



AIRBORNE SCIENCE PROGRAM

FLIGHT REQUEST PROCEDURES

User Guide

Updated 6/21/21

NASA Science Mission Directorate

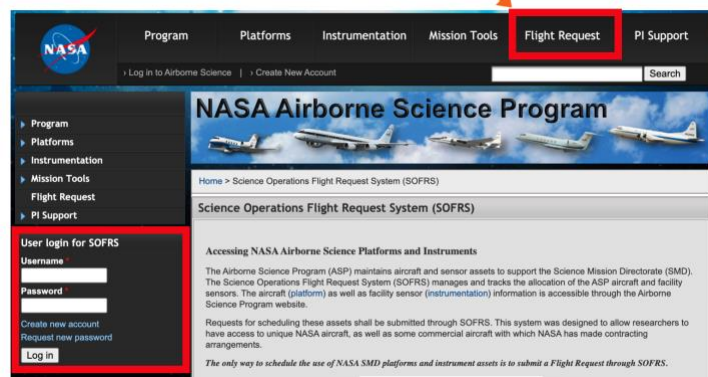
STEP 1 Log into SOFRS

Flight requests are entered into the Airborne Science Program's (ASP) Science Operations Flight Request System (SOFRS). The SOFRS curators are Vidal Salazar, Sommer Nicholas and Stevie Phothisane (sofrs_curators@airbornescience.nasa.gov). Please feel free to contact them if you have any questions.

SOFRS

The main focus of SOFRS is to be a communication tool between the airborne science community and the NASA aircraft facilities program and project managers. Once a flight request is submitted into the system, an email is generated and sent to aircraft and funding groups. Once all the details of the flight request are identified and analyzed, the aircraft group will reach out to the flight request users for additional information, cost estimates, etc.

SOFRS can be accessed directly using the following link <https://airbornescience.nasa.gov/sofrs/> or by clicking on "Flight Request" on the top right menu bar of the ASP website.



On the left side bar, you may log into the Flight Request system. If this is your first visit, please click the option to "Create new account" and establish your account.


If you've forgotten your password, select the option to "Request new password." You will be prompted to enter either your username or email address. SOFRS will send you a new password by email right away. Follow the instructions in the email to reset your password.

If you've forgotten your username, enter your email address. You will receive an email with your username and a one-time login link.

STEP 2 Create a Flight Request

After you've logged in, click "New Flight Request" and follow the submittal instructions. Please note that the "Flight Requests" link is a running list of the Flight Requests that you are associated with.

To begin, name the project and enter as much information as possible. All of the information requested in the form is important for tracking and reporting throughout the life of your request. **Missing info will not hold up the submittal.** There is, however, certain basic information (PI, aircraft, instrument(s), dates of data collection, mission location and funding source) that is critical to ensure your request is properly routed and addressed in a timely manner and processed for approval.

There are information buttons  for most fields to define what needs to be entered there. Just hold your mouse over the icon for additional text to appear.

SOFRS Reporting

SOFRS reporting is based on the fiscal year (designated by the first two digits of the log number) and the aircraft (third digit). Therefore, a separate flight request must be submitted for each fiscal year of the project, as well as separate aircraft. The curators can copy a flight request for you for a different year or aircraft.

General Information

Project Title: The name you are giving to your project.

Project Acronym: The unique acronym for your project. Please choose from the pull-down menu or enter your “new” acronym to be approved by the SOFRS curators.

Fiscal Year: The US Government fiscal year is from October 1st – Sept 30th. Please indicate the fiscal year in which you plan to fly your experiment.

Multi-Fiscal year Mission: Please indicate if this a multi-fiscal year mission. If this mission will be occurring during more than one fiscal year a flight request must be submitted for each year. To make this easier you can fill out one for the first year and then check this box. Please contact a SOFRS curator to make copies for each additional fiscal year.

Principal Investigator

PI: Choose from one of the three options (“select a listed PI”, “I am the PI” or “create a new PI”). Please note, you can have someone else submit the FR (the owner) and list you as PI. Both of you will then have access and edit permissions. If you are not the PI and the PI is not in the drop-down list provided, choose “Create a new Principal Investigator” and fill out the additional information.

Data Collection Window(s)

Create additional data collection window: Start Date and End Date.

