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International Earth Science Constellation Mission Operations Working Group Dec 03 - 05, 2019

Constellation Coordination System (CCS) Status

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Agenda

- CCS Purpose and Goals
- CCS 2019.2
- CCS Demo
- Questions

CCS Purpose and Goals

- CCS is a system for coordinating and monitoring constellation safety of the Earth Sciences Constellation (ESC) missions and is a central source of data sharing and operational planning.
 - Monitors the Constellation's configuration and status.
 - Supports information exchange between partner ESC missions.
 - Transfers critical data between the Mission Operation Centers (MOCs), Conjunction Assessment Risk Analysis (CARA), and other authorized mission users.
 - Provides automated health and safety monitoring and analysis tools.
 - Automated constellation safety warning notifications.
 - Graphical visualization of orbital data.
- The latest release, CCS 2019.2, was deployed to operations on 10/15/2019.

CCS 2019.2 New Features

Released: 15th of October 2019

- User Interface Updates – Site updated visually and functionally
 - CCS now looks and acts like most modern websites.
 - The site runs more smoothly on mac and a variety of browsers.
- New Homepage Plot – Spacecraft Position Map
 - Shows all spacecraft projected onto a natural earth projection.
- Tool Updates – Updates to the tools page and tools themselves
 - The tool pages have been unified into a single page for easier transitioning between tools.
 - Some tools now allow you to run the same analyses on different spacecraft at the same time.
 - Removed repetitive violation emails.
- Various Other “Quality of Life” Improvements

CCS 2019.2

Released: 15th of October 2019



18:25:33 UTC

Home

Status Flags

Afternoon Constellation

Categories	Aura	Aqua	GCOM-W1	OCO-2
Satellite	Green	Green	Green	Green
Instrument	Green	Green	Green	Green
Constellation	Green	Green	Green	Green

Morning Constellation

Categories	Landsat-8	Landsat-7	Terra
Satellite	Green	Green	Green
Instrument	Green	Green	Green
Constellation	Green	Green	Green

Homepage with the new banner and navigation tabs

CCS 2019.2

Released: 15th of October 2019

Welcome

Username or Email

Password

Verify

[Forgot Password](#)

[Register](#)

Two-Factor Authentication

Using a Time-based One Time Password (TOTP) application, enter the current 6-digit token and click Login.

Alternatively, you may click the below button to receive a login token via email. Once you receive that token, please enter the provided 12-digit token and click Login. The supplied token is valid for a single use within 15 minutes of its creation.

[Send Token Via Email](#)

Two-Factor Token

Login

Request Two-Factor Reset

Cancel

New Login Options - Login with your email, and get two factor codes sent to your email

CCS 2019.2

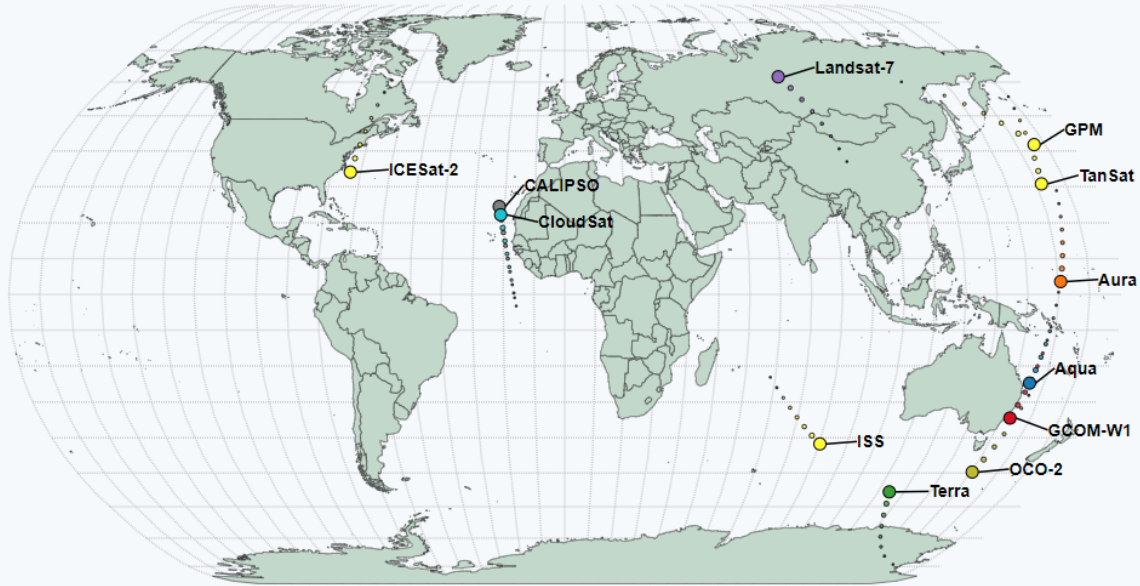
Released: 15th of October 2019

Spacecraft Position Map

Spacecraft Position Map

Generated by CCS on: 2019-10-16 15:28:09 UTC

Epoch Displayed: 2019-10-16 15:03:54 UTC



➤ Data for the Spacecraft Position Map:

