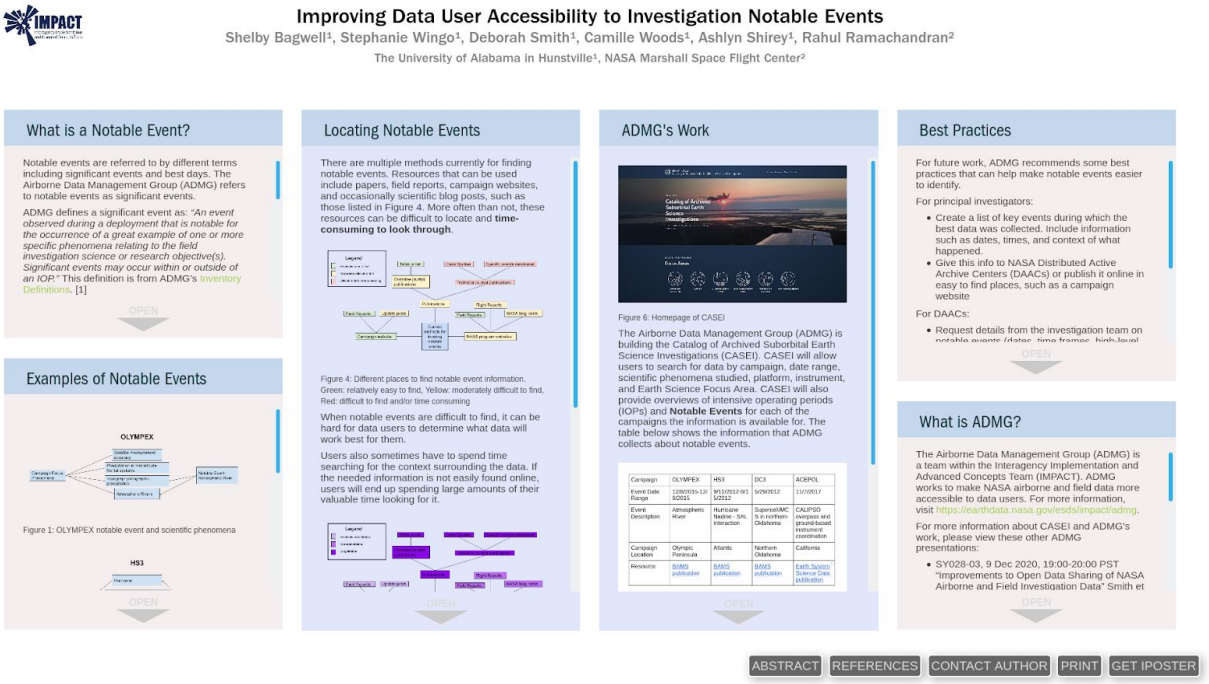
Improving Data User Accessibility to Investigation Notable Events



What is a Notable Event?

Notable events are referred to by different terms including significant events and best days. The Airborne Data Management Group (ADMG) refers to notable events as significant events.

ADMG defines a significant event as: *"An event observed during a deployment that is notable for the occurrence of a great example of one or more specific phenomena relating to the field investigation science or research objective(s). Significant events may occur within or outside of an IOP."* This definition is from ADMG's Inventory Definitions. [1]

Examples of notable events (Figures 1, 2, 3):

- OLYMPEX [2]
    - 8 December 2015
    - Large Atmospheric River, GPM overpass
- HS3 [3]
    - 11-15 September 2012
    - Hurricane Nadine - SAL interaction
- DC3 [4]
    - 29 May 2013
    - Supercell/MCS in northern Oklahoma
- ACEPOL [5]
    - 7 November 2017
    - All instruments operating, CALIPSO overpass

Historically, there has been no effort to provide data users with an easy to access list of notable events for campaign data sets. There is no single source for notable events.

Examples of Notable Events

images

Locating Notable Events

There are multiple methods currently for finding notable events. Resources that can be used include papers, field reports, campaign websites, and occasionally scientific blog posts, such as those listed in Figure 4. More often than not, these resources can be difficult to locate and **time-consuming to look through**. When notable events are difficult to find, it can be hard for data users to determine what data will work best for them.

Users also sometimes have to spend time searching for the context surrounding the data. If the needed information is not easily found online, users will end up spending large amounts of their valuable time looking for it.

