



# Field Campaign Explorer

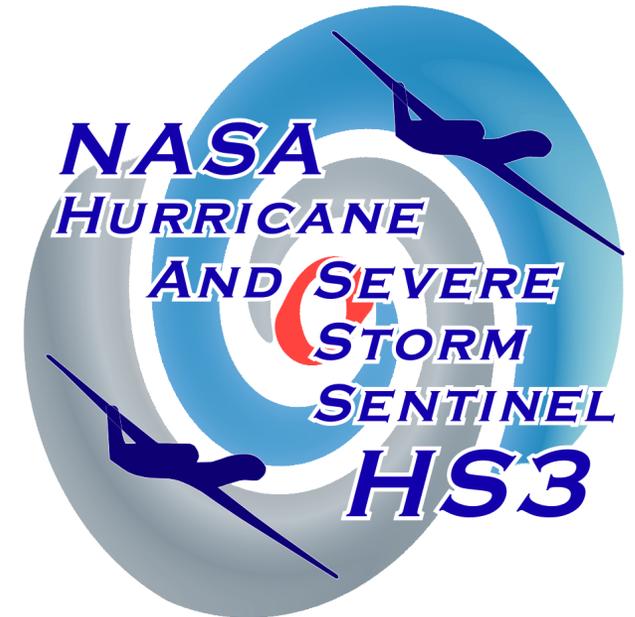
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2016 GHRC User Working Group Meeting  
Sept 20-21, 2016



## Field Campaign Explorer System (FCX)

- Constructed around Hurricane and Severe Storms Sentinel (HS3) field campaign data
- Created to reduce the effort involved in discovering field campaign data to study atmospheric events
- Caters to event-based research
  - Target “Golden Cases” where multiple instruments are available to study a physical processes
- Allows for seamless movement between data visualization, discovery and acquisition
- Leverages critical unstructured resources for event based research
  - Flight and mission reports
  - Spatial and temporal tags