Aircraft

Aircraft: The aircraft selection pull down provides a list of the most commonly used NASA aircraft. Please select the aircraft you would like to use from the list. For aircraft (NASA or independently contracted) not on the list, select “Other.” You will then see a pulldown of commonly used other aircraft. However, if the aircraft you are intending to use is not on the list, select “Other” again and you will see a blank space to type in the aircraft's name and a pull down to choose a NASA Center that you most likely will be working with for this “Other” aircraft. If you don’t know or are not sure, select “Other-Any”. If you select “Other-Any”, your flight request will be sent to all the centers who manage aircraft.

Multi-Aircraft Mission: If there will be more than one aircraft participating in the mission, please check this box. Remember that each FR is specific to one aircraft one fiscal year.

Mission Location: NASA Center(s)/State(s)/Country(ies) of main collection sites.

Foreign Airspace: Please check this box if the mission requires flying over and/or will be based in foreign airspace/territory.

Flight Hours Requested: The number of actual flight hours requested to obtain the needed measurements. This figure should not include time for integration but does include test flight hours. If you are unsure of the needed flight hours, please input your best estimate and the selected aircraft project manager will help you calculate a number that reflects your payload requirements.

Funding

Request Type: A **Normal** FR is a request for a planned flight opportunity, while a **Placeholder** is a project in the proposal process (this informs the program of the anticipated need for a cost estimates for the proposal and allows the aircraft groups to schedule missions). **Piggyback** is a no cost instrument addition to an existing flight request. Costs related to integration and other mission peculiar costs for the piggyback instrument will be the responsibility of the piggyback group. The goals of the piggyback instrument cannot change the original science flight lines. Piggybacks are essentially along for the ride, as the flight tracks are determined by the primary FR owner.

ROSES Call: If this is being submitted as part of a NASA Research Opportunities in Space and Earth Sciences (ROSES) call, select Yes and enter the call number into the field provided.

NASA Funded: Select Yes or No.

Contract Grant #: If the flight request is funded, please include the name of the contract or the NASA grant number.

Funding Source

Funding Source: Select from the drop-down list of Program Managers and/or Funding Sources.

NASA HQ Science Concurrence: This shows a dropdown list of NASA Program Managers and their disciplines. To get the ASP subsidized rate for ASP supported aircraft flight hour costs, you must have a NASA SMD Funding Source or a NASA SMD Science Concurrence that the science is of interest to NASA. If NASA SMD ESD is not the funding source, please select a name from the NASA HQ Science Concurrence list **only if** the Program Manager has already agreed to provide the concurrence.

If the appropriate Funding Source or NASA HQ Science Concurrence is not listed in the dropdown, please note you can request an addition be made to the list. Select "Create a new Funding Source/NASA HQ Science Concurrence" to do so. Upon approval, they will automatically be added to your FR.

NOTE: When new PIs / Funding Sources / Science Concurrence are submitted, SOFRS will notify the curators. The request must be reviewed and approved by the curator(s) before the addition to the SOFRS system is final.

Instrument(s) and Satellite Communications

Instrument: Please select the instrument(s) you wish to use from the list. If you do not see your desired instrument, select "other" and type the instrument's name into the box that appears. Some instruments (i.e. Facility Instruments) may require instrument concurrence before the request is approved. For more information on the definition of a facility instrument, including the platforms on which they have previously flown, please see the [facility instrument](#) list. For information on other instruments previously flown on-or available for NASA aircraft, please see the [instrument database list](#).

New Integration: Indicate if this will be the first time the instrument has been integrated into the selected aircraft.

Ground Resolution or Altitude: For remote sensing missions, please indicate the maximum ground pixel resolution that will achieve the science objectives.

Comments: Any additional instrument specific information/requests should be included here. For multiple instrument entries, a new box will automatically appear after completing the "Comments" section.

Unique Configuration: Please check this box if your project requires special handling or if it is unique or new configuration.

Xcube: Please Check this box if your project will require cubesats (Xcube) in the ER-2 forebody pod.

Instrument Communication via Satellite: Please indicate whether the instrument will require real-time downlink from the aircraft (such as INMARSAT, Iridium, or Ku) during these flights. If selected, you will then be asked to indicate the required bandwidth configurations (high, low, or both). Please note that costs for low bandwidth are covered by the ASP program, while high bandwidth may incur additional costs to the project, depending on bandwidth and total hours required. For more details, please visit the [PI support tab](#) and review the [SATCOM Requirements and Costing](#). For more information and support contact Don Sullivan (donald.v.sullivan@nasa.gov or 650-604-0526) or Dave Van Gilst (vangilst@baeri.org or 701-330-2978).

