



AIRBORNE SCIENCE PROGRAM

FLIGHT REQUEST PROCEDURES

User Guide

Updated January 28, 2021

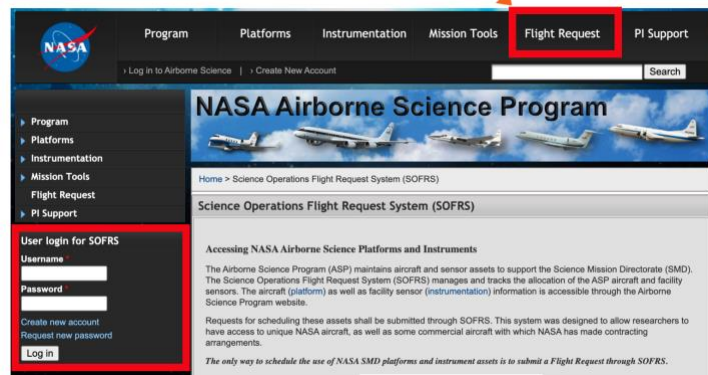
NASA Science Mission Directorate

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, & Stevie Phothisane (sofrs_curators@airbornescience.nasa.gov). Please feel free to contact them if you have any questions.

SOFRS

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.



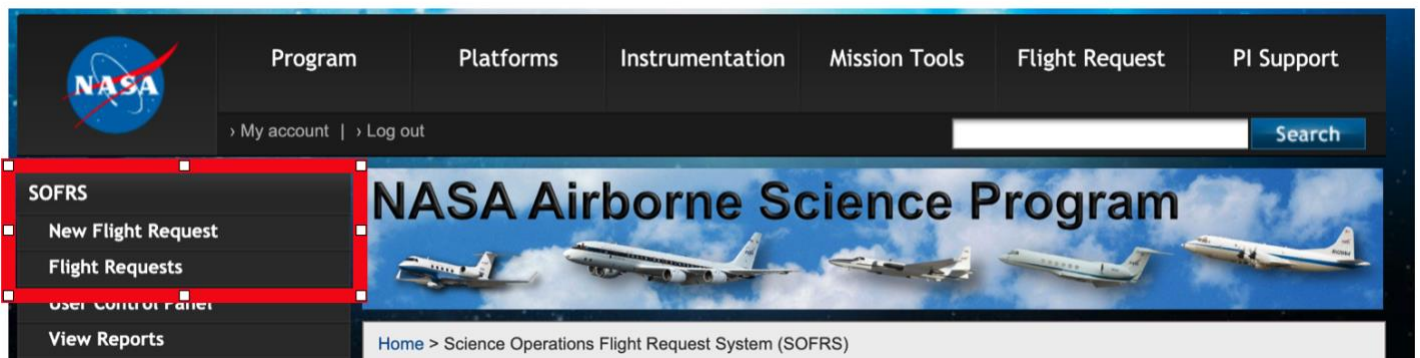
On the left side bar, you may log into the Flight Request system. If this is your first visit, please click the option to "Create new account" and establish your account.

If you've forgotten your password, enter your username and click on "Request new password." 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 "Flight Requests" is a link to 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, funding source, and science concurrence) that is critical to ensure your request is properly routed and addressed in a timely manner and processed for approval.

SOFRS Home > New Flight Request

New Flight Request 26 Jan, 2021

General Info View/Save - Hide - Edit

Project Title:

Project Acronym:

Fiscal Year:

Multi-Fiscal Year Mission:

FR ID: 20210126-120708

Principal Investigator View/Save - Hide - Edit

PI

Select a listed PI:

Search for last name / Select from list

Or I am the PI

Or [Create a new PI](#).

Data Collection Window(s) View/Save - Hide - Edit


Additional fields related to the Data Collection Window can be provided down below in a separate section

Create new data collection window:

Start Date End Date

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.

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.

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

Project Acronym: The unique acronym for your project.

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. A SOFRS curator will contact you to make copies for each additional fiscal year.

PI: Choose from one of the three options. Please note, you can have someone else submit the FR (the author) 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 list provided, choose “Create a new Principal Investigator” and fill out the additional information.

Create new data collection window: Start Date & End Date.

Aircraft: The aircraft selection input provides a list of the ASP Supported Aircraft and the most commonly used Other NASA Aircraft. Please select the aircraft you would like to use from the list, or for unlisted NASA aircraft or for independently contracted aircraft select "Other" and type in the aircraft's name. Some listed aircraft have multiple options --if you do not know which one to use (or don't care which one is used), please select the "Any" option.

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 an aircraft and a 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.

