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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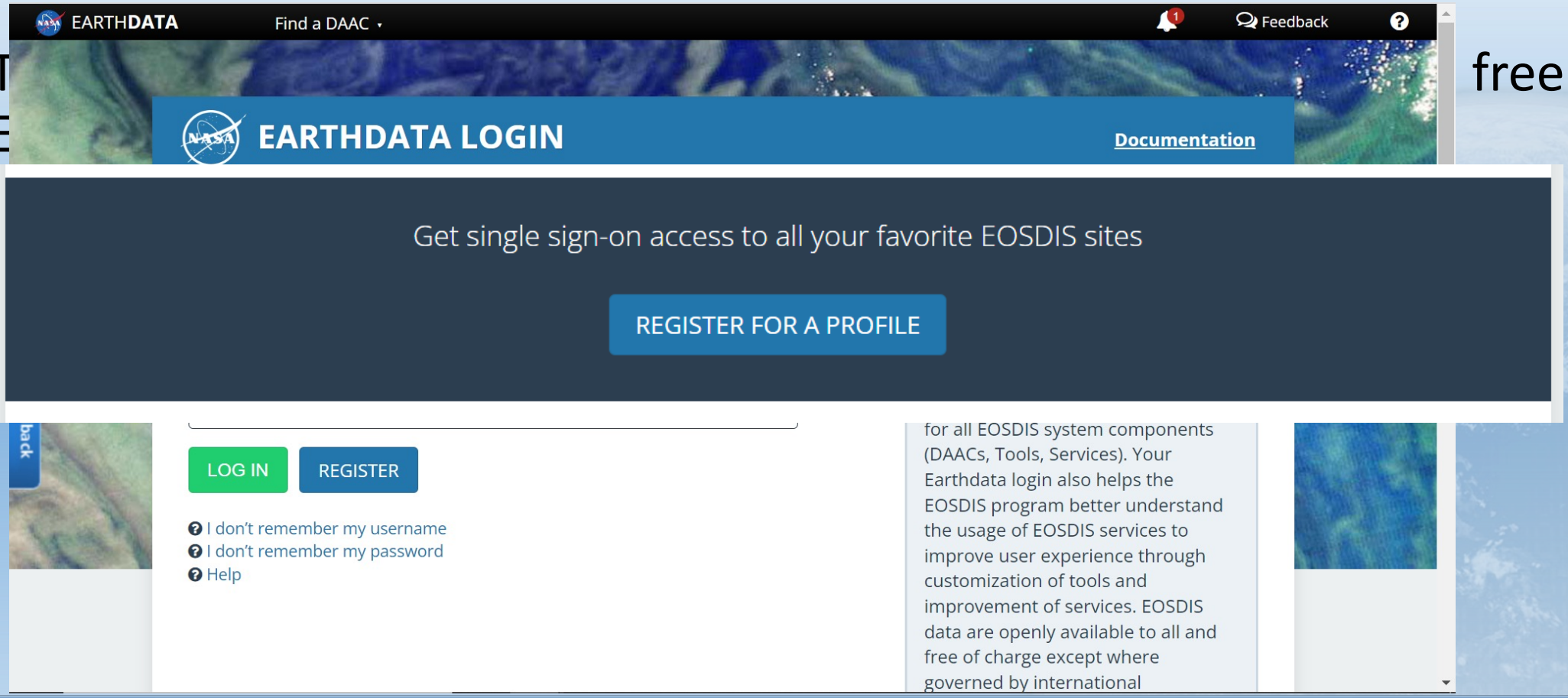
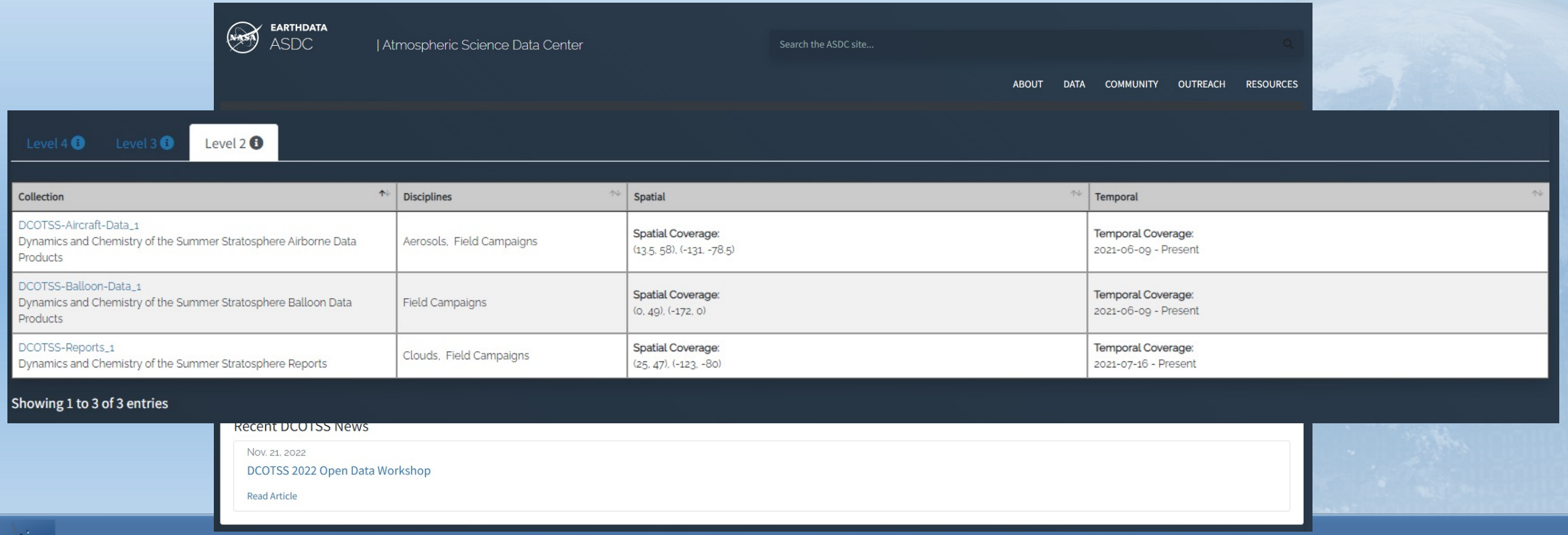
- V