Bandwidth: If you know specifically what bandwidth types you'll be using please specify here, otherwise please review the [SATCOM Requirements and Costing](#) and contact Don Sullivan (donald.v.sullivan@nasa.gov or 650-604-0526) or Dave Van Gilst (vangilst@baeri.org or 701-330-2978) for specific pricing.

Comments Regarding Bandwidth: Any additional instrument specific information/comments should be included here.

Instrument Concurrence: Some instruments, (i.e. AVIRIS, UAVSAR) have NASA HQ sponsors who will need to give their permission for the use of the instrument. This is known as Instrument Concurrence. Please note, data processing fees may not be covered even if Instrument Concurrence has been granted.

Support Satellites

Add Satellite: Please select any satellite mission(s) that will be supported by this Flight Request (e.g., will be calibrated or validated by some or all of the flights).

Specific Requirements: Please provide any additional information about how satellite requirements will affect the requested flights, including details about necessary satellite overpasses.

Associated Users/Contacts

Associated User: Associated users are other SOFRS users who are allowed to view and/or edit this flight request (for example, co-Investigators). If the mail option is selected, the user will also be included on all SOFRS emails about the flight request. Users listed here with view and edit privileges also have the ability to submit flight reports. This functionality is for flight requests that are flying on "Other" aircraft.

Additional Contact: You can add other members of your team that can be an alternate point of contact for the aircraft team.

Rationale for use of NASA Facilities: NASA maintains a fleet of unique, highly modified, science capable aircraft. This information should explain why NASA aircraft are appropriate for the observations requested. If a NASA instrument is being used, its use should also be explained here.

Science Objectives: Please describe in as much detail as possible the overall science goals of the requested flight(s).

Mission Concept-of-Operation: Briefly describe the operation of the payload and the proposed flight operations required to meet the science objectives of the mission.

Data Collection Details

Start Date/End Date: Enter the ideal timeframe for data collection for the experiment. Dates must be entered in mm/dd/yyyy or mm-dd-yyyy format. Please update this information as dates become finalized. It is important to be sure your Flight Request is approved well before your flight window begins. Please note, you will receive an error if the start date is in one fiscal year, and the end date is in a different fiscal year. Each fiscal year will require a separate flight request. For example, if the start date is September 1, and the end date is October 30, two flight requests will be needed.

Time of Day: Please indicate the time of day required to obtain the required observations.

Weather Conditions: Indicate particular weather conditions that are either required for mission success, or conditions that need to be avoided in order to gather scientifically useful data.

Ground Condition: Describe the observational requirements as they relate to ground cover type, phenology, etc.

Tidal Cycle: For measurements in the coastal zone, indicate whether high or low tide conditions are desired.

Cloud Cover: Please indicate the maximum amount of cloud cover that is permissible as a percent of total cover (100% is complete cloud cover).

Sea State: Please describe the observational requirements as they relate to the height, period, and character of waves on the surface of a large body of water.

Sun Angle Limits: Please indicated any limitations to the measurement introduced by high or low sun angles.

Other Observation Requirements or Additional Comments: Please describe any other requirements not listed above that are needed to ensure mission success.

Flight Plans:

Flight Plans: Insert flight lines, boxes, or points when they are available. If you have flight plans already generated, which is often the case with the UAVSAR instrument, then you may skip this section and attach a *kml* file with the proposed flight plan to the “Attached Files” section. Another option is to put a link to another website with the proposed flight plan in the “Additional Comments” section for Data Collection Window (shown below).

Attached Files: You may also attach files, including flight plans, if needed.

Data Archive Location(s)

Data Archive Location(s): Please indicate where your data will be finally held at the completion of the project.

STEP 3 Submit the Flight Request

When you are done filling in the Flight Request press “Submit Request” at the bottom of the page.

The screenshot shows a web form titled "Data Archive Location" with a "View/Save - Hide - Edit" menu in the top right. The form contains a section for "Data Archive Location(s)" with radio buttons for "PI", "DAAC", "ESPO", and "Other". Below this is a text area for "Comments about Data Archiving:". At the bottom of the form, there are three buttons: "Save for Later", "Generate PDF", and "Submit Request >>>". Red arrows point to the "Save for Later" and "Submit Request >>>" buttons.

Alternatively, if you are not done filling out the Flight Request, you can save your work by clicking “Save for Later.” No one else will see the Flight Request until you have submitted it. As soon as the Flight Request has been submitted, SOFRS will notify the curators. The curators will, in turn, assign a Flight Request log number.