The longevity of the resources in Figures 4 and 5 can also make locating notable events challenging. While campaign websites can hold a lot of information, they will only exist as long as they are being hosted. NASA web pages include the Airborne Science Program (ASP), different NASA programs (such as the Precipitation Measurement Mission), and the Distributed Active Archive Center (DAAC) homepages. These tend to have a longer lifespan than campaign websites, but often do not hold much useful information for locating notable events. Journal publications have incredibly long lifetimes, but they are time-consuming to look through.

The combination of a resource's lifespan and difficulty to locate require data users to spend large amounts of time trying to determine what data are useful for them.

ADMG's Work

The Airborne Data Management Group (ADMG) is building the Catalog of Archived Suborbital Earth Science Investigations (CASEI). CASEI will allow users to search for data by campaign, date range, scientific phenomena studied, platform, instrument, and Earth Science Focus Area. CASEI will also provide overviews of intensive operating periods (IOPs) and **Notable Events** for each of

the campaigns the information is available for. The table below shows the information that ADMG collects about notable events.

Notable events are useful for data users because it provides them with quick access to a list of events that have quality data focused on their respective scientific phenomenons. CASEI will also provide the context surrounding the notable events and will provide users with sources for further reading. In addition, CASEI will provide DOIs for data products that will link to the data product landing page. T**his will allow users to quickly determine what data can work best for them.**

Best Practices

For future work, ADMG recommends some best practices that can help make notable events easier to identify.

For principal investigators:

- Create a list of key events during which the best data was collected. Include information such as dates, times, and context of what happened.
- Give this info to NASA Distributed Active Archive Centers (DAACs) or publish it online in easy to find places, such as a campaign website

For DAACs:

- Request details from the investigation team on notable events (dates, time frames, high-level event description) when campaign data is transferred to the DAAC.

- Organize the information and provide it to users through metadata and/or other additional documents associated with the data sets
- Place notable event information on the respective campaign description webpage

What is ADMG?

The Airborne Data Management Group (ADMG) is a team within the Interagency Implementation and Advanced Concepts Team (IMPACT). ADMG works to make NASA airborne and field data more accessible to data users. For more information, visit https://earthdata.nasa.gov/esds/impact/admg.

For more information about CASEI and ADMG's work, please view these other ADMG presentations:

SY028-03, 9 Dec 2020, 19:00-20:00 PST "Improvements to Open Data Sharing of NASA Airborne and Field Investigation Data" Smith et al.

IN046-03, 16 Dec 2020, 11:30-12:30 PST "Complications of Metadata Curation for NASA Airborne and Field Campaigns, Platforms, and Instruments" Shirey et al.

IN044-03, 16 Dec 2020, 07:08-07:12 PST "Development of a Suborbital Portal with End-Users and Data Archivers in Mind" Woods et al.

Acknowledgements: This research is supported by NASA Grant NNM11AA01A as part of the Interagency Implementation and Advanced Concepts Team (IMPACT) program.