EARTHDATA LOGIN
Documentation
Register for an Earthdata Login Profile
Profile Information
Userr
Passv
Passw
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

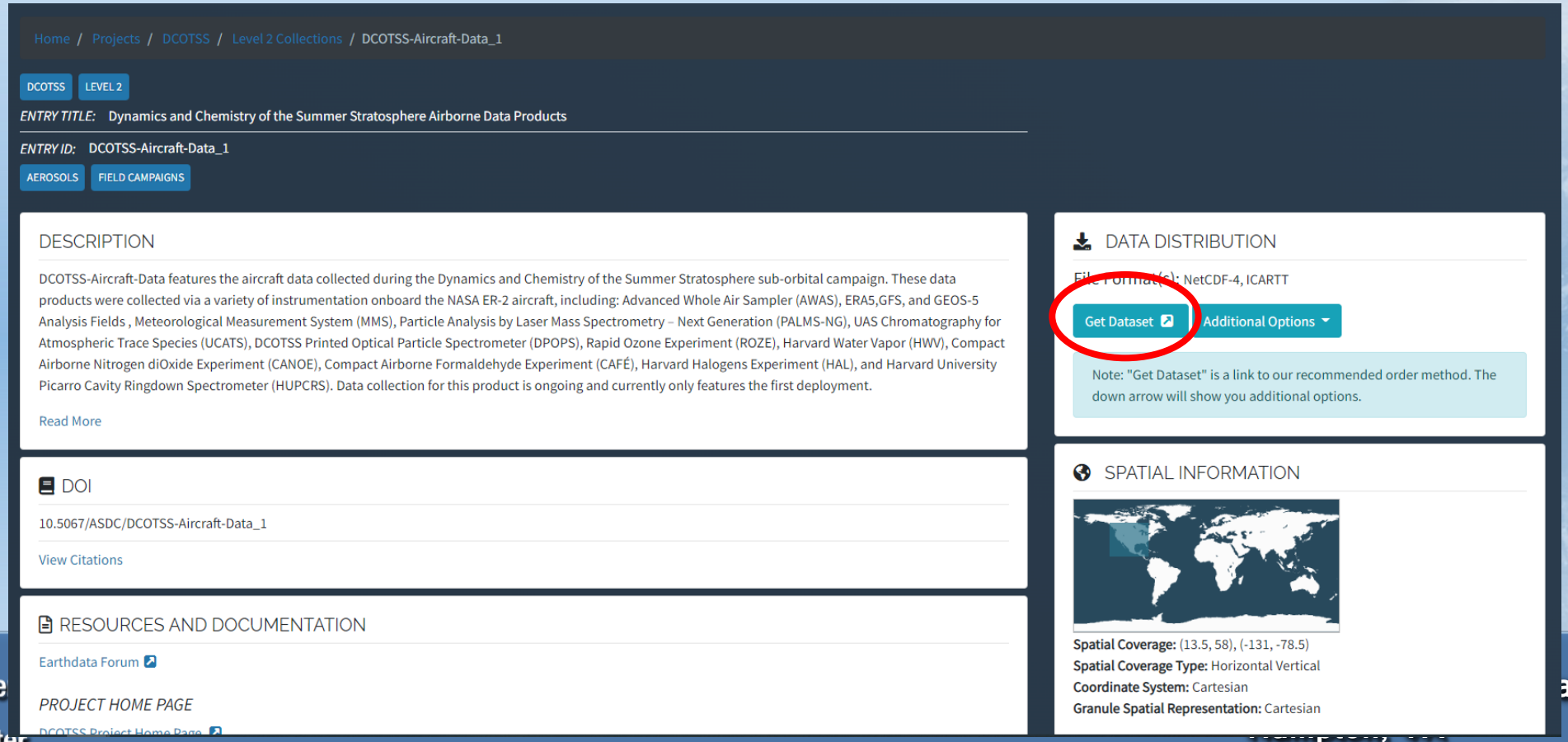


Accessing DCOTSS Data

