

ATMOSPHERIC SCIENCE DATA CENTER

NASA ASDC Distributed Active Archive Center (DAAC)

Earth Venture Sub-Orbital Support Team

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DCOTSS Open Data Workshop

December 8, 2022

DCOTSS Data at the ASDC

- Sole post project data portal for distribution of data products
- Responsible for long-term preservation and stewardship
- DCOTSS data holdings
 - Archive the latest versions of publication quality data, including observational, derived, and value-added data products
- Assign DOIs to data products tailored to support manuscript and presentation development

DCOTSS Data at the ASDC

- ASDC worked with the DCOTSS Data Manager (Cameron) to determine organization/groups to distribute DCOTSS data
 - Commonly referred to as collections
- DCOTSS data is grouped into 5 collections, all of which can be accessed at the ASDC
- Both DCOTSS deployments will be included in these collections once the second deployment data is ready for transfer to the ASDC

DCOTSS Data at the ASDC

- DCOTSS-Aircraft-Data_1
 - All ER-2 aircraft data, including merged data files
- DCOTSS-Balloon-Data_1
 - Balloon/Ozonesonde data products
- DCOTSS-Model-Output_1
 - Modeled data products, including WRF, TRAJ3D (Trajectory), GOES satellites
- DCOTSS-Radar-Satellite-Data_1
 - NEXRAD, GOES-16, GOES-17 radar/satellite data products
- DCOTSS-Reports_1
 - Flight Reports

Earthdata Account

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EARTHDATA Find a DAAC Feedback

EARTHDATA LOGIN [Documentation](#)

Get single sign-on access to all your favorite EOSDIS sites

REGISTER FOR A PROFILE

LOG IN **REGISTER**

- 🔗 I don't remember my username
- 🔗 I don't remember my password
- 🔗 Help

for all EOSDIS system components (DAACs, Tools, Services). Your Earthdata login also helps the EOSDIS program better understand the usage of EOSDIS services to improve user experience through customization of tools and improvement of services. EOSDIS data are openly available to all and free of charge except where governed by international

free



Register for an Earthdata Login Profile

Profile Information

Username

Password

Password confirmation:

REGISTER FOR EARTHDATA LOGIN

- Not begin, end or contain two consecutive special characters(. _)

Password must contain:

- Minimum of 8 characters
- One Uppercase letter
- One Lowercase letter

Feedback

ASDC Website

- <https://asdc.larc.nasa.gov/project/DCOTSS>

EARTHDATA
ASDC | Atmospheric Science Data Center

Search the ASDC site...

ABOUT DATA COMMUNITY OUTREACH RESOURCES

Level 4 Level 3 Level 2

| Collection | Disciplines | Spatial | Temporal |
|--|---------------------------|--|--|
| DCOTSS-Aircraft-Data_1 Dynamics and Chemistry of the Summer Stratosphere Airborne Data Products | Aerosols, Field Campaigns | Spatial Coverage: (13.5, 58), (-131, -78.5) | Temporal Coverage: 2021-06-09 - Present |
| DCOTSS-Balloon-Data_1 Dynamics and Chemistry of the Summer Stratosphere Balloon Data Products | Field Campaigns | Spatial Coverage: (0, 49), (-172, 0) | Temporal Coverage: 2021-06-09 - Present |
| DCOTSS-Reports_1 Dynamics and Chemistry of the Summer Stratosphere Reports | Clouds, Field Campaigns | Spatial Coverage: (25, 47), (-123, -80) | Temporal Coverage: 2021-07-16 - Present |

