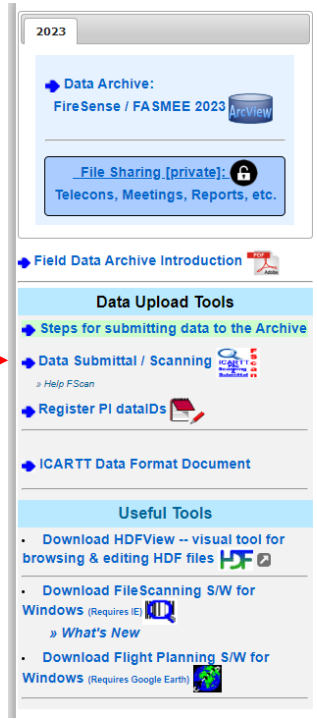
www-air Data Repository Introduction

Michael Shook, Gao Chen, Ali Aknan, and Morgan Silverman

www-air Website

- https://www-air.larc.nasa.gov/
- A repository for observational and ancillary data products and relevant documentation/reports to facilitate science team data exchange and data processing
- Password-protected document and file sharing
- Will host FireSense and FASMEE Data holdings include aircraft data as well as other data as needed/requested

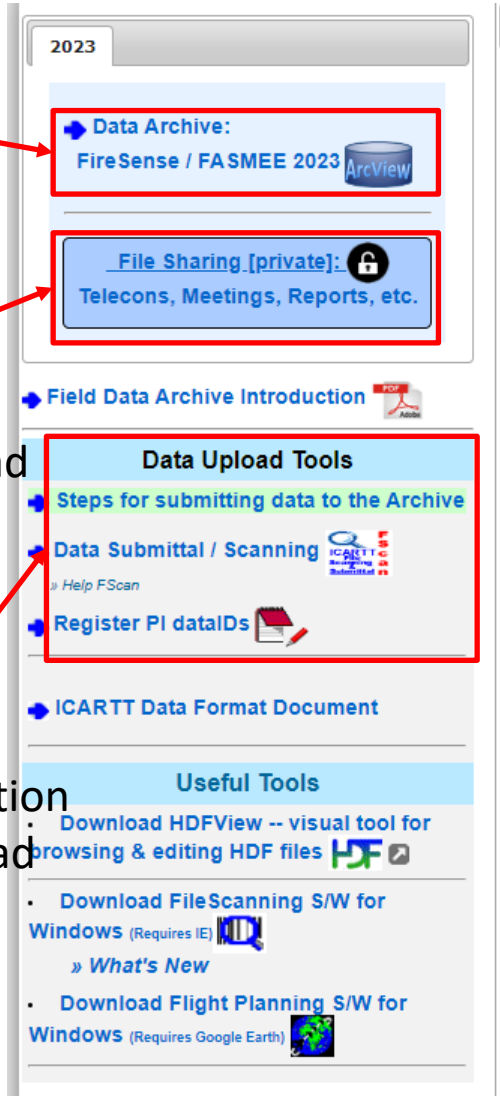


FireSense/FASMEE Website

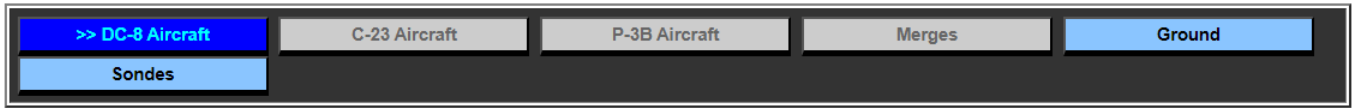
Data Access

Document Upload/Download

dataID Registration and Data Upload



SARP-West Website Example: Data Access



Current list for the DC8_AIRCRAFT Data:

PI Directory	Last Updated	Parameters	Measurement / Research Description (SARP_2022)
BENNETT.RYAN/	May 09, 2023	+ Show VarList	NSRC DC-8 Meteorological and Navigation Facility Instrumentation
DIGANGI.JOSHUA/	Jun 27, 2022	+ Show VarList	NASA LaRC Trace Gas Measurements
DISKIN.GLENN/	Jun 27, 2022	+ Show VarList	NASA LaRC Diode Laser Hygrometer
NEHRIR.AMIN/	Jun 29, 2022		NASA LaRC High Altitude Lidar Observatory (HALO) - Water vapor, aerosol and cloud profiles
STCLAIR.JASON/	Jul 18, 2022	+ Show VarList	NASA GSFC in situ formaldehyde
ZIEMBA.LUKE/	Jul 13, 2022	+ Show VarList	