- 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

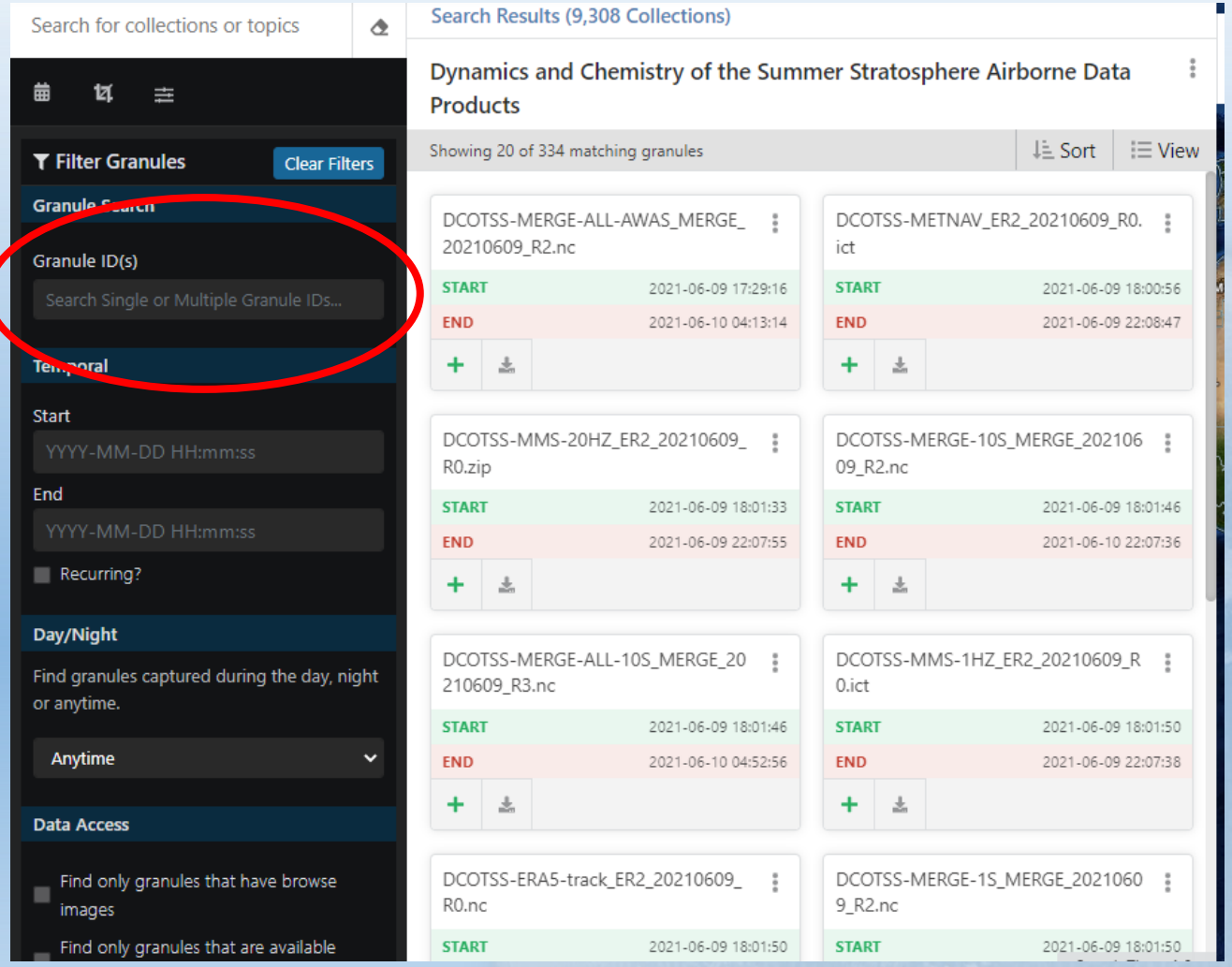
Obtaining Data from Aircraft Collection

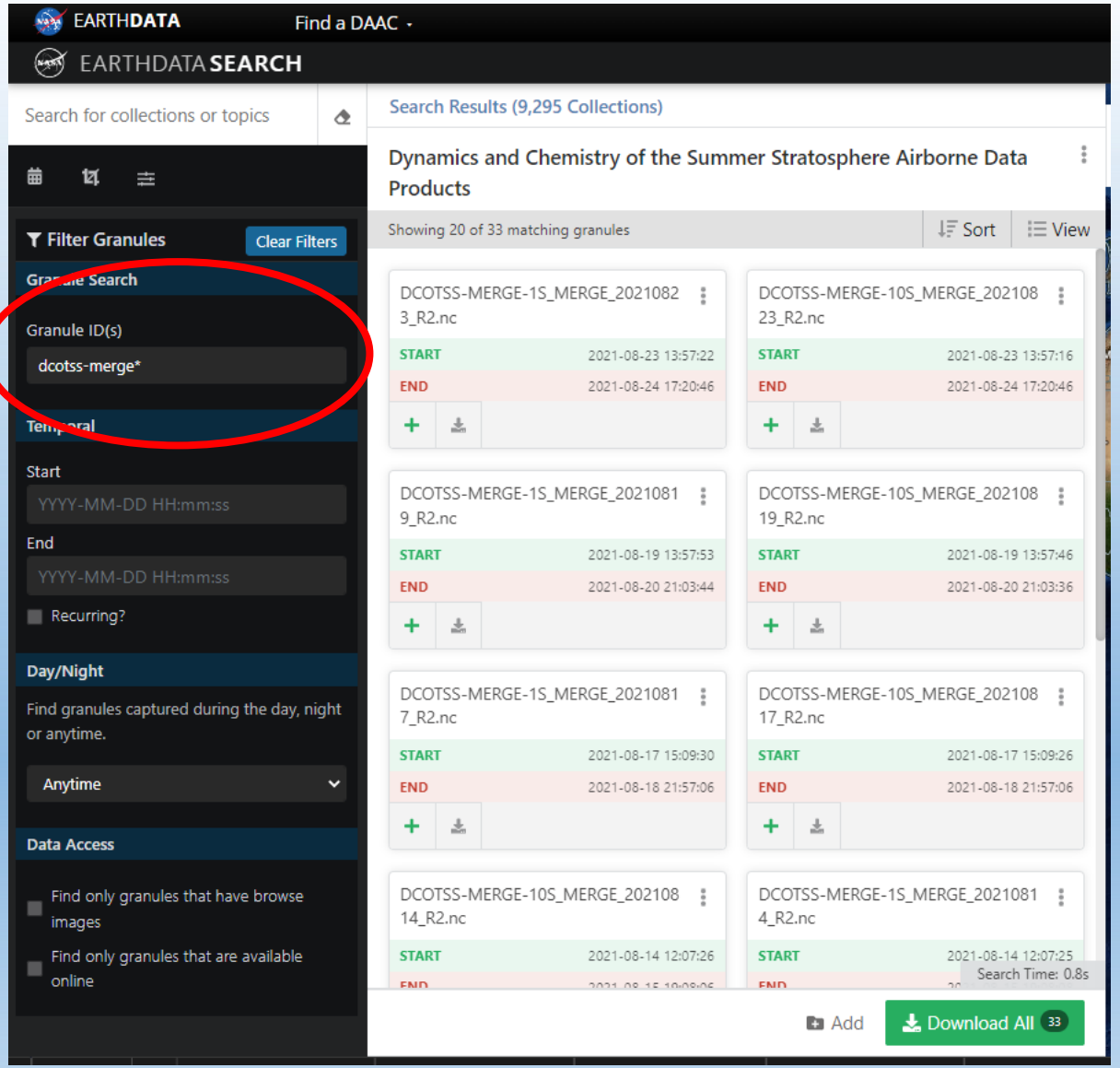
- https://asdc.larc.nasa.gov/project/DCOTSS/DCOTSS-Aircraft-Data_1

