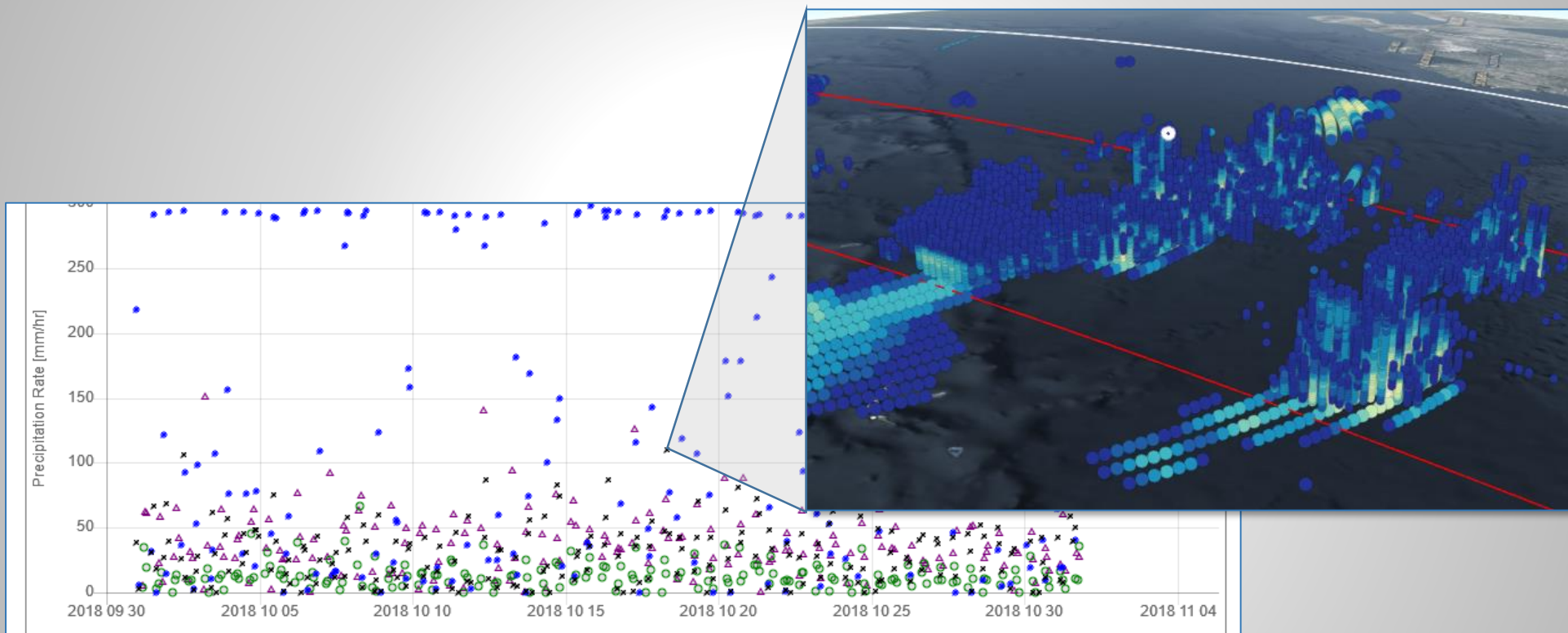


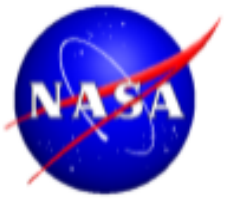


Integrating Complementary Visualizations Within a Data Order Interface



January 9, 2019

***Matt Lammers (matthew.r.lammers@nasa.gov)
Senior Science Data Visualization Analyst & Software Engineer
NASA Goddard Space Flight Center / KBRwyle***