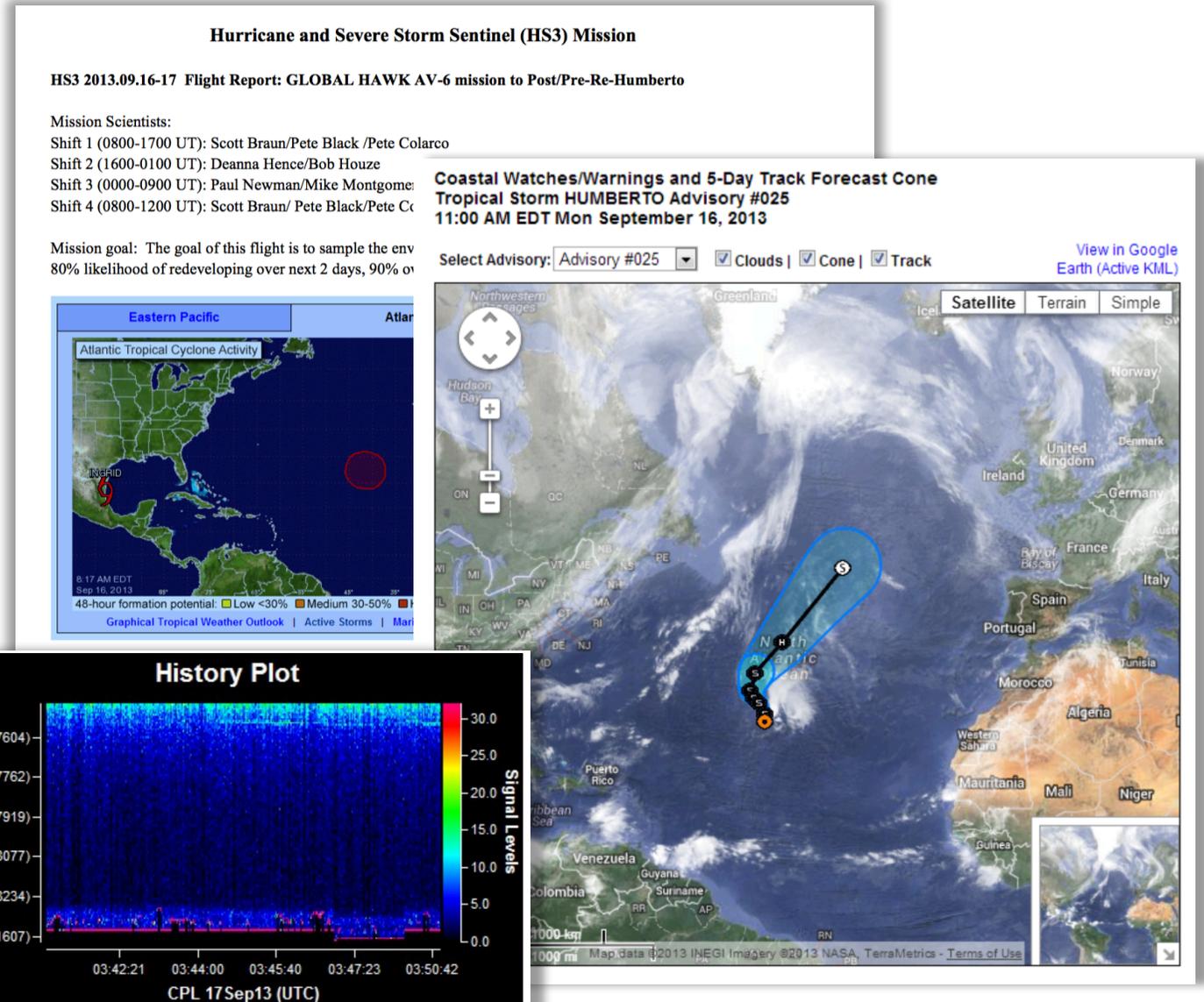


- Data Users

- HS3 science team
- NASA Hurricane Science Research Program (HSRP)
- Operational users at the NOAA National Hurricane Center
- Larger scientific community

- Current Data

- Science data – netCDF/CF
  - High-Amplitude Wind and Rain Airborne Profiler (HIWRAP)
  - Hurricane Imaging Radiometer (HIRAD) multi-frequency interferometric radiometer
  - High altitude MMIC sounding radiometer (HAMSR)
- Browse images
- Flight reports
- Flight tracks



- Analyze historical hurricane trends and parameters
- Target data and information for a particular hurricane or period of interest
- Interactive data exploration
- Re-enact mission flights – fly along the Global Hawk UAV as it collects data
- On-the-fly data visualization and subsetting using OPeNDAP
  - Reduces size of data acquired
- Data download



## Field Campaign Explorer

- Use case involving Hurricane Ingrid (2013)