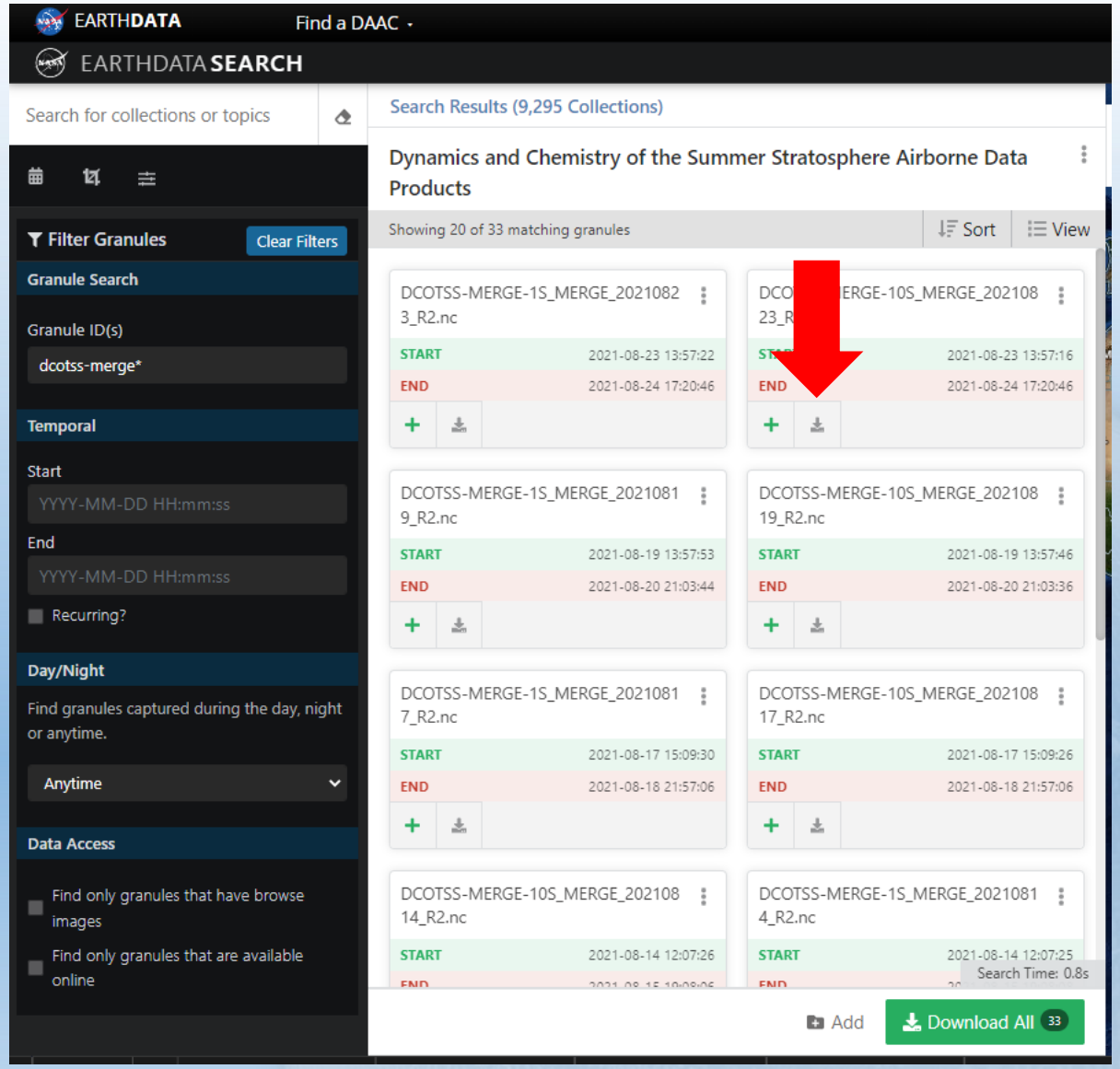


DCOTSS Aircraft Collection on Earthdata Search

- Provides the ability to search through the entire collection
- Search filers 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