If information needed to complete the flight request is missing, a note will appear identifying the missing items. This will not stop the submittal of the FR, but is a reminder that more information will be required for approval to be granted.

The SOFR system will notify the aircraft leads for the aircraft you choose and, if you’ve chosen one of the facility instruments, that lead will also be notified. The Aircraft Leads will then contact you to discuss the details of your request. If you need to reach them, their contact info is in the current Call Letter (https://airbornescience.nasa.gov/asp_call_letter).

The SOFR system will also notify the NASA HQ Science Concurrence, Instrument Concurrence, Funding Source(s), and the SOFRS curators. You will receive an email showing your Flight Request has been submitted. There will be a PDF of the Flight Request attached. If you wish to get an updated version of the PDF you can use the button at the bottom of the FR page as well.

FRs remaining “un-submitted” for more than 3 months can be deleted at the discretion of the curators. If a PI is listed in the FR, the PI will be contacted before the un-submitted FR is deleted.

Submitted FRs will never be deleted. They can be deferred or canceled, but the record will still be in the system and can be viewed by those associated with the Flight Request.

STEP 4 Editing the Flight Request

The FR is considered a “living document” and should be updated throughout the approval process. All changes must be made to the Flight Request in SOFRS. To have access to all the flight requests you are associated with, when logged into the SOFR system, click on “View My Current Summary” and select the appropriate log number hyperlink from your list. Changes to the FR are saved as they are entered. When you

are done making revisions, click “Save Changes” at the bottom of the screen and it will take you back to the main page.

If major revisions are made to the FR; you; the aircraft and instrument leads, sponsor, and curators will be notified by email. Changes to the following are considered major revisions:

1. Log Number
2. Instrument
3. Funding Source/NASA Science Concurrence
4. Status
5. Flight Lines
6. Aircraft
7. PI
8. Flight Hours Requested
9. Estimated Cost
10. Flight Hours for Approval
11. Location
12. Supported Satellites

Several edits may occur at the same time or on the same day. To avoid numerous mass email notifications, edits will be collected at midnight and only one email for each FR will be sent out. The email will identify the FR with Log #, PI name, Experiment Title, Grant # (if available), and a list of the categories changed will be in the text. It will also have the URL to directly access the flight request in SOFRS and a PDF of the Flight Request attached.

STEP 5 Schedule Flight(s) and Coordinate Experiment

After your Flight Request Log Number has been issued, you should begin coordinating with the Facility Instrument Lead, the Aircraft Lead and any other relevant parties. Please remember to update your Flight Request if needed as the discussions evolve.