Showing 1 to 3 of 3 entries

Recent DCOTSS News

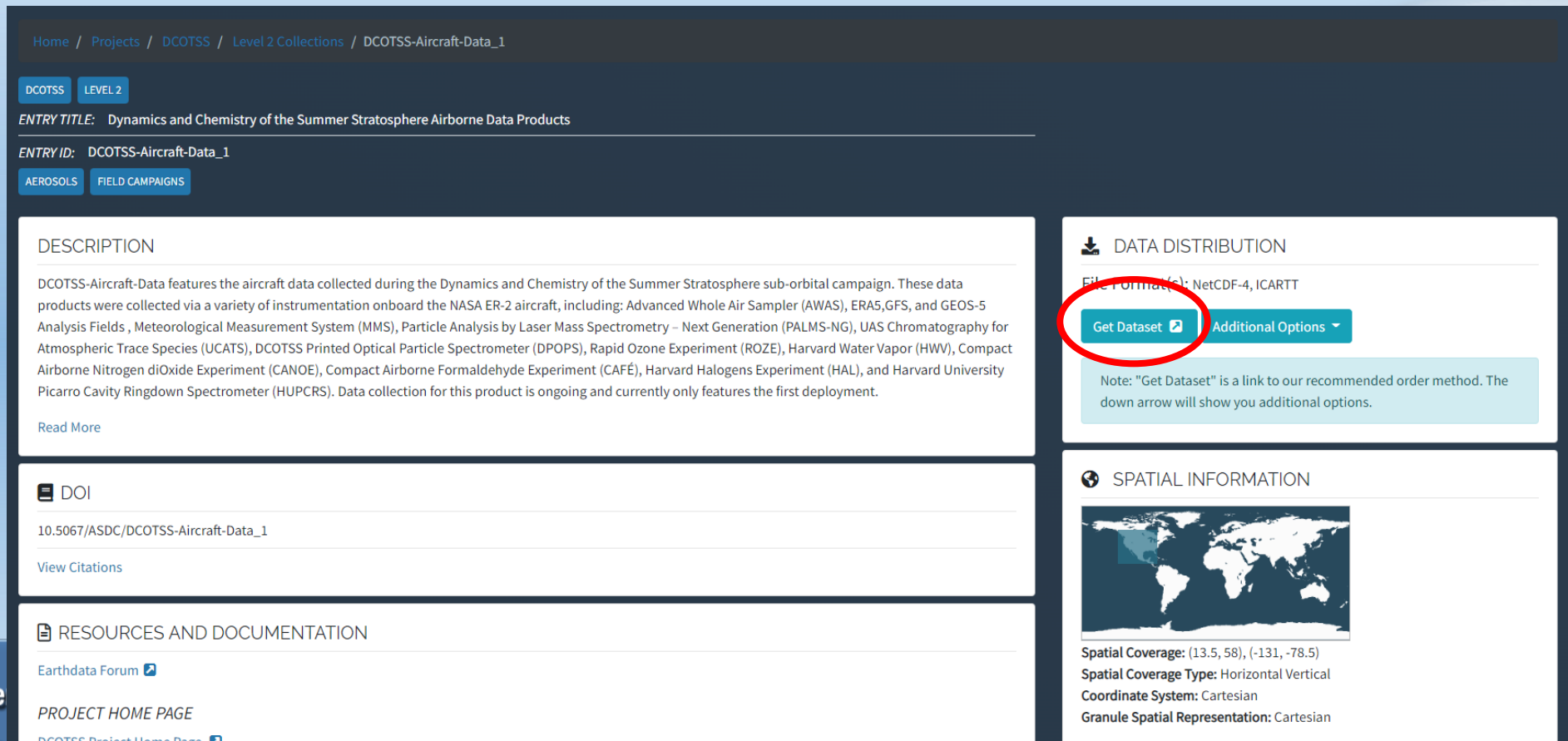
Nov. 21, 2022
DCOTSS 2022 Open Data Workshop
[Read Article](#)

Accessing DCOTSS Data

- There are a few different ways to access DCOTSS data
 - Primary data download options are available via each collection landing page (some download options are more advanced than others)
 - For this example, I will walk through the simplest way to obtain data (one or two files)
 - More advanced options for experienced users, or those who want to download a high number of files, will be provided at a high level

Obtaining Data from Aircraft Collection

- https://asdc.larc.nasa.gov/project/DCOTSS/DCOTSS-Aircraft-Data_1



Home / Projects / DCOTSS / Level 2 Collections / DCOTSS-Aircraft-Data_1

DCOTSS LEVEL 2

ENTRY TITLE: Dynamics and Chemistry of the Summer Stratosphere Airborne Data Products

ENTRY ID: DCOTSS-Aircraft-Data_1

AEROSOLS FIELD CAMPAIGNS

DESCRIPTION

DCOTSS-Aircraft-Data features the aircraft data collected during the Dynamics and Chemistry of the Summer Stratosphere sub-orbital campaign. These data products were collected via a variety of instrumentation onboard the NASA ER-2 aircraft, including: Advanced Whole Air Sampler (AWAS), ERA5,GFS, and GEOS-5 Analysis Fields, Meteorological Measurement System (MMS), Particle Analysis by Laser Mass Spectrometry – Next Generation (PALMS-NG), UAS Chromatography for Atmospheric Trace Species (UCATS), DCOTSS Printed Optical Particle Spectrometer (DPOPS), Rapid Ozone Experiment (ROZE), Harvard Water Vapor (HWV), Compact Airborne Nitrogen diOxide Experiment (CANOE), Compact Airborne Formaldehyde Experiment (CAFÉ), Harvard Halogens Experiment (HAL), and Harvard University Picarro Cavity Ringdown Spectrometer (HUPCRS). Data collection for this product is ongoing and currently only features the first deployment.