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
Sort
View
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
START 2021-08-23 13:57:22
END 2021-08-24 17:20:46
DCOTSS-MERGE-10S_MERGE_20210823_R2.nc
START 2021-08-23 13:57:16
END 2021-08-24 17:20:46
DCOTSS-MERGE-1S_MERGE_20210819_R2.nc
START 2021-08-19 13:57:53
END 2021-08-20 21:03:44
DCOTSS-MERGE-10S_MERGE_20210819_R2.nc
START 2021-08-19 13:57:46
END 2021-08-20 21:03:36
DCOTSS-MERGE-1S_MERGE_20210817_R2.nc
START 2021-08-17 15:09:30
END 2021-08-18 21:57:06
DCOTSS-MERGE-10S_MERGE_20210817_R2.nc
START 2021-08-17 15:09:26
END 2021-08-18 21:57:06
DCOTSS-MERGE-10S_MERGE_20210814_R2.nc
START 2021-08-14 12:07:26
DCOTSS-MERGE-1S_MERGE_20210814_R2.nc
START 2021-08-14 12:07:25
Search Time: 0.8s
Add
Download All 33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View
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
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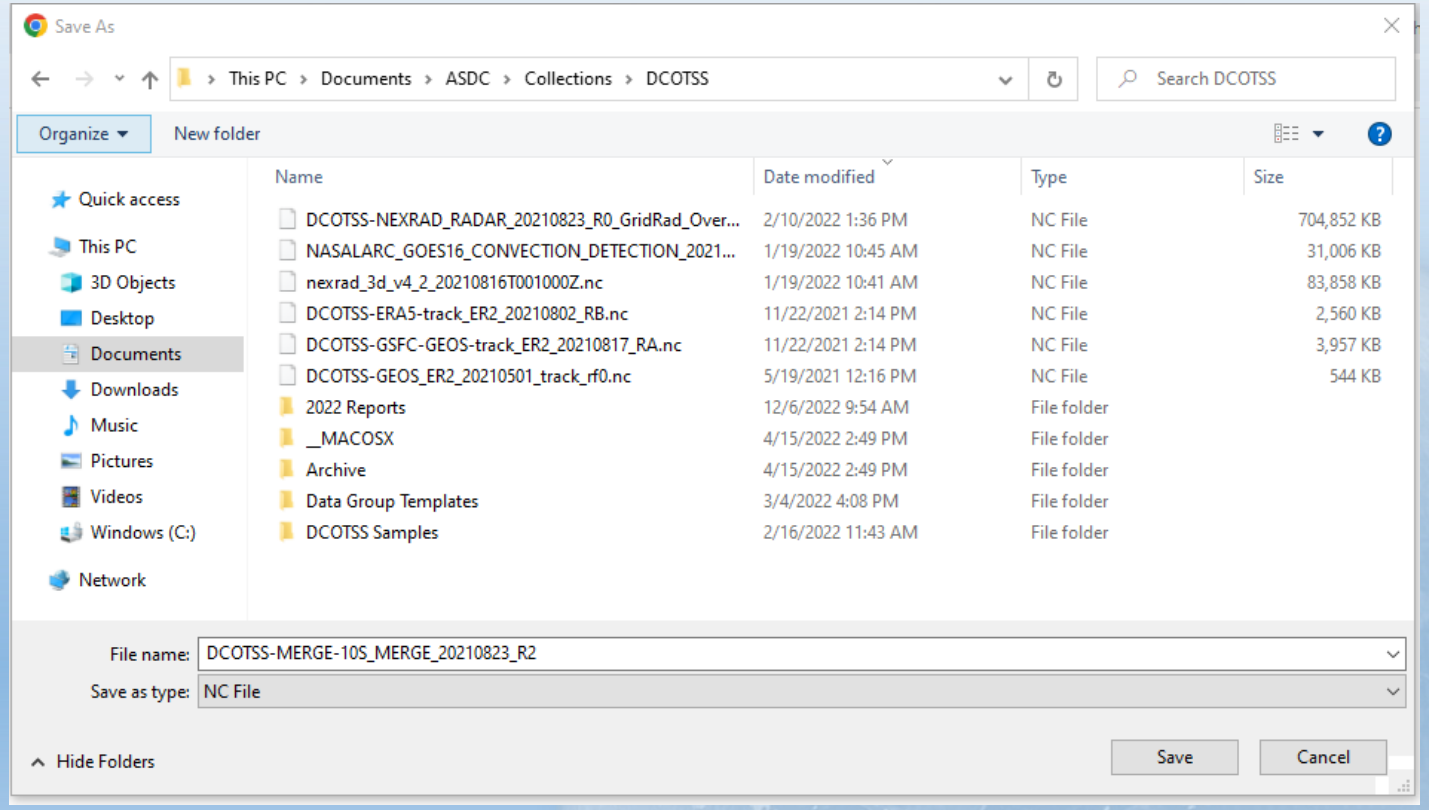
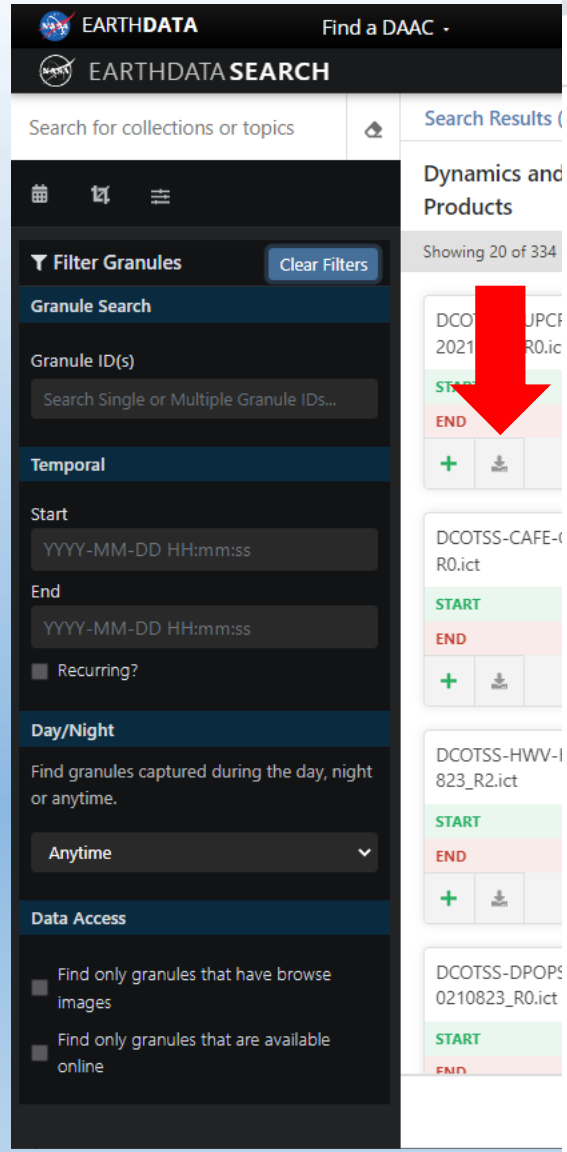
END 2021-08-24 17:20:46
DCOTSS-MERGE-10S_MERGE_20210823_R2.nc
START 2021-08-23 13:57:16
END 2021-08-24 17:20:46
DCOTSS-MERGE-1S_MERGE_20210819_R2.nc
START 2021-08-19 13:57:53
END 2021-08-20 21:03:44
DCOTSS-MERGE-10S_MERGE_20210819_R2.nc
START 2021-08-19 13:57:46
END 2021-08-20 21:03:36
DCOTSS-MERGE-1S_MERGE_20210817_R2.nc
START 2021-08-17 15:09:30
END 2021-08-18 21:57:06
DCOTSS-MERGE-10S_MERGE_20210817_R2.nc
START 2021-08-17 15:09:26
END 2021-08-18 21:57:06
DCOTSS-MERGE-10S_MERGE_20210814_R2.nc
START 2021-08-14 12:07:26
DCOTSS-MERGE-1S_MERGE_20210814_R2.nc
START 2021-08-14 12:07:25
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

