



Data User Guide

GOES-R PLT Mission Reports

Introduction

The GOES-R PLT Mission Reports dataset consists of various reports filed by the scientists during the GOES-R Post Launch Test (PLT) field campaign including flight reports, weather forecasts, mission scientist reports, and plan-of-day reports. The campaign took place from March to May of 2017 in support of post-launch L1B and L2+ product validation of the Advanced Baseline Imager (ABI) and the Geostationary Lightning Mapper (GLM). The GOES-R PLT Mission Reports dataset contains reports from March 13 through May 17, 2017 in PDF, PNG, Microsoft Excel and Word (.xlsx and .docx) format, and KMZ format for display in Google Earth.

Citation

Padula, Francis. 2020. GOES-R PLT Mission Reports [indicate subset used]. Dataset available online from the NASA Global Hydrology Resource Center DAAC, Huntsville, Alabama, U.S.A. doi: <http://dx.doi.org/10.5067/GOESRPLT/REPORTS/DATA101>

Keywords:

NASA, GHRC, NOAA, GOES-R, GOES-16, ABI, GLM, GOES-R PLT, ER-2, mission reports, flight reports, weather forecasts, mission scientist reports, plan of day reports

Campaign

The Geostationary Operational Environmental Satellites - R series (GOES-R) is a geostationary satellite program comprised of a four-satellite fleet including GOES-R, GOES-S, GOES-T, and GOES-U. The GOES-R Series Program is a collaborative development and acquisition effort between the National Oceanic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Administration (NASA) to develop, launch and operate the satellites. The first satellite in the GOES-R series, GOES-R, launched on November 19, 2016 and became GOES-16 when it reached geostationary orbit. GOES-16 replaced GOES-13 as NOAA's operational GOES-East satellite at 75.2 degrees west longitude on December 18, 2017. GOES-16 observes North and South America, as well as the Atlantic Ocean all the way to the west coast of Africa. GOES-16 provides high spatial and

temporal resolution imagery of the Earth using its Advanced Baseline Imager (ABI). GOES-16's Geostationary Lightning Mapper (GLM) is the first operational lightning mapper flown in geostationary orbit. GOES-16 also includes four other scientific instruments for monitoring space weather and the Sun. More information about the GOES-R mission can be found at the [GOES-R website](#).

The GOES-R Post Launch Test (PLT) field campaign took place between March 21 and May 17, 2017 in support of the post-launch validation of NOAA's new generation of geostationary Earth-observing instruments: ABI and GLM. The campaign was comprised of two phases: the first centered on the U.S. west coast, providing tests primarily for the ABI instrument, and the second focused on the central and eastern U.S. with tests primarily for the GLM instrument (Figure 1). The validation effort included targeted data collections by the NASA ER-2 high-altitude aircraft coordinated with ground-based and low earth-orbit referenced data from several operational and research satellite missions. Dedicated ABI 30-second mesoscale (MESO) imagery collections were conducted concurrently with the ER-2 high-altitude aircraft based sensors during each GLM mission. The GOES-R PLT field campaign provided critical reference data and new insights into the performance of NOAA's new generation of geostationary Earth-observing instrument products. More information about the GOES-R PLT field campaign is available on the [GOES-16 Field Campaign webpage](#) and the [GOES-R PLT Field Campaign Micro Article](#). More information about SURFRAD's role in GOES-R ABI product validation is described in this [GOES-R ABI Validation Planning document](#).

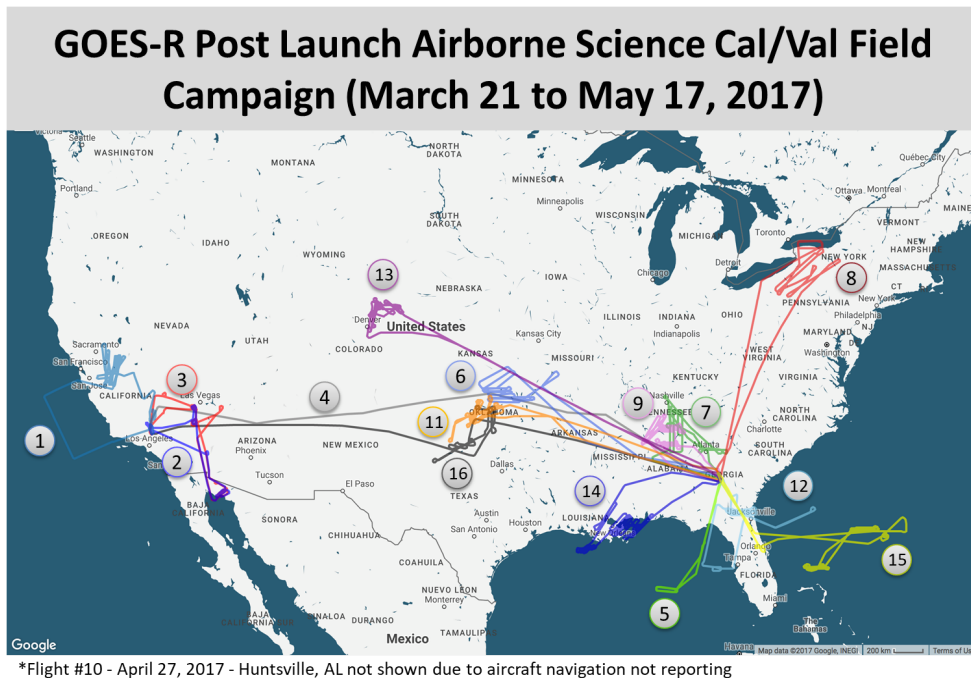


Figure 1: The GOES-R PLT Field Campaign study area (Image source: Frank Padula)

Investigators

Francis Padula
NOAA National Calibration Center | GeoThinkTank LLC
Washington D.C.