[Read More](#)

DATA DISTRIBUTION

File Format(s): NetCDF-4, ICARTT

[Get Dataset](#) [Additional Options](#)

Note: "Get Dataset" is a link to our recommended order method. The down arrow will show you additional options.

DOI

10.5067/ASDC/DCOTSS-Aircraft-Data_1

[View Citations](#)


RESOURCES AND DOCUMENTATION

[Earthdata Forum](#)

[PROJECT HOME PAGE](#)

[DCOTSS Project Home Page](#)

SPATIAL INFORMATION



Spatial Coverage: (13.5, 58), (-131, -78.5)

Spatial Coverage Type: Horizontal Vertical

Coordinate System: Cartesian

Granule Spatial Representation: Cartesian

DCOTSS Aircraft Collection on Earthdata Search

- Provides the ability to search through the entire collection
- Search filters are provided on the left (temporal, date/time, etc.)
- For free-text search please ensure you are using wildcards, specifically the asterisk (*)
 - This will help narrow the results if you know what specific files you are looking for

The screenshot shows the Earthdata Search interface. On the left, a sidebar contains filters for Granule Search, Temporal, Day/Night, and Data Access. The Granule Search section is highlighted with a red circle and contains a text input field labeled "Search Single or Multiple Granule IDs...". The main area displays search results for "Dynamics and Chemistry of the Summer Stratosphere Airborne Data Products". The results are shown in a grid format, with each result card displaying the granule ID, start and end times, and download options.

| Granule ID | START | END |
|--|---------------------|---------------------|
| DCOTSS-MERGE-ALL-AWAS_MERGE_20210609_R2.nc | 2021-06-09 17:29:16 | 2021-06-10 04:13:14 |
| DCOTSS-METNAV_ER2_20210609_R0.ict | 2021-06-09 18:00:56 | 2021-06-09 22:08:47 |
| DCOTSS-MMS-20HZ_ER2_20210609_R0.zip | 2021-06-09 18:01:33 | 2021-06-09 22:07:55 |
| DCOTSS-MERGE-10S_MERGE_20210609_R2.nc | 2021-06-09 18:01:46 | 2021-06-10 22:07:36 |
| DCOTSS-MERGE-ALL-10S_MERGE_20210609_R3.nc | 2021-06-09 18:01:46 | 2021-06-10 04:52:56 |
| DCOTSS-MMS-1HZ_ER2_20210609_R0.ict | 2021-06-09 18:01:50 | 2021-06-09 22:07:38 |
| DCOTSS-ERA5-track_ER2_20210609_R0.nc | 2021-06-09 18:01:50 | |
| DCOTSS-MERGE-1S_MERGE_20210609_R2.nc | 2021-06-09 18:01:50 | |

EARTHDATA Find a DAAC - EARTHDATA SEARCH

Search for collections or topics

Search Results (9,295 Collections)

Dynamics and Chemistry of the Summer Stratosphere Airborne Data Products

Showing 20 of 33 matching granules

Filter Granules Clear Filters

Granule Search

Granule ID(s)

dcotss-merge*

Temporal

Start

YYYY-MM-DD HH:mm:ss

End

YYYY-MM-DD HH:mm:ss

Recurring?

Day/Night

Find granules captured during the day, night or anytime.