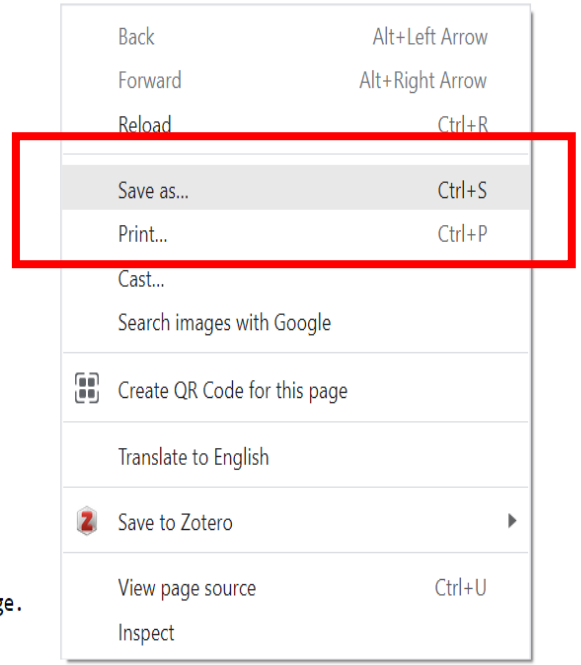




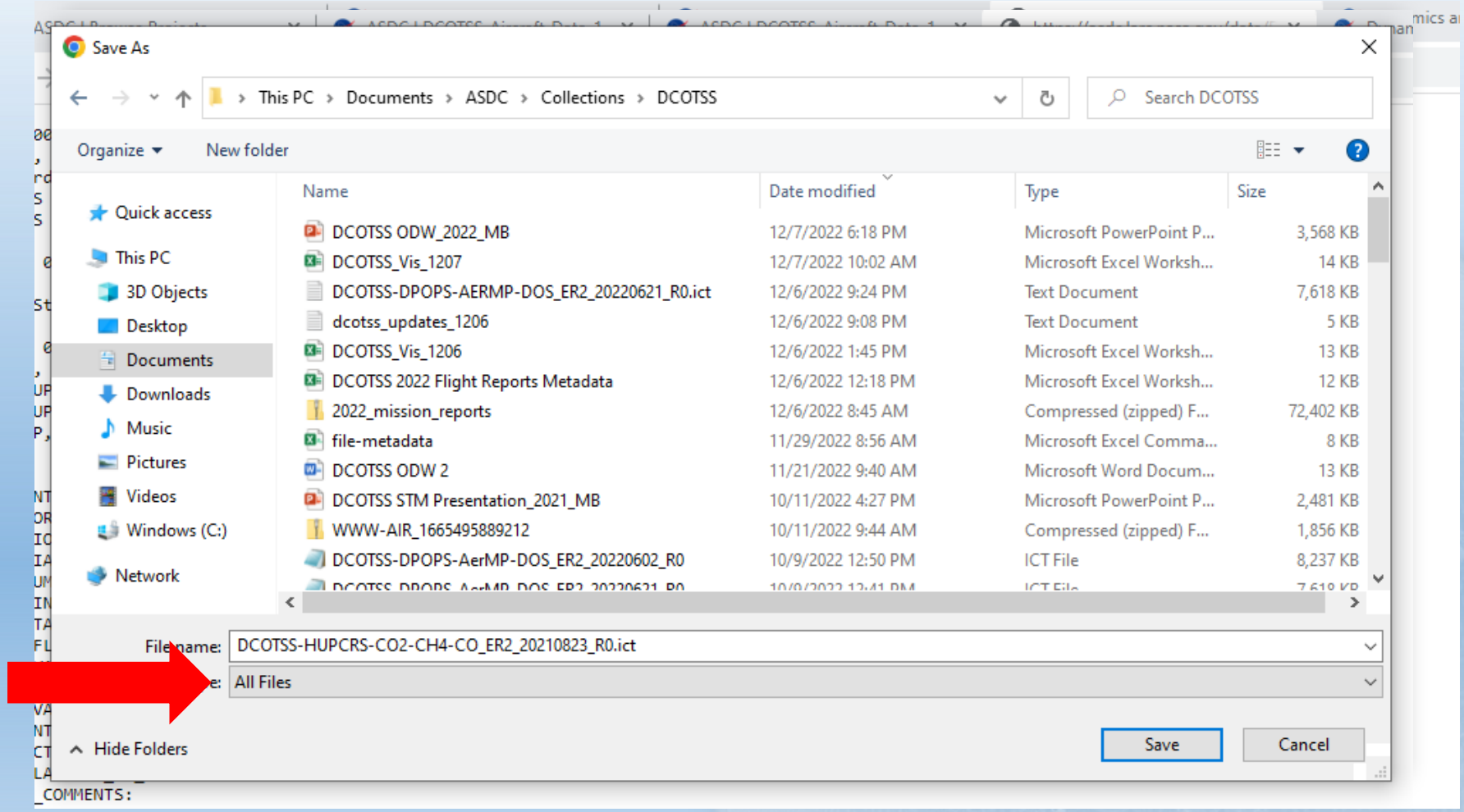
https://asdc.larc.nasa.gov/data/D

asdc.larc.nasa.gov/data/DCOTSS/Aircraft-Data_1/DCOTSS-HUPCRS-CO2-CH4-CO_ER2_20210823_R0.ict

```
38, 1001
Wofsy, S.C., Daube, B.C., Pittman, J.V., Budney, J., Chulakadabba, J.
Harvard University
HUPCRS
DCOTSS
1, 1
2021, 08, 23, 2022, 02, 28
1
Time_Start, seconds, elapsed time from 0000 UTC on take-off day
3
0.01, 0.01, 0.01
-9999, -9999, -9999
CO2_HUP, ppmv, Gas_CO2_InSitu_S_DVMR
CH4_HUP, ppbv, Gas_CO_InSitu_S_DVMR
CO_HUP, ppbv, Gas_CH4_InSitu_S_DVMR
0
21
PI_CONTACT_INFO: Address: 20 Oxford St, Cambridge, MA 02138; email: wofsy@g.harvard.edu
PLATFORM: NASA ER-2
LOCATION: Aircraft location data in separate file
ASSOCIATED_DATA: N/A
INSTRUMENT_INFO: Harvard University Picarro Cavity Ringdown Spectrometer
DATA_INFO: units are ppmv for CO2, ppbv for CH4 and CO
UNCERTAINTY: 0.02 ppm CO2, 0.20 ppb CH4, 3.20 ppb CO in-flight 1-sigma precision in 10 sec
ULOD_FLAG: -7777
ULOD_VALUE: N/A
LLOD_FLAG: -8888
LLOD_VALUE: N/A
DM_CONTACT_INFO: Jasna Pittman, Harvard University, pittman@seas.harvard.edu
PROJECT_INFO: DCOTSS Mission Jun - Aug 2021; Palmdale, CA and Salina, KS
STIPULATIONS_ON_USE: Please contact the PI.
OTHER_COMMENTS:
Data measured every ~2.2 sec.
In-flight calibrations performed for 6 mins, every 60 mins on the hour.
Sampling time has been corrected for the delay associated with transiting the inlet.
REVISION: R0
R0: New calibration applied. CO2 and CH4 at 1 sec when available, CO at midpoint of a 10-sec average.
Time_Start, CO2_HUP, CH4_HUP, CO_HUP
  51975,  41279, 174774,  -9999
```