STEP 6 Review and Approval Process

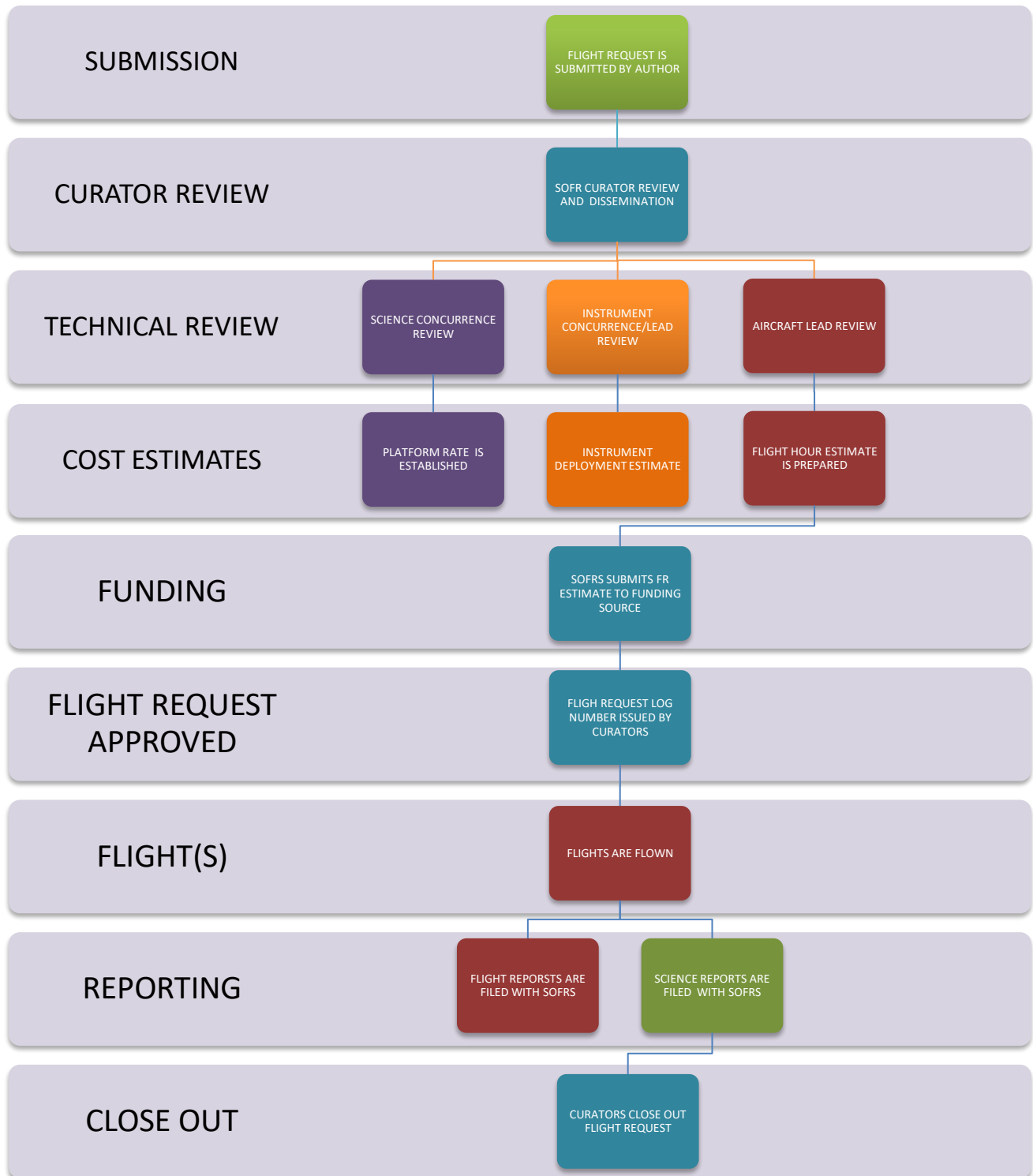
After the Aircraft and Instrument Leads have discussed the FR with the PI and created an estimated number of flight hours to be approved, as well as an overall cost, this information is then added to the FR. The curators then will request approval of the funds from the funding source you’ve listed, approval of the use of the aircraft from the Airborne Science Program Director and science and instrument concurrence (included facility instruments) as needed. Once these approvals are confirmed, the curators will change the status of the FR from OPEN to APPROVED.

Again, if using a non-NASA aircraft, an airworthiness review by one the NASA Centers is required before the FR can be approved (please check the current call letter). The safety board leads are automatically notified and should contact the PI to schedule the review. If the flights will take place in international territories, the process is likely to take several months. Please notify the curators if you do not hear from a safety representative in a timely manner.

Note: Once the Flight Request status is “Approved”, the FR cannot be edited. If changes are needed, please contact the curators.

Flight Requests must have a log number that reflects the fiscal year in which it will fly. If a Flight Request slips from one fiscal year to the next, the curators must rollover the FR to the next FY and give it a new log number. If at any point in the process the curators are notified that the FR is deferred or canceled, the FRs status will be changed accordingly.

OVERVIEW OF FLIGHT REQUEST PROCESS FOR A PREVIOUSLY INTEGRATED INSTRUMENT ON NASA AIRCRAFT IN DOMESTIC AIRSPACE



STEP 7 Reporting

The screenshot displays the NASA Airborne Science Program website interface. At the top, there is a navigation bar with the NASA logo and tabs for Program, Platforms, Instrumentation, Mission Tools, Flight Request, and PI Support. Below the navigation bar, there is a search bar and a main banner for the Airborne Science Program featuring images of aircraft. A left-hand sidebar contains a menu with categories like Program and Platforms, listing various options such as Aircraft Comparison, Mission Map, and Flight Request. A dropdown menu is open under the 'Platforms' category, listing options like Aircraft Comparison, Mission Map, Core Aircraft Video, Asset Tracker, Flight Request, Aircraft Current Status, Aircraft Overview Schedule, Aircraft Detailed Schedule, 5 - Year Plan, Aircraft Activities by Flight Request, Flight Reports, Submit Flight Report, Airborne Science Customer Feedback, and ASP Sensor Network. A red arrow points to the 'Submit Flight Report' option in this dropdown menu. The main content area shows text about the program providing a unique set of NASA supported aircraft and information on how to submit flight reports, including a link to <http://airbornescience.nasa.gov/sofrs>.