Anytime

Data Access

Find only granules that have browse images

Find only granules that are available online

| | |
|---------------------------------------|---------------------------------------|
| DCOTSS-MERGE-1S_MERGE_20210823_R2.nc | DCOTSS-MERGE-10S_MERGE_20210823_R2.nc |
| START 2021-08-23 13:57:22 | START 2021-08-23 13:57:16 |
| END 2021-08-24 17:20:46 | END 2021-08-24 17:20:46 |
| + | + |
| DCOTSS-MERGE-1S_MERGE_20210819_R2.nc | DCOTSS-MERGE-10S_MERGE_20210819_R2.nc |
| START 2021-08-19 13:57:53 | START 2021-08-19 13:57:46 |
| END 2021-08-20 21:03:44 | END 2021-08-20 21:03:36 |
| + | + |
| DCOTSS-MERGE-1S_MERGE_20210817_R2.nc | DCOTSS-MERGE-10S_MERGE_20210817_R2.nc |
| START 2021-08-17 15:09:30 | START 2021-08-17 15:09:26 |
| END 2021-08-18 21:57:06 | END 2021-08-18 21:57:06 |
| + | + |
| DCOTSS-MERGE-10S_MERGE_20210814_R2.nc | DCOTSS-MERGE-1S_MERGE_20210814_R2.nc |
| START 2021-08-14 12:07:26 | START 2021-08-14 12:07:25 |
| END 2021-08-15 10:08:06 | END 2021-08-15 10:08:06 |
| + | + |

Search Time: 0.8s

Add Download All 33

EARTHDATA Find a DAAC - EARTHDATA SEARCH

Search for collections or topics

Search Results (9,295 Collections)

Dynamics and Chemistry of the Summer Stratosphere Airborne Data Products

Showing 20 of 33 matching granules

Filter Granules Clear Filters

Granule Search

Granule ID(s)

dcotss-merge*

Temporal

Start

YYYY-MM-DD HH:mm:ss

End

YYYY-MM-DD HH:mm:ss

Recurring?

Day/Night

Find granules captured during the day, night or anytime.

Anytime

Data Access

Find only granules that have browse images

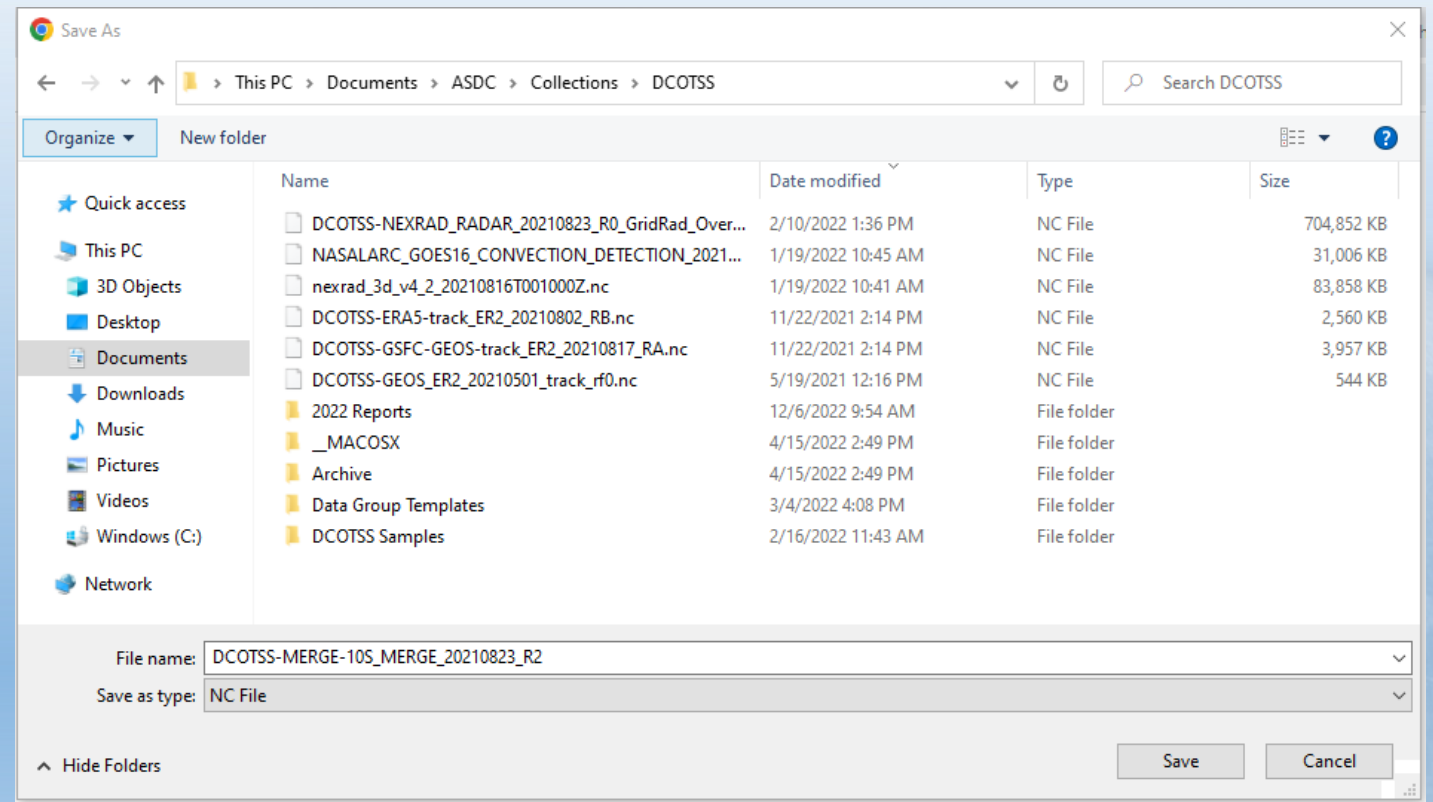
Find only granules that are available online