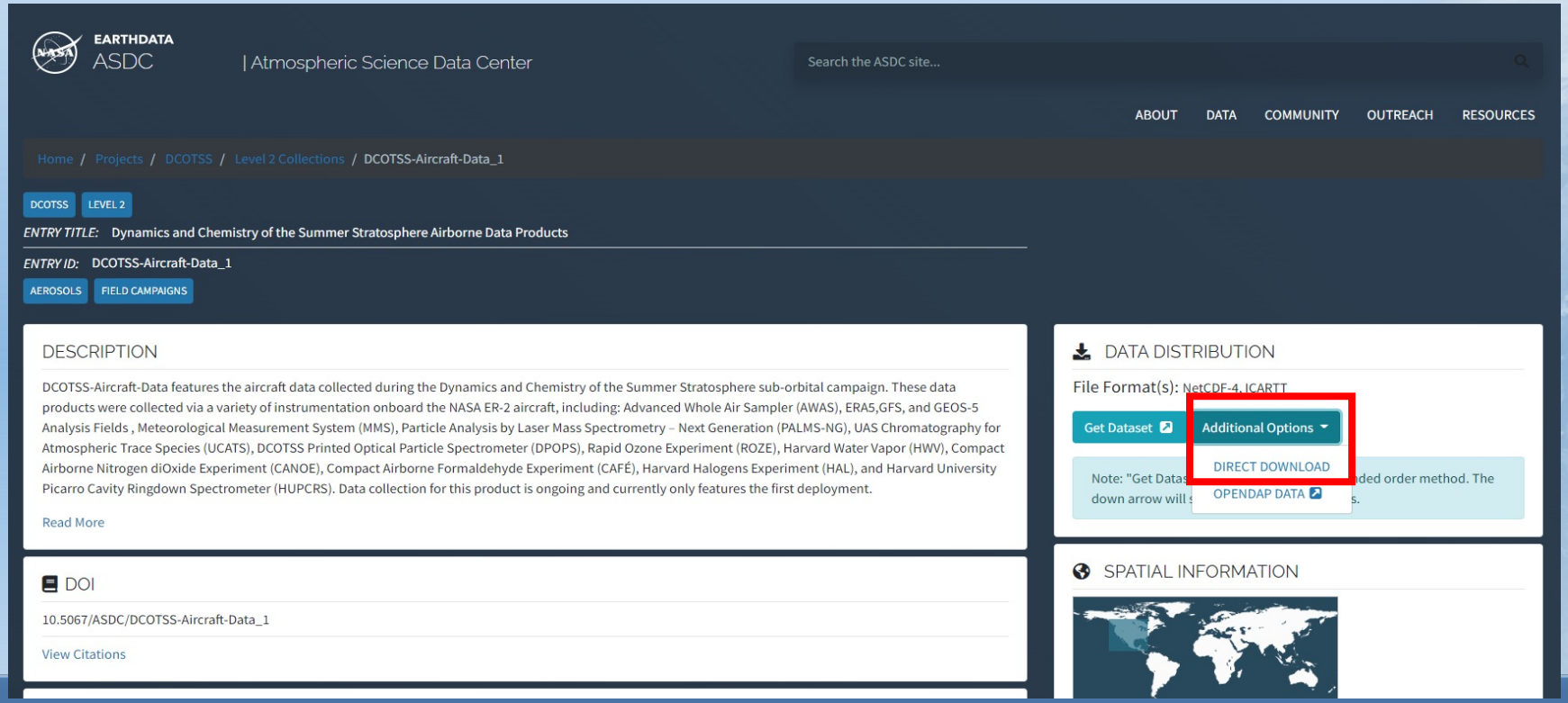


- Please note the “save as type”
  - Currently says “text document”
- Update to “All Files” and Click Save



Direct Data Download

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



EARTHDATA
ASDC

ABOUT DATA COMMUNITY OUTREACH RESOURCES SEARCH

ASDC / Data / DCOTSS / Aircraft-Data_1

Scripts for Downloading Data

	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
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	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-CH2O_ER2_20210609_R0.ict	2022-05-13 16:23	215K
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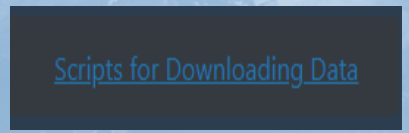
	DCOTSS-CAFE-CH2O_ER2_20210617_R0.ict	2022-05-13 16:30	317K
	DCOTSS-CAFE-CH2O_ER2_20210716_R0.ict	2022-05-13 16:17	428K
	DCOTSS-CAFE-CH2O_ER2_20210720_R0.ict	2022-05-13 16:42	387K
	DCOTSS-CAFE-CH2O_ER2_20210723_R0.ict	2022-05-13 16:32	368K

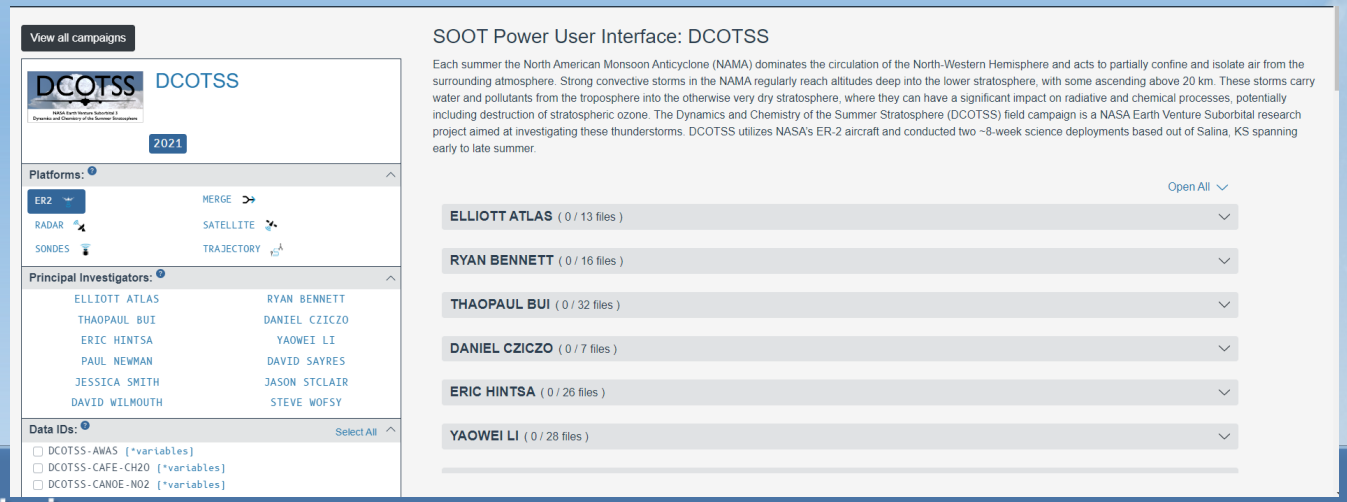
Advanced Data Download Methods

- 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)



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



Contact Information

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- Sean Leavor: sean.leavor@nasa.gov