New homepage plot – Spacecraft Position Map

CCS 2019.2

Released: 15th of October 2019

Ad Hoc Analysis

Required fields are marked with an asterisk (*).

Analysis Type*

Ad Hoc XY Plot Analysis

Enables the user to create, save, and view custom plots and/or text reports of a variety of selectable orbit parameters for a mission for the span of a selected ephemeris. Users can select daily products, or can choose trending products by selecting the "view only trending products" check box.

Select Date Range

Start Date/Time UTC*

YYYY-MM-DD 00:00:00.000

End Date/Time UTC*

YYYY-MM-DD 00:00:00.000

Select Mission

Mission*

Select Mission

Product Rule*

Select a mission

Add Mission

Don't see your mission? [Click here to request access](#)

Parameters

Notes:

- When using the BL_E or BL_W elements for analysis, please expect inaccurate values due to the Brouwer-Lyddane algorithm.
- Apogee Height and Perigee Height do not reference the oblate Earth.

New Tools Updates – Cycle through all tools on unified tools page, see tool descriptions, and add more missions to AdHoc, Phase Margin, and Altitude vs Latitude

CCS 2019.2

Released: 15th of October 2019

Select Date Range

Start Date/Time UTC* End Date/Time UTC*

Select Mission

Mission* Product Rule*

Selected Ephemeris

File Name	End Date
PM_EOSEPHM1_244_2019_01.e	2019-09-08 00:00:00.000 UTC

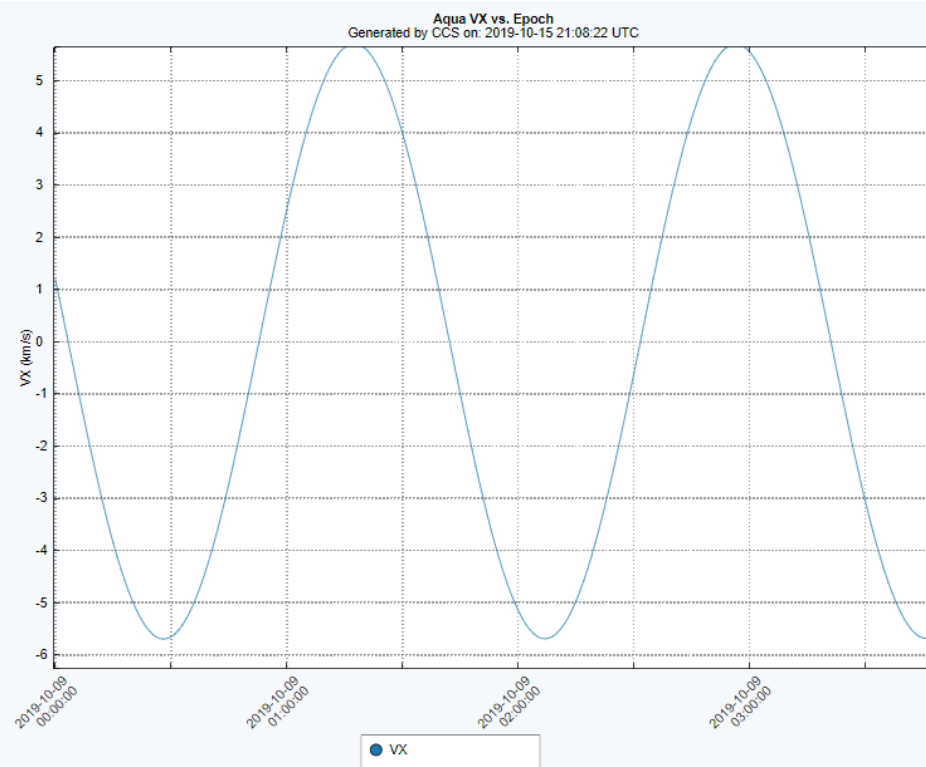
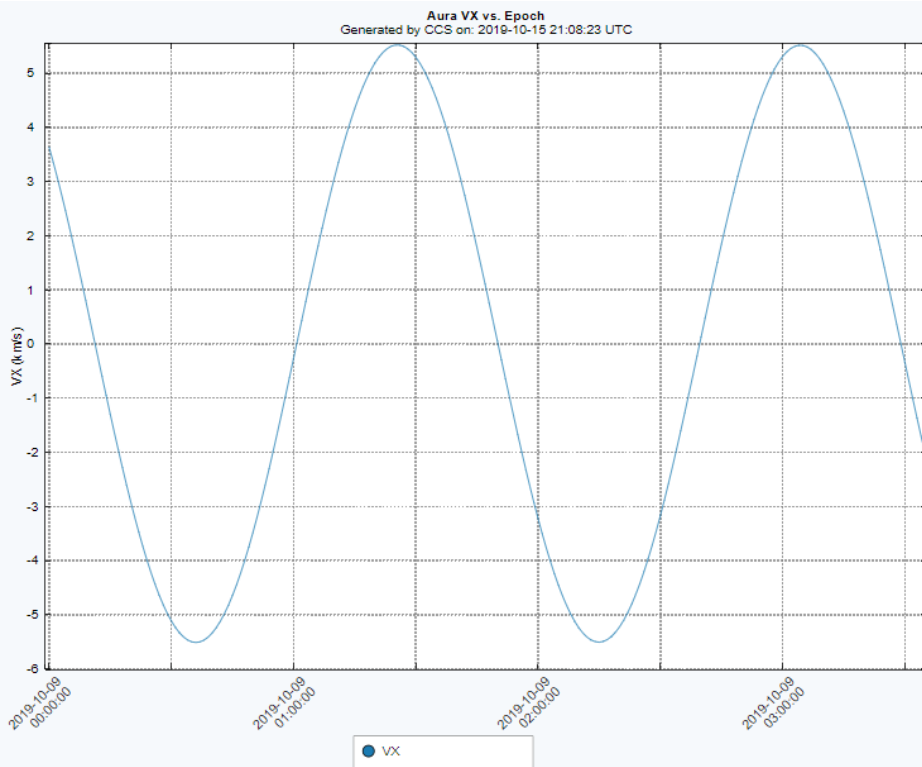
Mission*