| | |
|---------------------------------------|---------------------------------------|
| DCOTSS-MERGE-1S_MERGE_20210823_R2.nc | DCOTSS-MERGE-10S_MERGE_20210823_R2.nc |
| START 2021-08-23 13:57:22 | START 2021-08-23 13:57:16 |
| END 2021-08-24 17:20:46 | END 2021-08-24 17:20:46 |
| + | + |
| DCOTSS-MERGE-1S_MERGE_20210819_R2.nc | DCOTSS-MERGE-10S_MERGE_20210819_R2.nc |
| START 2021-08-19 13:57:53 | START 2021-08-19 13:57:46 |
| END 2021-08-20 21:03:44 | END 2021-08-20 21:03:36 |
| + | + |
| DCOTSS-MERGE-1S_MERGE_20210817_R2.nc | DCOTSS-MERGE-10S_MERGE_20210817_R2.nc |
| START 2021-08-17 15:09:30 | START 2021-08-17 15:09:26 |
| END 2021-08-18 21:57:06 | END 2021-08-18 21:57:06 |
| + | + |
| DCOTSS-MERGE-10S_MERGE_20210814_R2.nc | DCOTSS-MERGE-1S_MERGE_20210814_R2.nc |
| START 2021-08-14 12:07:26 | START 2021-08-14 12:07:25 |
| END 2021-08-15 10:08:06 | END 2021-08-15 10:08:06 |
| + | + |