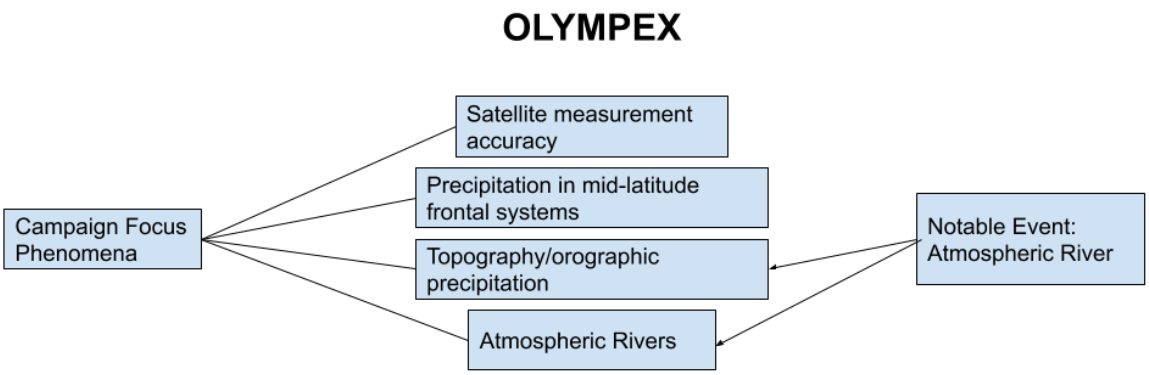


Figure 1: OLYMPEX notable event and scientific phenomena

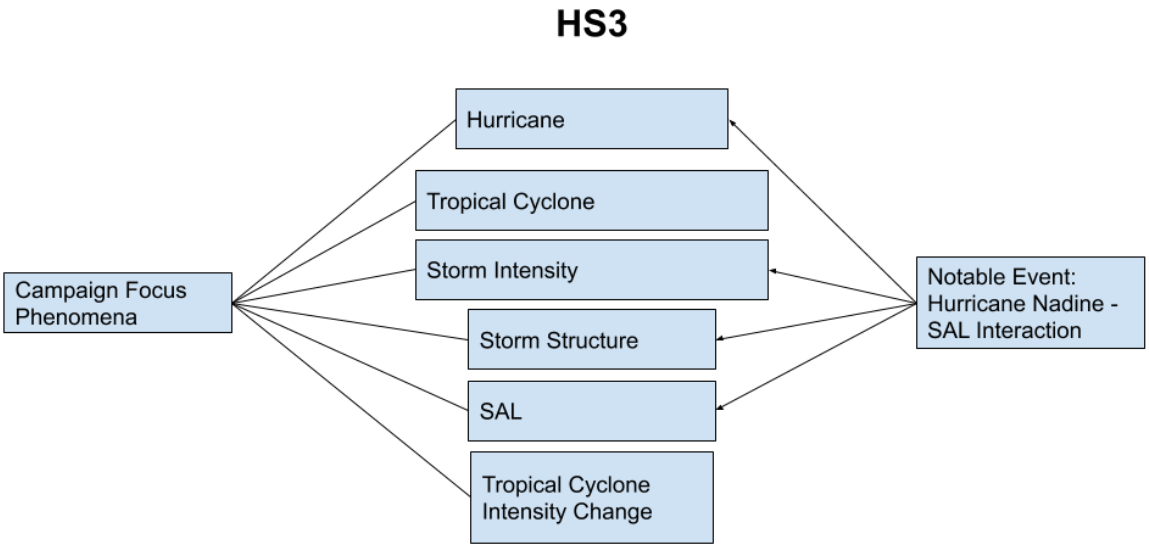


Figure 2: HS3 notable event and scientific phenomena

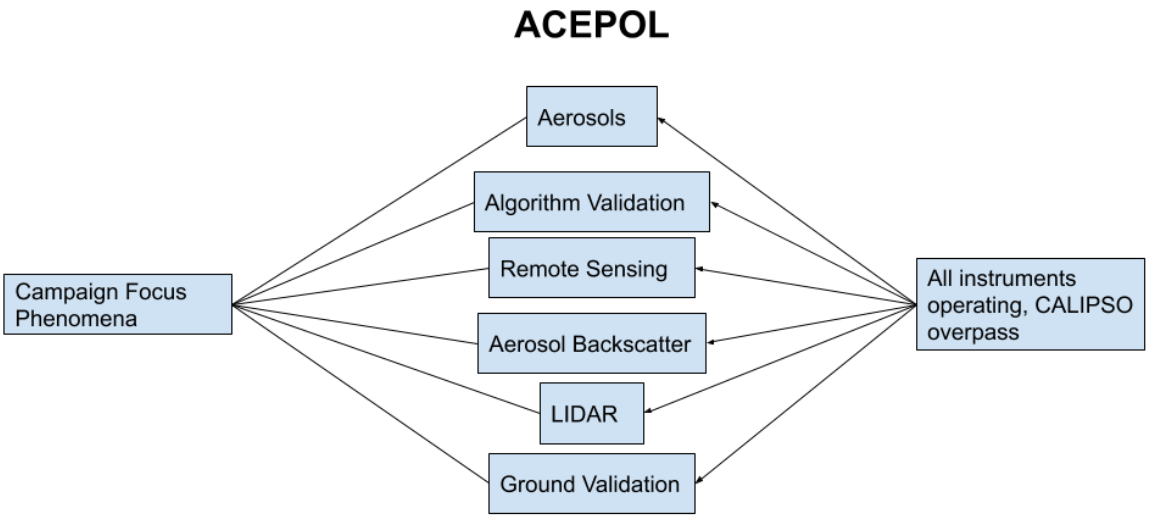


Figure 3: ACEPOL notable event and scientific phenomena

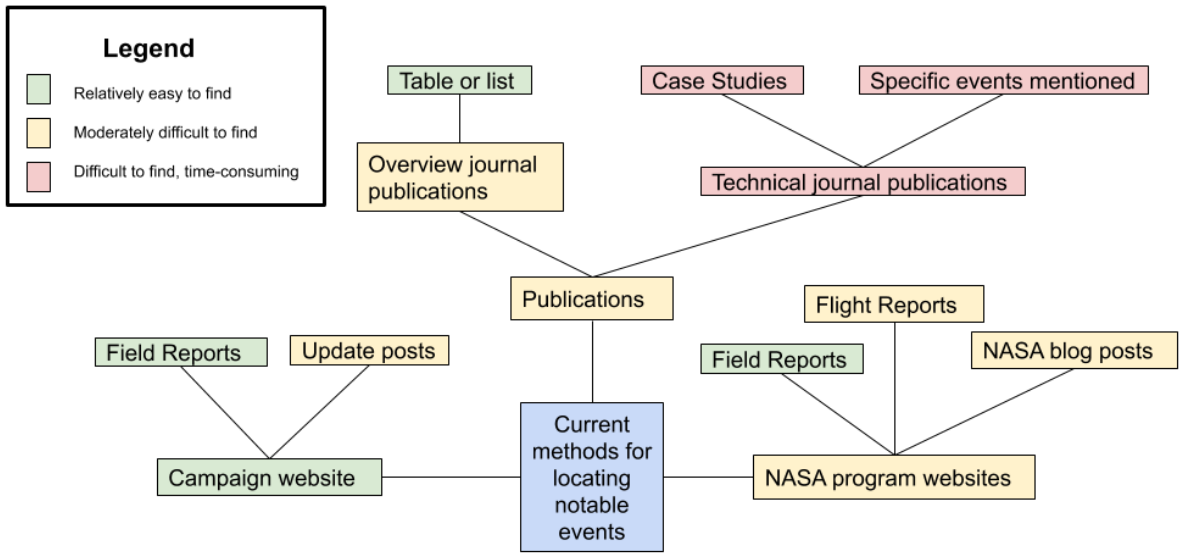