BENNETT.RYAN/

Filename	Recv'd/Updated	Size (KB)
SARP-MetNav_DC8_20220621_R0_L1.ict	20230509	2715.3
SARP-MetNav_DC8_20220621_R0_L2.ict	20230509	2898.3
SARP-MetNav_DC8_20220623_R0.ict	20230509	5077.9

DIGANGI.JOSHUA/

Filename	Recv'd/Updated	Size (KB)
SARP-CRDS-CH4_DC8_20220623_RA.ict		191.4
SARP-CRDS-CO2_DC8_20220623_RA.ict	20220627	191.4
SARP-CRDS-CO_DC8_20220623_RA.ict	20220627	191.3
SARP-CRDS-O3_DC8_20220623_RA.ict	20220627	344.6
SARP-CRDS-CH4_DC8_20220621_RA_L1.ict	20220621	101.7
SARP-CRDS-CH4_DC8_20220621_RA_L2.ict	20220621	103.6
SARP-CRDS-CO2_DC8_20220621_RA_L1.ict	20220621	101.8
SARP-CRDS-CO2_DC8_20220621_RA_L2.ict	20220621	103.6
SARP-CRDS-CO_DC8_20220621_RA_L1.ict	20220621	101.8

Data Organization:

1. locationID (Platform)
2. Principal Investigator
3. dataID (identifier)
4. Dates

Current Understanding of FireSense and FASMEE LocationID/Platforms

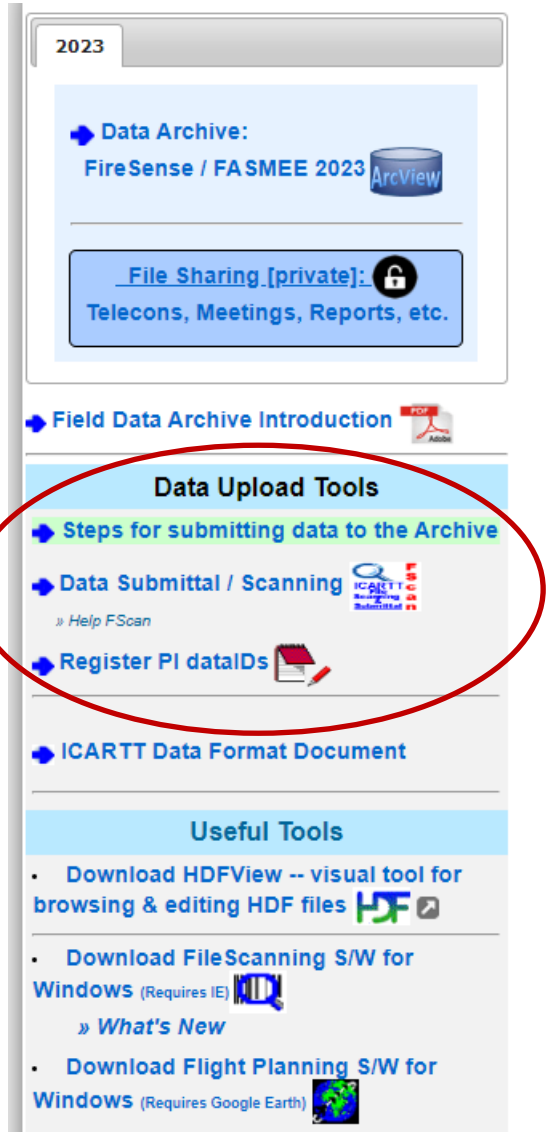
- Planned FireSense LocationID/Platforms:
  - Aircraft: AFRC B200 (MASTER data at ORNL?), AFRC C-20A, Dynamic Aviation B200, LaRC B200, PA-39
  - Ground locationID for SDSU Drone measurements: TREX-Val, MILAND-Val
- FASMEE LocationID/Platforms: fire location based
  - Will be finalized after examining the sample and in consultation with the FASMEE team