Data Characteristics

The GOES-R PLT Mission Reports dataset consists of various campaign reports in PDF, PNG, Microsoft Excel and Word (.xlsx and .docx) format, and KMZ format for display in Google Earth. Each report describes some aspect of the campaign produced at regular intervals (mostly daily or on flight days). There are flight reports, weather forecasts, mission scientist reports, and plan-of-day reports consisting of operations status and future plan summaries. These reports are considered Level 0 products. More information about the NASA data processing levels is available on the [EOSDIS Data Processing Levels webpage](#). The characteristics of this dataset are listed in Table 1 below.

Table 1: Data Characteristics

Characteristic	Description
Platform	NASA Earth Resources 2 (ER-2) aircraft
Instrument	Visual Observations
Spatial Coverage	N: 43.573 , S: 26.449, E: -72.202 , W: -124.625 (CONUS)
Temporal Coverage	March 13, 2017 - May 17, 2017
Temporal Resolution	Daily -< Weekly
Parameter	Flight reports, weather forecasts, mission scientists reports, plan of day reports
Version	1
Processing Level	0

File Naming Convention

The GOES-R PLT Mission Reports dataset files are named using the following convention:

Flight reports:

GOES-R_flight-report_YYYYMMDD.pdf

Weather forecasts:

GOES-R_wxbriefing_YYYYMMDD.pdf

GOES-R_wxbriefing_YYYYMMDD_<file number>.pdf

Mission scientist reports:

GOES-R_mission-scientist-report_YYYYMMDD.pdf

GOES-R_mission-scientist-report_YYYYMMDD_<file number>.[pdf|docx|xlsx|png]

Plan of day reports:

GOES-R_POD_YYYYMMDD_<file number>.[docx|kmz]

Table 2: File naming convention variables

Variable	Description
YYYY	Four-digit year
MM	Two-digit month
DD	Two-digit day
file number	Serial number indicating the file order when there are multiple files included for the same date
.pdf	Portable Document Format (PDF)
.docx	Microsoft Word document format
.xlsx	Microsoft Excel Spreadsheet format
.png	Portable Network Graphics (PNG) format
.kmz	Google Earth Keyhole Markup language Zipped (KMZ) format

Data Format and Parameters

The GOES-R PLT Mission Reports dataset consists of flight reports, weather forecasts, mission scientist reports, and plan-of-day reports in PDF, PNG, Microsoft Excel and Word (.xlsx and .docx) format, and KMZ format for display in Google Earth. All files contain text and images as needed to convey the information in the report. More detailed descriptions for each report type are listed below.

Flight reports

The flight reports files are stored in PDF format and contain information such as the ER-2 flight number, the instrument payload configuration, total flight time, and comments about the flight. The files also include summary information for other flights, links to other flight reports, and links to other campaign related information.

Weather forecasts

The weather forecast files are stored in PDF format and consist of slideshow presentations of mission weather and forecast briefings created for the campaign. These presentations include Storm Prediction Center (SPC) Outlooks, NWS forecasts, sounding plots, model predictions, satellite imagery, and radar imagery.

Mission scientist reports

The mission scientist report files are stored in PDF, Microsoft Excel and Word (.xlsx and .docx), and PNG formats. These files include the mission scientist reports which list mission objectives, flight duration, instrument status and updates, flight summaries, various imagery (e.g. satellite imagery, radar imagery, flight tracks), logs of mission events, and weather synopses. Specifically, the Excel (.xlsx) files contain hail, tornado, and wind reports along with additional information about each report while the PNG files contain SPC storm report images.

Plan of day reports

The plan-of-day files include pairs of Word documents (.docx) and KMZ files for each date. The Word documents contain summaries of the operations plans for each campaign day. The KMZ files can be opened and viewed using Google Earth. These files will display bounding boxes for the geographical areas where operations were planned for the indicated day.

Software

No special software is needed to read these reports.

Known Issues or Missing Data

There are no known issues with these data or any known gaps in the dataset. Since the ER-2 did not operate everyday during the campaign, there are some dates when there is no report information available for a particular subject.

References

GHRC. 2020. GOES-R Post Launch Test (PLT).

https://ghrc.nsstc.nasa.gov/home/field-campaigns/goes-r_plt

Seybold, M., Daniels, J., Grigsby, E., Pages, R., & Valenti, J. 2016. Geostationary Operational Environmental Satellite (GOES) - R Series: ABI L2+ Surface Downward Shortwave Radiation and Top-of-Atmosphere Reflected Shortwave Radiation (DSR-RSR) Beta, Provisional and Full Validation Readiness, Implementation and Management Plan (RIMP).

https://www.goes-r.gov/products/RIMPs/RIMP_ABI-L2_DSR-RSR_v1.0.pdf

Related Data

All data collected during GOES-R PLT are considered related. These data can be located using the GHRC [HyDRO2.0](#) search tool and entering the term 'GOES-R PLT' in the search box.

Contact Information

To order these data or for further information, please contact:

NASA Global Hydrology Resource Center DAAC

User Services

320 Sparkman Drive

Huntsville, AL 35805

Phone: 256-961-7932

E-mail: support-ghrc@earthdata.nasa.gov

Web: <https://ghrc.nsstc.nasa.gov/>