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 anticipated need for purposes of scheduling missions and allows the PI to get a good cost estimate for the proposal). 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 flight track. 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: 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 NASA rate for flight hour costs, you must have a NASA SMD Funding Source or a NASA SMD Science Concurrence. If NASA SMD 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: Please select the instrument 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 may require instrument concurrence before the request will be approved. For more information on any specific instrument, including the platforms on which it has previously flown, please see the [instrument database](#).

New Integration: Indicate if the instrument has been integrated into the selected aircraft before.

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.

Unique Configuration: Please check this box if your project requires unique 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 it does, 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, depending on bandwidth and total hours required. For more details, please review this page for information on [SATCOM Requirements and Costing](#) and contact Don Sullivan (donald.v.sullivan@nasa.gov or 650-604-0526) or Dave Van Gilst (d.vangilst@nserc.und.edu or 701-330-2978) for specific pricing.

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 (d.vangilst@nserc.und.edu or 701-330-2978) for specific pricing.

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

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 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. Flight reports for NASA aircraft do not need to use this feature.

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.

Start Date/End Date: Dates must be entered in mm/dd/yyyy or mm-dd-yyyy format of the fiscal year of the Flight Request. 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.

Time of Day: 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.

Weather Conditions: Describe observational requirements as they relate to ground cover type, phenology, etc.

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.

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.

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): 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 interface for submitting a flight request. It is divided into two main sections: "Data Archive Location" and "Flight Reports".

- Data Archive Location:** This section has a header with "View/Save - Hide - Edit". Below the header, there is a label "Data Archive Location(s):" followed by four radio button options: "PI", "DAAC", "ESPO", and "Other". Below the radio buttons is a large text input area labeled "Comments about Data Archiving:". A red arrow points from the top right of this text area down towards the "Submit Request >>>" button.
- Flight Reports:** This section has a header with "View - Hide". Below the header, there are three buttons: "Save for Later", "Generate PDF", and "Submit Request >>>". A red arrow points from the bottom left of the "Save for Later" button up towards the "Submit Request >>>" button.

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 will be updated throughout the approval process. All changes must be made to the Flight Request in SOFRS. To have access to your FRs, when logged into the SOFR system, click on “Flight Requests” and select the appropriate log number 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 for the website 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 the Instrument Lead, the Aircraft Lead and any other relevant parties.

STEP 6 Review and Approval Process

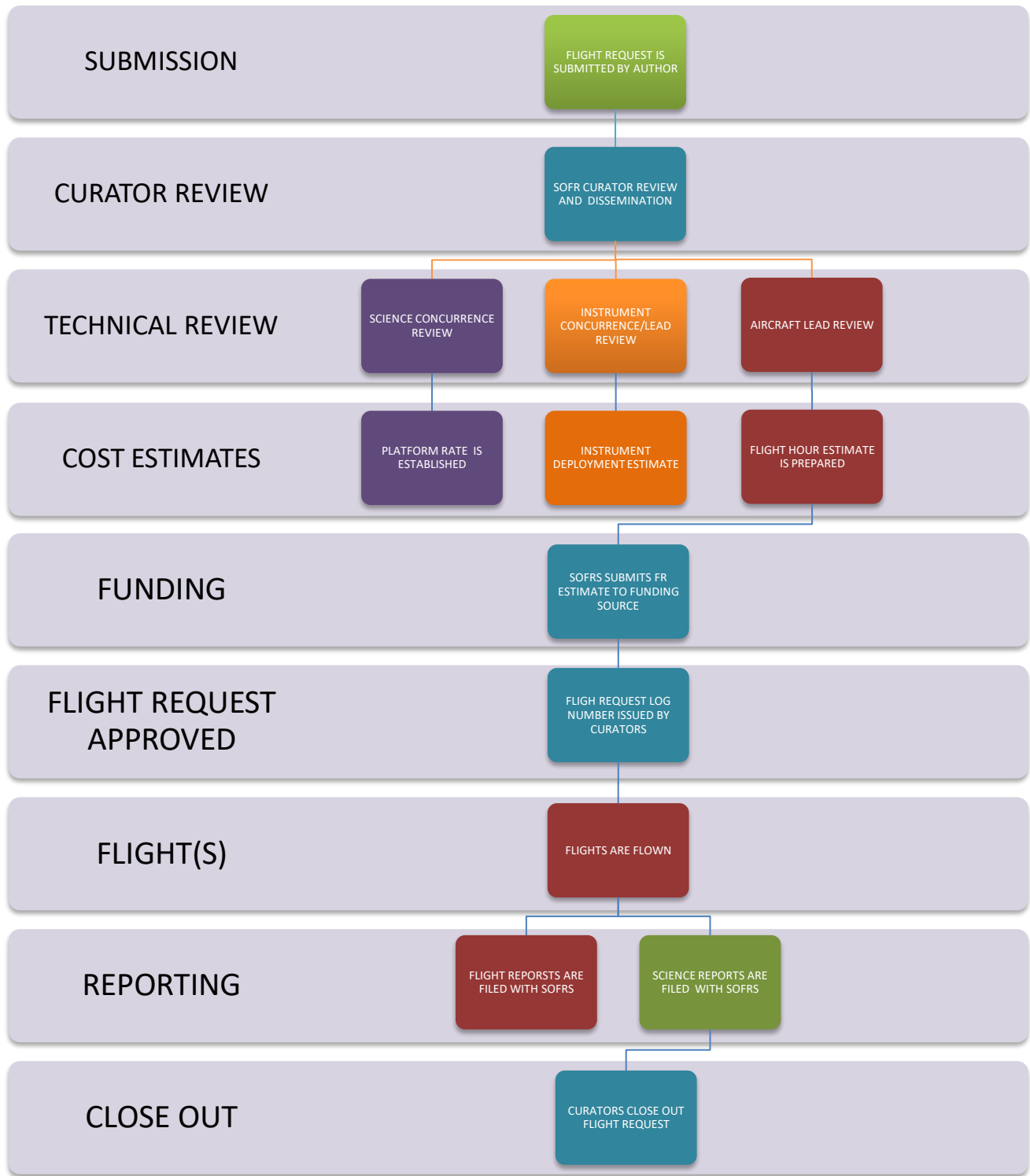
After the Aircraft/Instrument Leads have discussed the FR with the PI and created an estimated number of flight hours to be approved, as well as an overall cost, this information is added to the FR by the aircraft lead. The curators then request approval of the funds from the funding source you've listed as well as approval of the use of the aircraft from the Airborne Science Program Director. 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. 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 (example: Sept 17 to Oct 18), 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