Points of Contact

- **Field Repository (www-air.larc.nasa.gov)**
  - Michael Shook, NASA Langley Research Center, michael.a.shook@nasa.gov, 757-864-5793
  - Gao Chen, NASA Langley Research Center, gao.chen@nasa.gov, 757-759-5642 (cell)
  - Ali Aknan, AMA/NASA Langley Research Center, ali.a.aknan@nasa.gov, 757-951-1609
  - Morgan Silverman, AMA/NASA Langley Research Center, morgan.l.silverman@nasa.gov (standard name issues)

Two-Step Data Submission Process

- DataID Registration (one-time process):
  - dataID is part of the filename and will be used to organize PI files on the data repository
  - PI will need to first register dataID(s) before files can be submitted
- Data Submission:
  - File submission is through a scanning tool for checking filenames
  - ICARTT files are scanned for file contents:
    - File header: structure and keywords
    - Data Flags for missing data, LOD codes
    - Time Stamps: monotonically increase with no overlaps
  - Offline file checking by data managers for HDF/netCDF
  - Support zipped multi-file upload
  - Script-based batch upload available



DataID Registration Page

PI Last Name :

PI First Name :

Platform (LocationID) :

NASA AFRC B200 Aircraft (AFRC-B200)

dataID: (max 45 chars) *Prefix with "firesense- OR fasmee-"* e.g., firesense-CO2	**Data Description:** (max 380 chars) *Describe your measurments; e.g.,* Carbon Dioxide Mixing Ratio	**Instrument(s):** (max 190 chars) *List Instruments; e.g.,* LI-COR 6252
Reset firesense-;fasmee-	Enter one description per line AND press Enter	Enter one instrument per line

+ Add Another dataID - Remove Last Entry

Upload Your Instrument(s) Description Document: Choose File No file chosen (Select your file)

(NOTE: Any new file/document upload WILL OVERWRITE your previously uploaded document)

(If you have more than 1 file (document) to upload, please email the files to: gao.chen@nasa.gov and/or ali.a.aknan@nasa.gov. Thank you!)

☐ OVERWRITE my previous record (i.e., ALL previously registered dataIDs for this mission will be removed).

Link to PI website, instrument, experiment description, etc

http:// *Optional: to display on LaRC Archive webpage*

Text describing PI experiment or measurements (e.g., NASA LaRC DIAL - Troposphere O3, Aerosols, and Clouds Profiles):