Don't see your mission? [Click here to request access](#)

New Tools Updates – Product Rules and Missions that don't have available products are disabled

CCS 2019.2

Released: 15th of October 2019



New Tools Updates – Multiple results on an AdHoc Analysis

CCS 2019.2

Released: 15th of October 2019

The screenshot shows the Mission Operations Working Group website interface. A modal dialog box titled "Upload Product" is open in the center. The dialog contains the following information:

- Product Rule:** Aqua - Ephemeris - Predicted (STK3 format)
- Filename Format:** PM_EOSEPHM<n>_<ddd>_<yyyy>_<vv>.e
- Select a Product***
- Choose File:** No file chosen
- Note:** The uploaded file must match the Filename Format specified above or it will not be processed by the system.
- Buttons:** Upload, Cancel

In the background, the website shows the "Current Mission" dropdown set to "Aqua" and a table of "Current Product Rule". The "Upload Product" button in the bottom right corner of the page is highlighted with a red rectangle.

Product Rule Name	Rule Type	File Format	File Template	
Aqua - Ephemeris - Predicted (STK3 format)	Acquisition	STK 3.0 Ephemeris	PM_EOSEPHM<n>_<ddd>_<yyyy>_<vv>.e	Edit

Product File Name	Created ↓	Processed	Native	Start Date	End Date	
PM_EOSEPHM1_289_2019_01.e	2019-10-15 15:20:36.023 UTC	Yes	Yes	2019-10-16 00:00:00.000 UTC	2019-10-23 00:00:00.000 UTC	Delete

Ephemeris Upload – Manually place products onto the website

CCS 2019.2

Released: 15th of October 2019

External System Deliveries

Required fields are marked with an asterisk (*).

System Name*

Description*

Mission* **Product Rule***

FTP Site Address* **FTP Server Path** **FTP Username*** **FTP Password***

Use SFTP **Passive Mode**

Point of Contact

Notify POC Of Delivery Via Email?*

Are Deliveries Active?*

External Deliveries – Have new products delivered directly via FTP

Questions

Questions?

Thank you

- Thank you for your continued support!
- For all CCS communications please contact:

ccs-support@lists.hq.nasa.gov