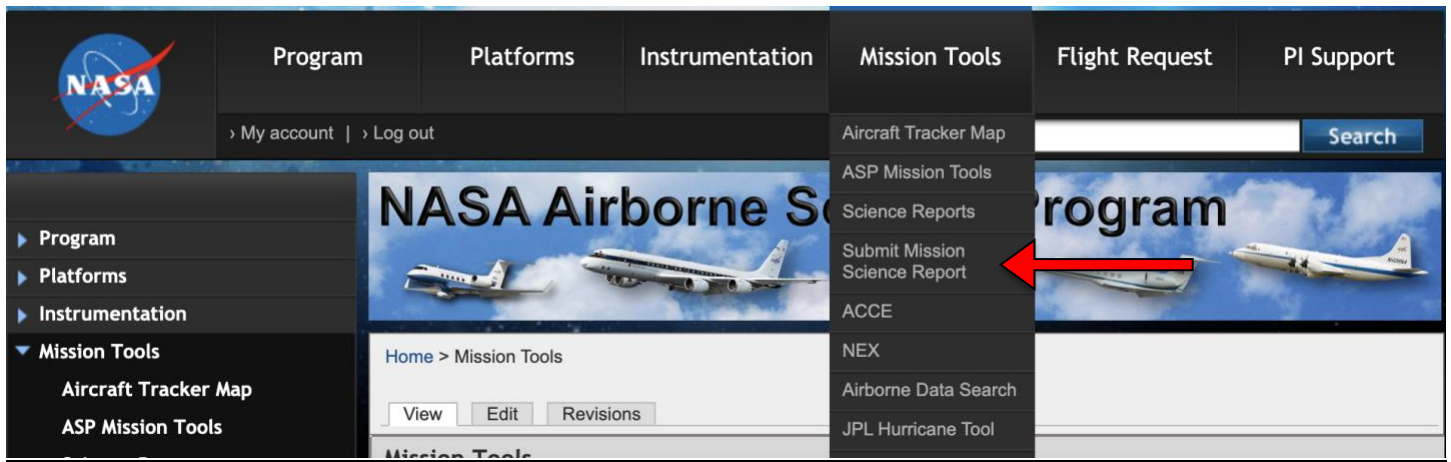
The screenshot shows the NASA Airborne Science Program website. The top navigation bar includes the NASA logo and tabs for Program, Platforms, Instrumentation, Mission Tools, Flight Request, and PI Support. A search bar is located on the right. The left sidebar contains a navigation menu with the following items: Program, Platforms (expanded), All Platforms, 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. The main content area features a banner for the Airborne Science Program with images of aircraft. Below the banner, there is a section titled 'Aircraft' with a list of links: All Platforms, 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' link in the list.

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 now 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.



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 COMPLETE.

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

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