Optional: to display on LaRC Archive webpage

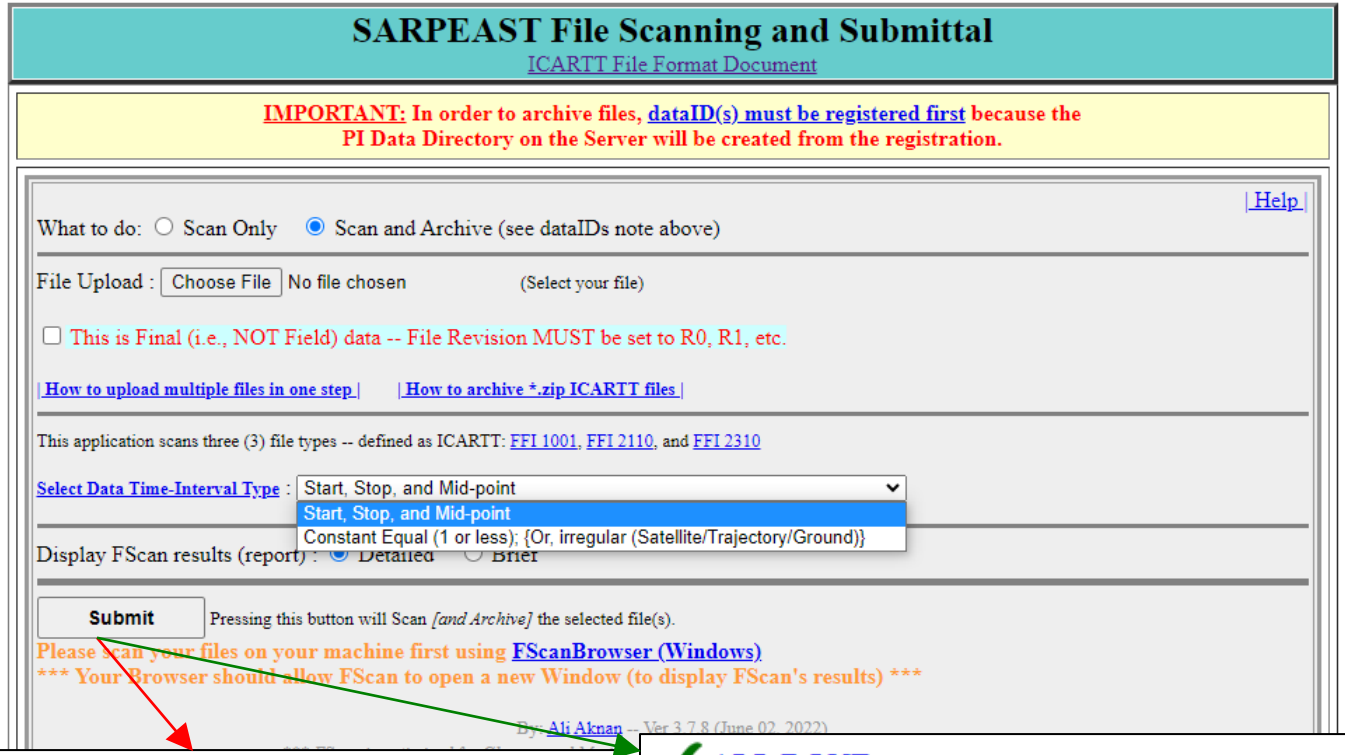
Submit

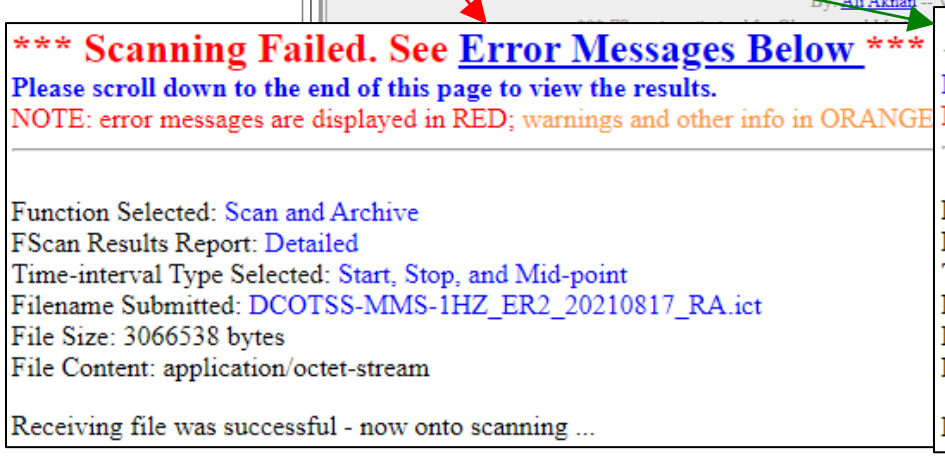
Current Registered dataIDs on the Server for FireSense / FASMEE

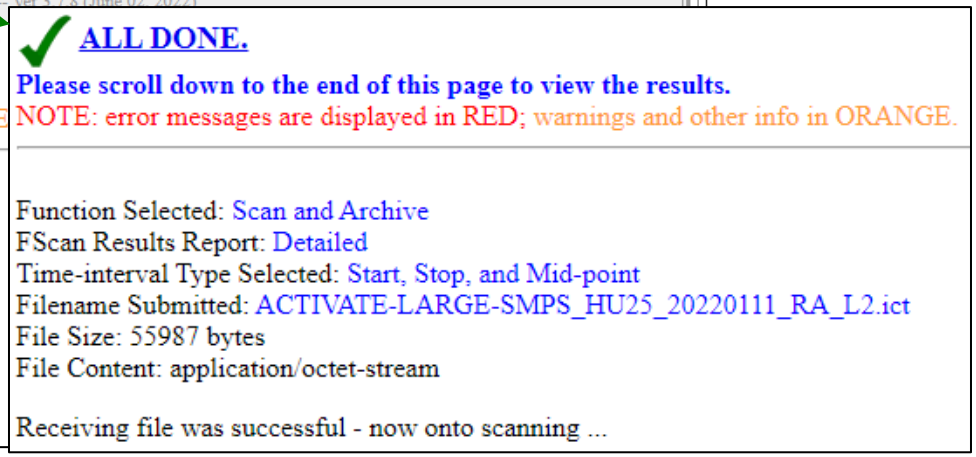
PI Name: Last.First	LocationID	Registered dataIDs

Click on "Refresh" to retrieve the latest list.