Figure 4: Different places to find notable event information. Green: relatively easy to find, Yellow: moderately difficult to find, Red: difficult to find and/or time consuming

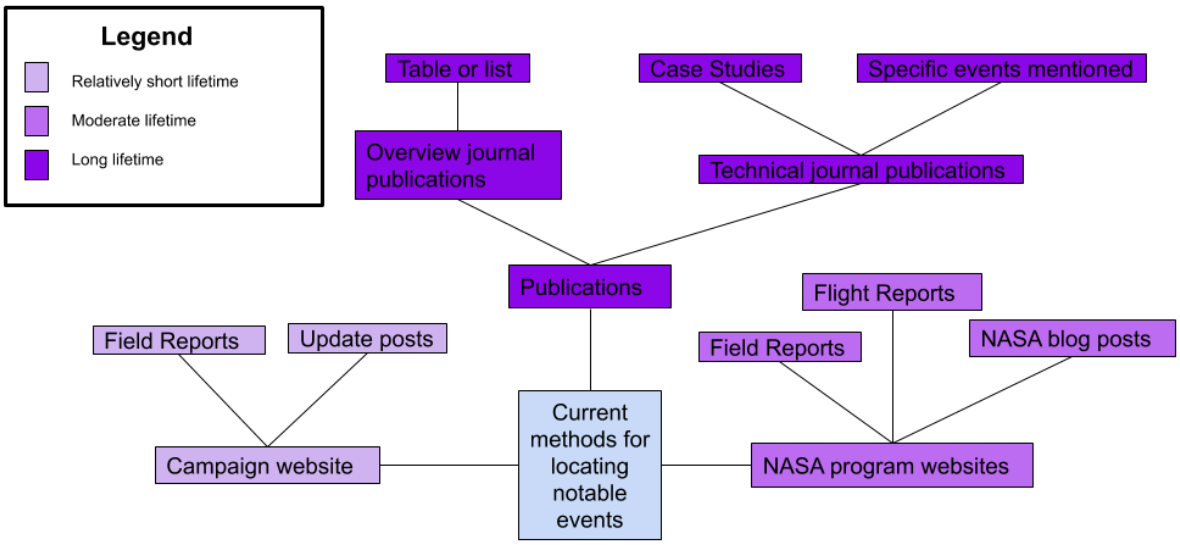


Figure 5: Same flowchart as in Figure 4, now showing the longevity of resources for locating notable events

