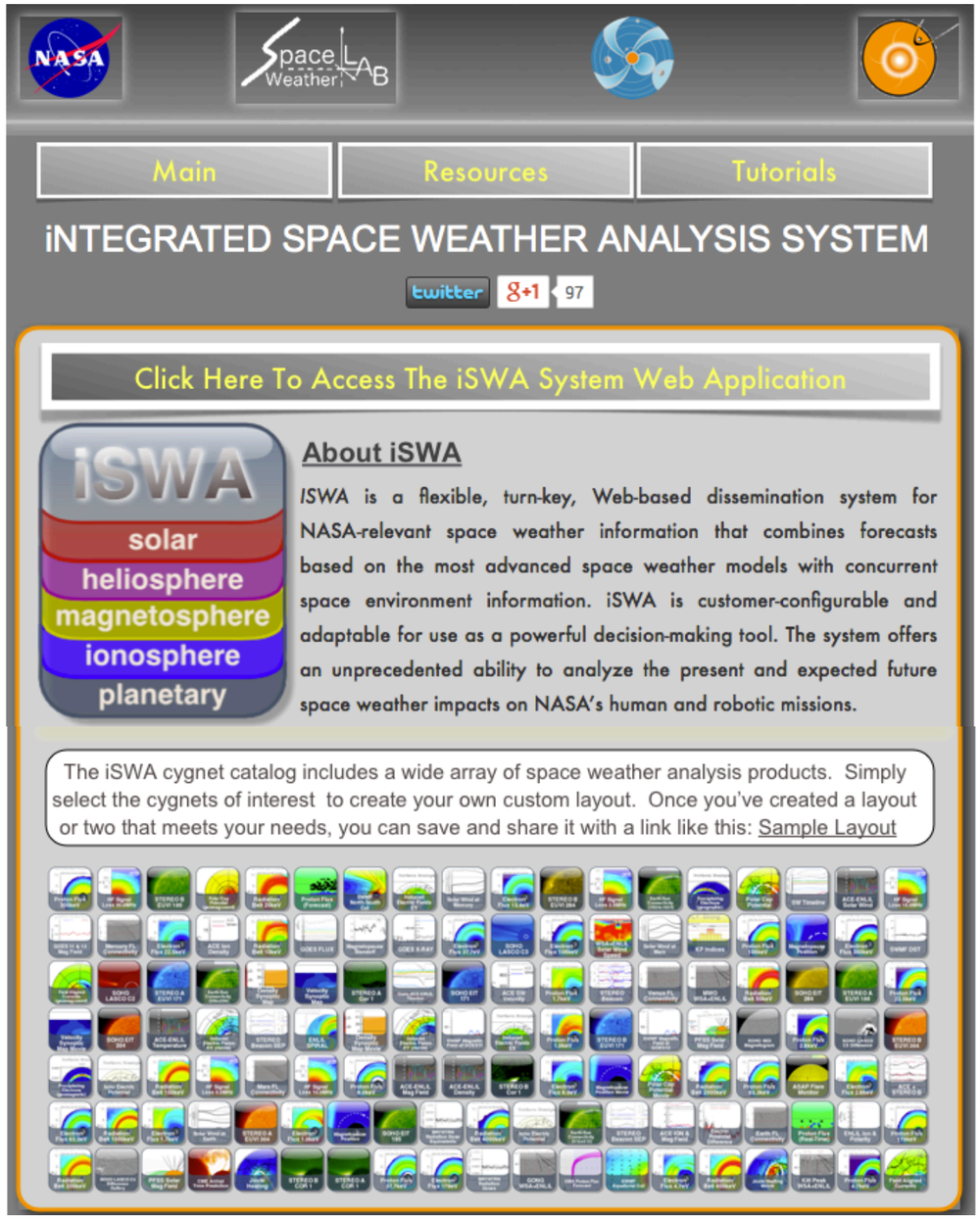
Users are "knowledgeable" of their needs and products related to these needs

Additional levels/ categories of organization would be helpful

Access to more background information would be helpful

Vast amount of SW information in central location



User/Education Pull:

Web-based window into CCMC's vast array of models and data

Users are <u>unsure/unaware</u> of their needs and products related to these needs

Additional levels/ categories of organization are needed

Access to more background information is essential