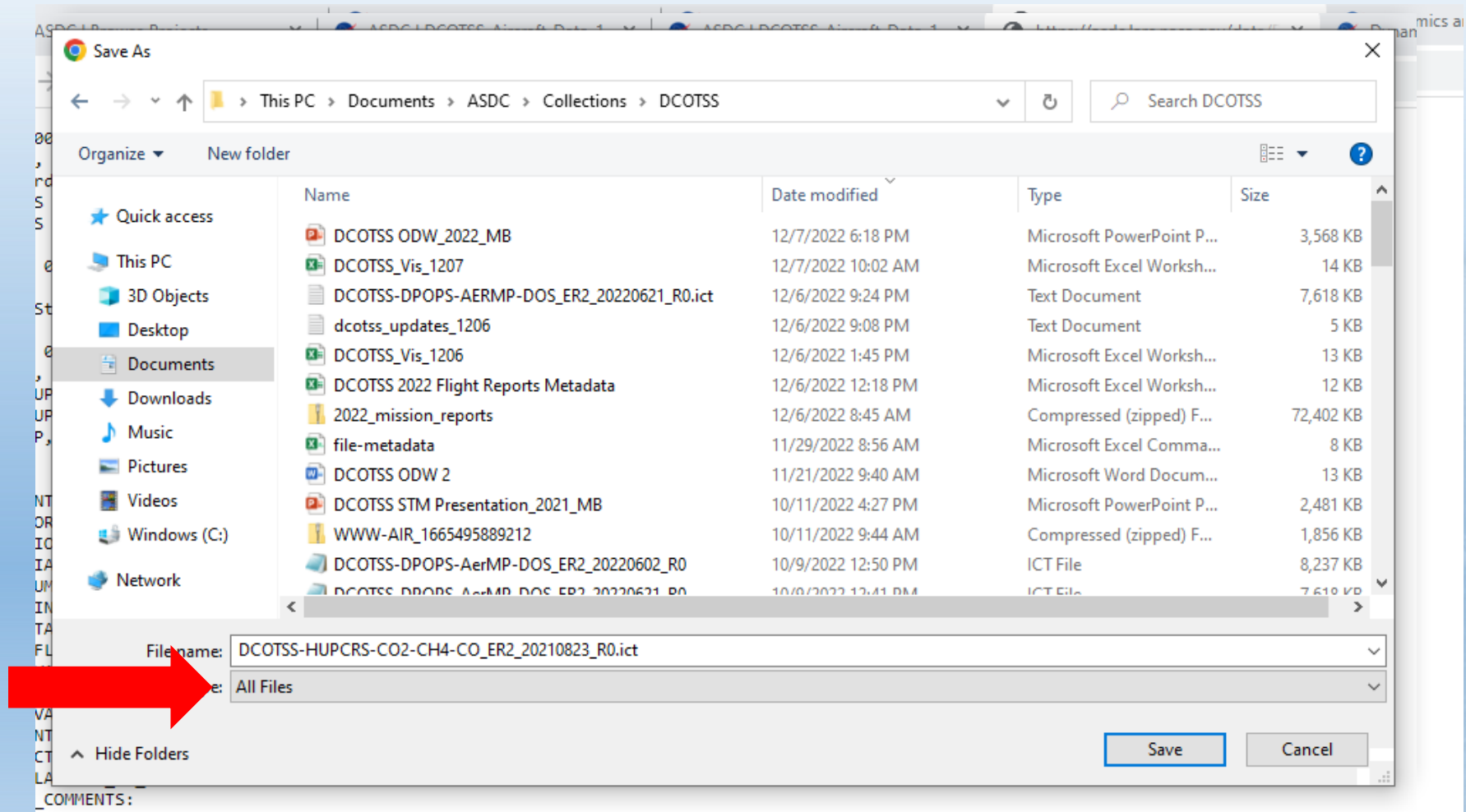
Search Time: 0.8s

Add Download All 33

- Clicking the “Download Single Granule Data” prompts a window to open and the ability to save the file as you typically would when downloading a file