FScan Page



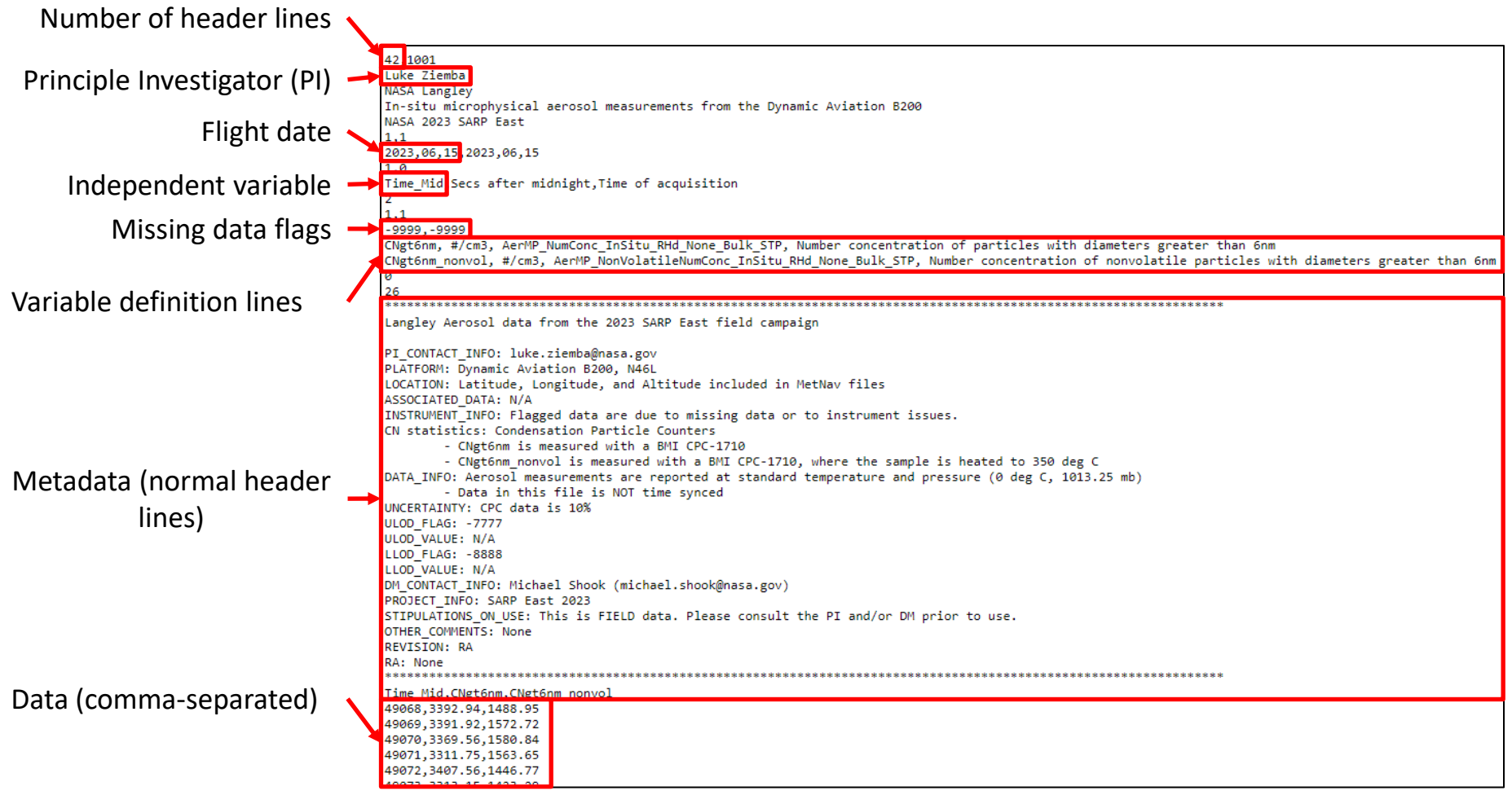




Note: results open on a separate page, may need to change browser permissions

ICARTT Format

- CSV text file with prescribed header format
- Self-describing (can be read programmatically)
- https://www.earthdata.nasa.gov/s3fs-public/imported/ESDS-RFC-029v2.pdf