Flight Reports

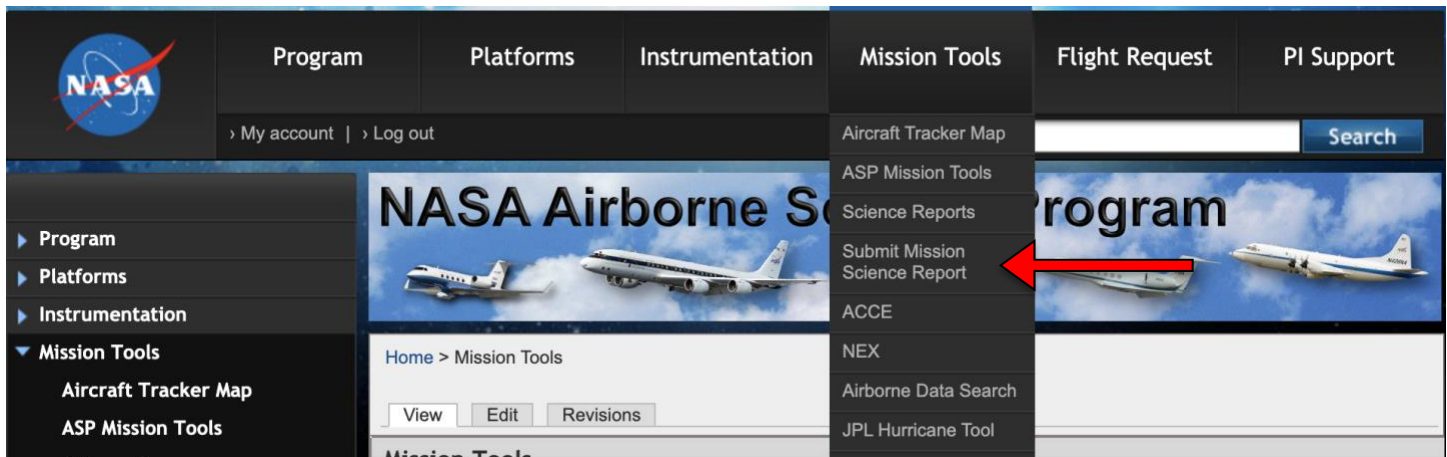
The timely submission of Flight Reports is required for the use of the NASA assets and facilities. Flight Reports for NASA Aircraft are submitted by the aircraft lead. If your Flight Request is not utilizing one of the NASA aircraft listed, it may be classified with a log number that has "M" for miscellaneous. In this case you will receive an email that will notify you that you are responsible for submitting a Flight Report after each flight. A Flight Report can be submitted by the person who submitted the Flight Request, the PI, or a team member listed in the Associated Users section and has been given the appropriate permissions. The flight report form is on the Airborne Science Program website. To learn how to submit a Flight Report visit

http://airbornescience.nasa.gov/content/How_To_Submit_Flight_Reports

Please contact the curators with any questions.

Science Reports

The Airborne Science Program is providing an online form for Science Reports. Your login is the same as your login to SOFRS. As with the Flight Report above, a Science Report can be submitted by the person who submitted the Flight Request, the PI, or an Associated User, who has been given permission to edit the Flight Request.



The screenshot displays the NASA Airborne Science Program website interface. The top navigation bar includes the NASA logo and menu items: Program, Platforms, Instrumentation, Mission Tools, Flight Request, and PI Support. Below the navigation bar, there is a search bar and a 'Search' button. The main content area features a banner with the text 'NASA Airborne Science Program' and an image of two aircraft. A red arrow points to the 'Submit Mission Science Report' option in the 'Mission Tools' dropdown menu. The left sidebar contains a navigation menu with options: Program, Platforms, Instrumentation, and Mission Tools (expanded to show Aircraft Tracker Map and ASP Mission Tools). The bottom of the page shows a breadcrumb trail 'Home > Mission Tools' and buttons for 'View', 'Edit', and 'Revisions'.

STEP 8 Flight Request Close Out

When the last flight report is entered, please check the “Completes Flight Request” box on the flight report. The SOFRS curators will then change the status of the FR from APPROVED to COMPLETED.

For more information and questions, please contact the SOFRS curators.

Vidal Salazar, Sommer Nicholas and Stevie Phothisane (sofrs_curators@airbornescience.nasa.gov).