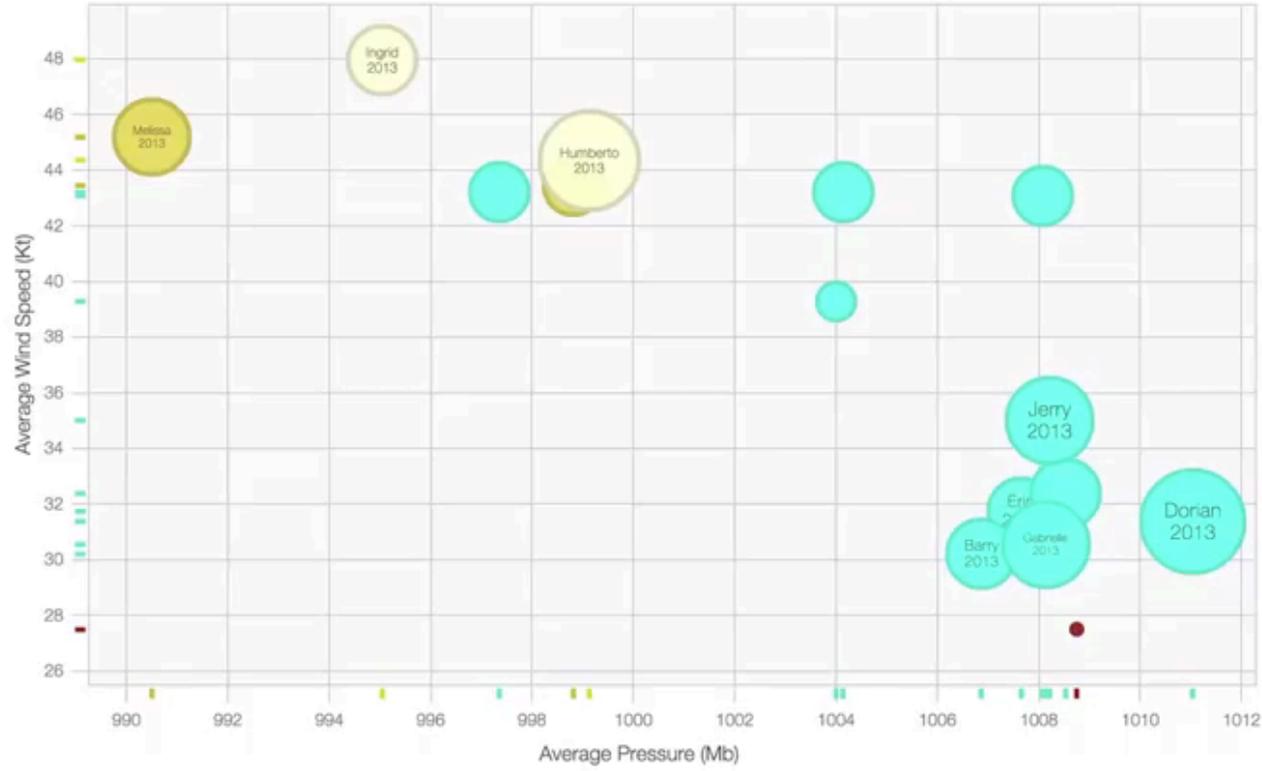


The screenshot shows the top of a web browser displaying the Field Campaign Explorer website. At the top left, there are logos for NASA and GHRC (Global Hydrology Resource Center). To the right is a hamburger menu icon. The main content area features a background image of a satellite-style map with a color-coded overlay. Overlaid on this map is the text "Field Campaign Explorer" in a large white font, followed by "A FLIGHT RE-ENACTMENT TOOL" in a smaller white font. Below this text is a central call-to-action box containing three elements: a red button with the text "LAUNCH NOW", the text "- or -" in a smaller font, and a blue button with the text "LEARN MORE". A mouse cursor is visible over the bottom right corner of the map area.

# NASA Field Campaign Information Explorer

Overview of Past Tropical Storms | Explorer

X-axis: Average Pressure (mb) | Y-axis: Average Wind Speed (kt) | Size: Storm Length (days)



- ### Instructions
- Select year at bottom
  - Select parameters for X-axis, Y-axis and circle size
  - Hover mouse over storm circle to see storm characteristics
  - Click on storm circle to visit field campaign flight information

### Legends

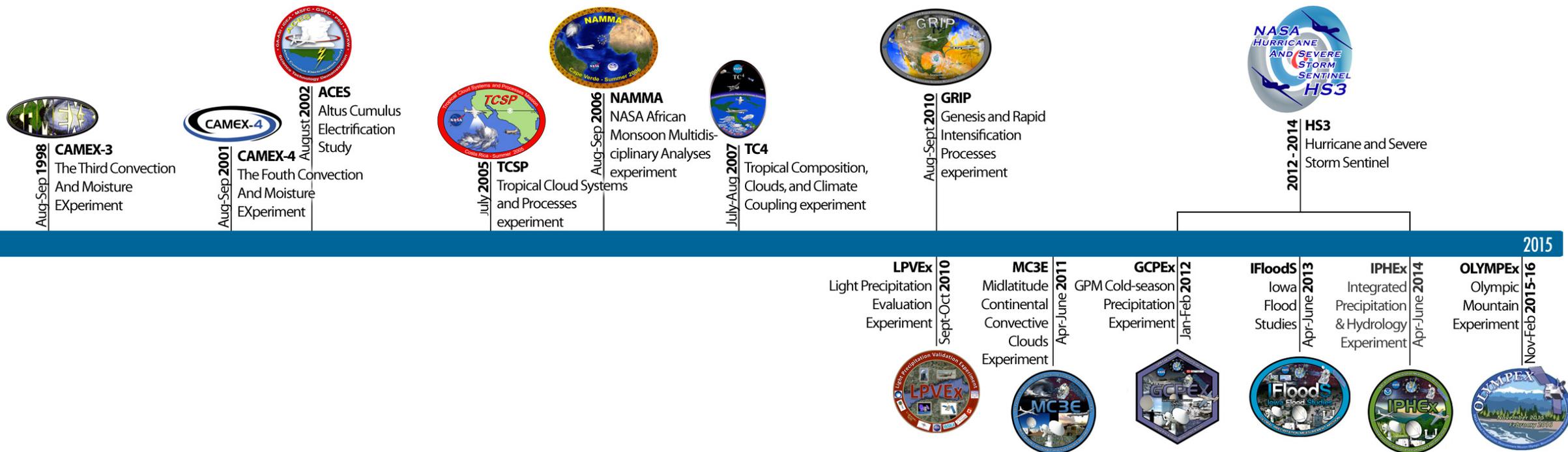
**Saffir-Simpson hurricane wind scale**

Category	Wind speeds
Five	≥70 m/s, ≥137 knots ≥157 mph, ≥252 km/h
Four	58–70 m/s, 113–136 knots 130–156 mph, 209–251 km/h
Three	50–58 m/s, 96–112 knots 111–129 mph, 178–208 km/h
Two	43–49 m/s, 83–95 knots

2011 | 2012 | 2013 | 2014

# Future Plans

- Explore the tool at: <https://ghrcdev.nsstc.nasa.gov/fc-explorer/>
- FCX will become fully operational and available to the public in **February 2017**
- Will work to transition other GHRC field campaign data collections into the system
- Enhance user experience by improving FCX usability





## Discussion

1. Does the field campaign explorer address common challenges you face in data discovery?
2. Are there any key critical challenges faced in field campaign data acquisition that this tool fails to address?
3. What recommendations do you have to make this tool more user friendly?

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