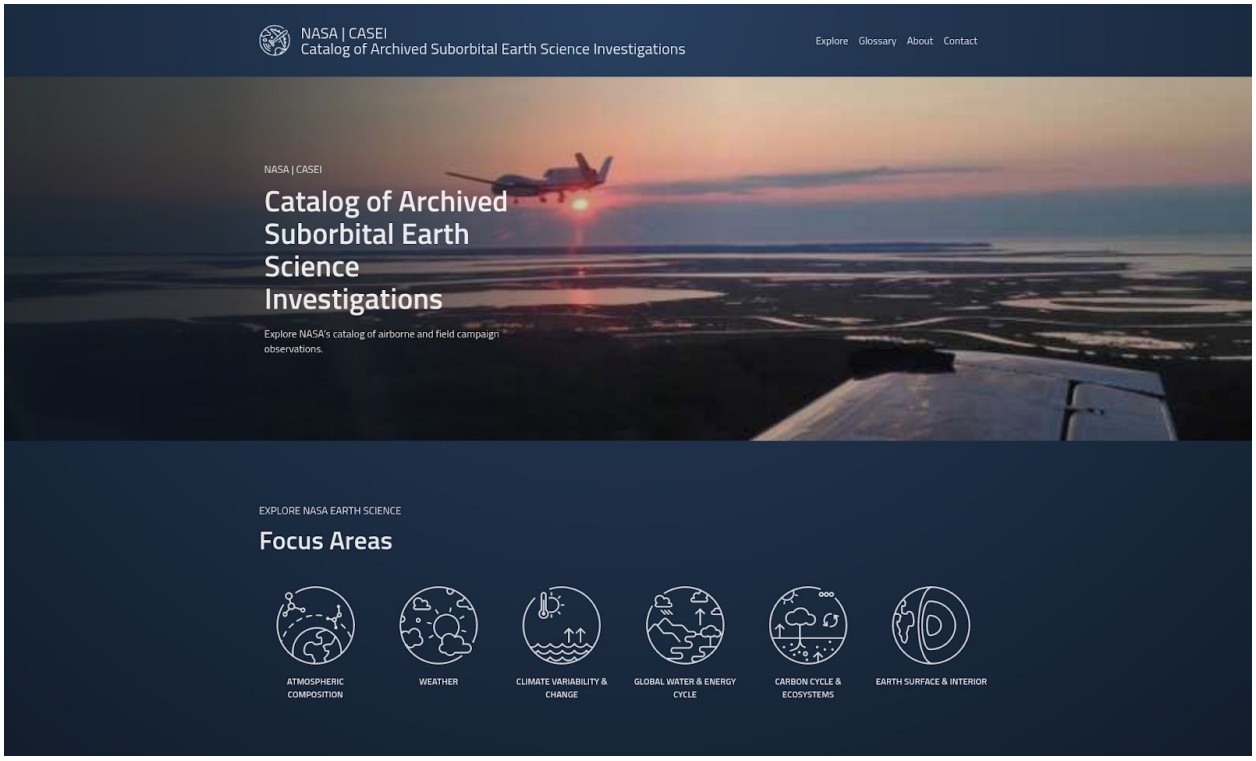


Figure 6: Homepage of CASEI

Campaign	OLYMPEX	HS3	DC3	ACEPOL
Event Date Range	12/8/2015-12/9/2015	9/11/2012-9/15/2012	5/29/2012	11/7/2017
Event Description	Atmospheric River	Hurricane Nadine - SAL interaction	Supercell/MCS in northern Oklahoma	CALIPSO overpass and ground-based instrument coordination
Campaign Location	Olympic Peninsula	Atlantic	Northern Oklahoma	California
Resource	BAMS publication	BAMS publication	BAMS publication	Earth System Science Data publication

Table 1: Table showing metadata collected by ADMG for campaigns in CASEI