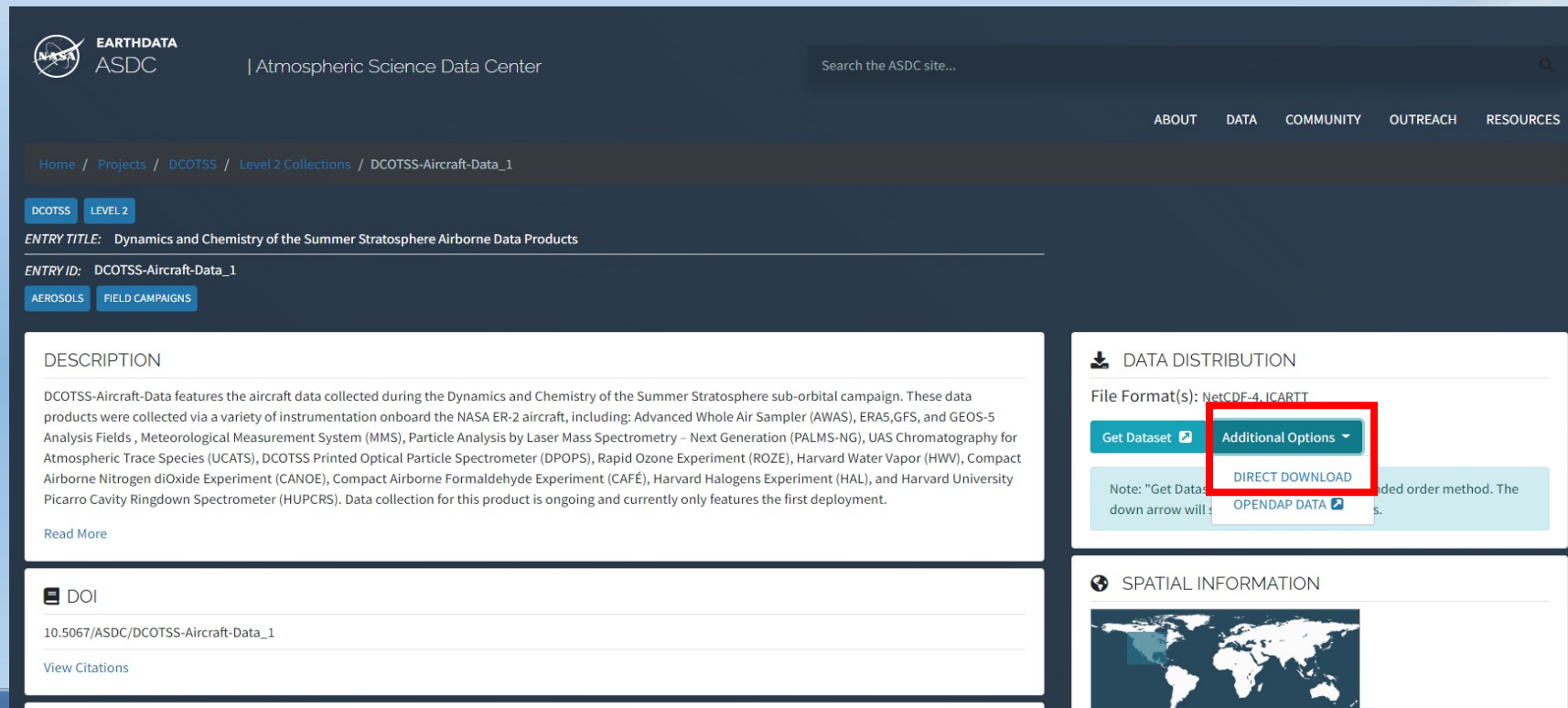


- Please note the “save as type”
 - Currently says “text document”
- Update to “All Files” and Click Save























Direct Data Download

- Similar methods can be applied to the ASDC's Direct Data Download



The screenshot displays the NASA EarthData ASDC website interface. The top navigation bar includes the NASA logo, 'EARTHDATA ASDC', and the text '| Atmospheric Science Data Center'. A search bar is located on the right. The main content area shows the breadcrumb path: Home / Projects / DCOTSS / Level 2 Collections / DCOTSS-Aircraft-Data_1. Below this, there are tabs for 'DCOTSS' and 'LEVEL 2'. The entry title is 'Dynamics and Chemistry of the Summer Stratosphere Airborne Data Products' and the entry ID is 'DCOTSS-Aircraft-Data_1'. There are also tabs for 'AEROSOLS' and 'FIELD CAMPAIGNS'. The 'DESCRIPTION' section provides details about the data collection. The 'DATA DISTRIBUTION' section shows the file format as 'NetCDF-4, ICARTT' and includes a 'Get Dataset' button with an 'Additional Options' dropdown menu. The 'Additional Options' dropdown is highlighted with a red box, and the 'DIRECT DOWNLOAD' option is selected. A note below the dropdown explains that the 'down arrow will' and 's...' are part of the download process. The 'SPATIAL INFORMATION' section features a world map.

| | Name | Last modified | Size |
|---|--|------------------|------|
|  | DCOTSS-AWAS_ER2_20210614_R0.ict | 2022-06-16 17:02 | 16K |
|  | DCOTSS-AWAS_ER2_20210617_R0.ict | 2022-06-16 14:11 | 16K |
|  | DCOTSS-AWAS_ER2_20210716_R0.ict | 2022-06-16 14:52 | 16K |
|  | DCOTSS-AWAS_ER2_20210720_R0.ict | 2022-06-16 19:28 | 16K |
|  | DCOTSS-AWAS_ER2_20210723_R0.ict | 2022-06-16 14:20 | 16K |
|  | DCOTSS-AWAS_ER2_20210726_R0.ict | 2022-06-16 14:51 | 16K |
|  | DCOTSS-AWAS_ER2_20210729_R0.ict | 2022-06-16 13:13 | 16K |
|  | DCOTSS-AWAS_ER2_20210802_R0.ict | 2022-06-16 12:45 | 16K |
|  | DCOTSS-AWAS_ER2_20210806_R0.ict | 2022-06-16 17:21 | 16K |
|  | DCOTSS-AWAS_ER2_20210810_R0.ict | 2022-06-16 14:07 | 16K |
|  | DCOTSS-AWAS_ER2_20210814_R0.ict | 2022-06-16 19:01 | 16K |
|  | DCOTSS-AWAS_ER2_20210817_R0.ict | 2022-06-16 15:36 | 15K |
|  | DCOTSS-AWAS_ER2_20210819_R0.ict | 2022-06-16 19:19 | 16K |
|  | DCOTSS-CAFE-CH20_ER2_20210609_R0.ict | 2022-05-13 16:23 | 215K |
|  | DCOTSS-CAFE-CH20_ER2_20210614_R0.ict | 2022-05-13 16:15 | 192K |
|  | DCOTSS-CAFE-CH20_ER2_20210617_R0.ict | 2022-05-13 16:30 | 317K |
|  | DCOTSS-CAFE-CH20_ER2_20210716_R0.ict | 2022-05-13 16:17 | 428K |
|  | DCOTSS-CAFE-CH20_ER2_20210720_R0.ict | 2022-05-13 16:42 | 387K |
|  | DCOTSS-CAFE-CH20_ER2_20210723_R0.ict | 2022-05-13 16:32 | 368K |
|  | DCOTSS-CAFE-CH20_ER2_20210726_R0.ict | 2022-05-13 16:07 | 318K |