ICARTT File Naming Convention

DataID_LocationID_YYYYMMDD_R# [_Description].extension

- **DataID**: a short description of measured parameter/species, instrument, or model prefixed by “FASMEE-”
- **LocationID**: an identifier of measurement platform/type, will be provided on the website in a drop-down box
- **YYYYMMDD**: **UTC** date of takeoff for flight data or the beginning of the measurement for ground sites
- **R#**: Revision identifier. Typically RA, RB, RC, … for field data and R0, R1, R2, … for the publication quality data. Note: archived files cannot be overwritten, *only replaced with subsequent revisions*
- **Description**: optional additional description of the file if necessary
- **Extension**: “ict” for ICARTT files, and “h5” for HDF 5 files, nc for netCDF files, etc.
- The underscore, “_”, is used ONLY to separate the different fields of the filename
- Examples: the filename for SARP-East LARGE aerosol optical measurements made on a June 15, 2023 flight may be:
  - SARPEAST-LARGE-OPTICAL_DA-B200_20230615_RA.ict (for field data)
  - SARPEAST-LARGE-OPTICAL_DA-B200_20230615_R0.ict (for publication quality data)

Other Data Reporting Requirements

- **All files should follow ICARTT file naming convention**
- Keep the same number of variables and variable names for same dataID
  - Needed to facilitate online merge tool as the online merge tool UI is based on the latest submission
  - Required for publication quality files
- Use fixed variable name(s) for Time Stamps, i.e., Time_Start, Time_Stop, and Time_Mid
- Indicate if the data is synched with the sampling time standard determined by the science team
- Variable standard names are required for publication quality data .ict files
- Add attributes for standard names when using netCDF or HDF format to maintain uniformity
- Publication-quality data cannot have mandatory user requirements or stipulations on use

Data Reporting Requirements (cont.)

Atmospheric Composition Variable Standard Names (ACVSN)

- Standard name is designed as a “tag” to enhance data discoverability, usability, and ingest processing
  - Measurement category and CoreName are for discoverability across missions and archival process
  - Attributes: information for data use and more detailed search
- Please use the fields from the ACVSN list:

https://www-air.larc.nasa.gov/missions/etc/AtmosphericCompositionVariableStandardNames.pdf

- New standard names can be added by contacting Morgan, Gao, or Michael
- Morgan will check the files on the repository and provide feedback to PI as necessary
- Best practices:
  - Use “none” for non-data product variables, e.g., total temperature
  - Use the same standard name for main variable and ancillary variable, e.g., O3 and O3_unc
  - Additional information should be provided in long name/description

Example Document Sharing Page

- https://www-air.larc.nasa.gov/cgi-bin/DocXhg/SARPDocs

Login here to view/upload documents

User ID :

Password : Login

SARP Documents / File Sharing

Status Update	Telecons	Presentations	Publications	Forecasts	Meetings	Research & Other Docs	Mission Reports	Hide All

No.	Date Recv'd	[Author Name] Document Description
1.	2023-06-15	[Travis] DA-B200 Flight Report 20230613 1230 [1.69 MB] * mission_report
2.	2023-06-15	[Travis] DA-B200 Flight Report 20230613 0930 [1.13 MB] * mission_report
3.	2023-06-15	[Travis] DA-B200 Flight Report 20230613 1230 [1.44 MB] * mission_report
4.	2023-06-15	[Travis] DA-B200 Flight Report 20230613 0930 [1.13 MB] * mission_report

* *Login Required*

Example Document Sharing Page

- https://www-air.larc.nasa.gov/cgi-bin/DocXhg/SARPDocs
- File upload process:
  - Log in
  - Choose file, document type, author name, and text to appear on the file list
- File list is public, but viewing/downloading requires logging in