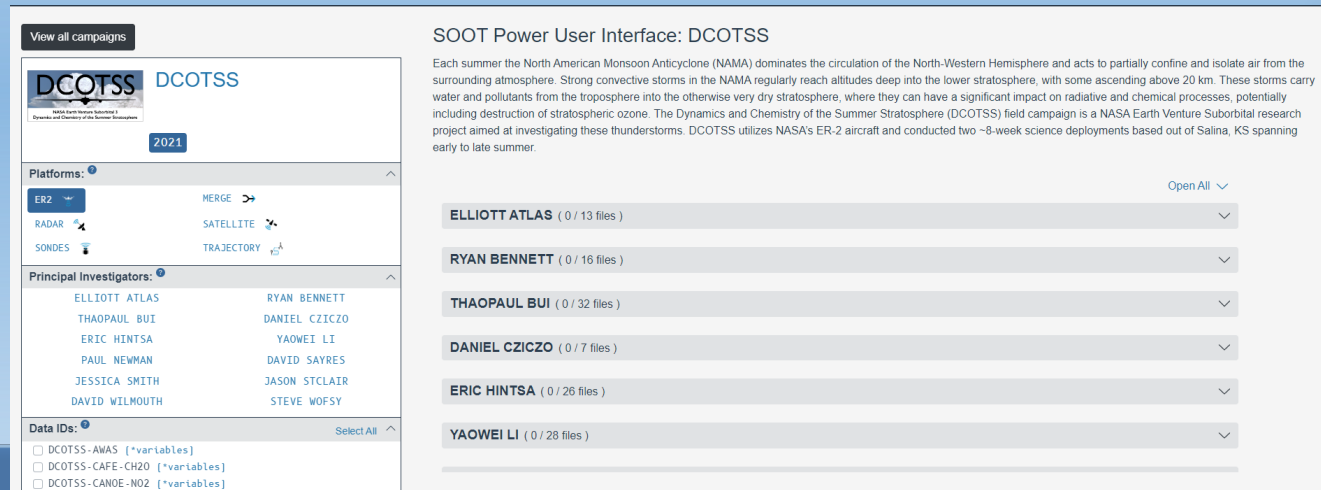
Advanced Data Download Methods

- ASDC provides support for users who are downloading large amounts of data
 - Methods require downloading new applications (Cygwin, Python, etc.)
- Access to scripts to download data in bulk are provided on the Earthdata Forum ([Scripts for Downloading Data](#))

[Scripts for Downloading Data](#)

Sub-Orbital Order Tool (SOOT)

- ASDC also distributes DCOTSS data via the Sub-Orbital Order Tool (SOOT)
 - Framework for handling sub-orbital campaigns that are currently assigned to and archived at the ASDC
 - <https://asdc.larc.nasa.gov/soot/power-user/DCOTSS/2021/ER2>



The screenshot shows the SOOT Power User Interface for DCOTSS. It features a navigation menu on the left with options for 'View all campaigns', 'DCOTSS', and '2021'. Below this, there are sections for 'Platforms' (ER2, RADAR, SONDES, MERGE, SATELLITE, TRAJECTORY), 'Principal Investigators' (listing names like Elliott Atlas, Ryan Bennett, etc.), and 'Data IDs' (listing codes like DCOTSS-AWAS, etc.). The main content area displays a list of data sets with their respective file counts, such as 'ELLIOTT ATLAS (0 / 13 files)', 'RYAN BENNETT (0 / 16 files)', 'THAOPAU BUI (0 / 32 files)', 'DANIEL CZICZO (0 / 7 files)', 'ERIC HINTSA (0 / 26 files)', and 'YAOWEI LI (0 / 28 files)'. A descriptive paragraph about the DCOTSS campaign is also visible.



Contact Information

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