STORM

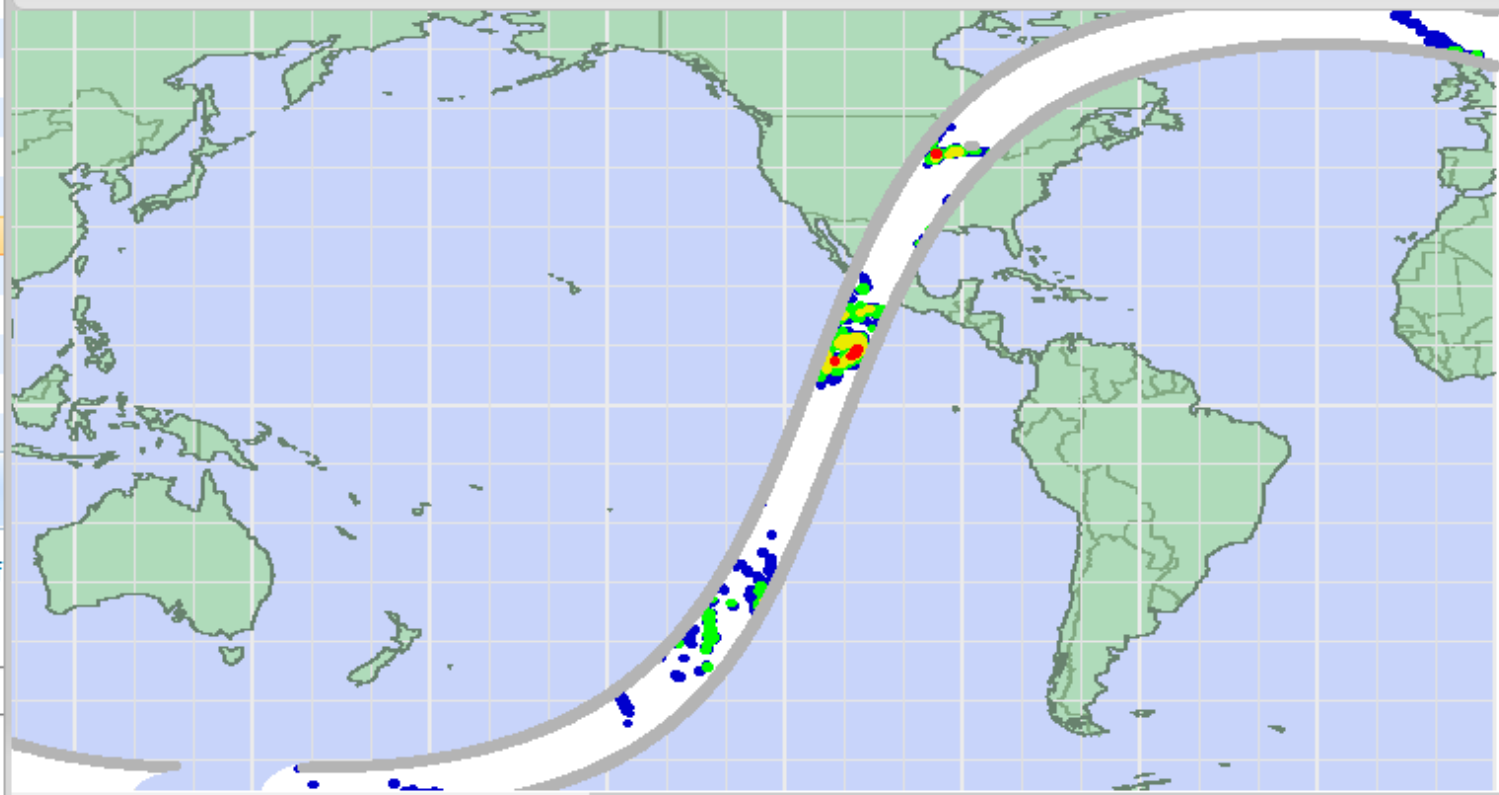
storm.pps.eosdis.nasa.gov



Left click on the header to sort columns. Right click to view additional info (file name, satellite, instrument, format and version).

Select	Data Type ^	Algorithm	Download / View	Start Time	Stop Time	Orbit #	Format
<input type="checkbox"/>							
<input type="checkbox"/>	2A	2AGPROFG		2018-09-30 22:49:26	2018-10-01 00:22:00	26078	hdf5
<input type="checkbox"/>	2A	2AGPROFG		2018-10-01 00:22:01	2018-10-01 01:54:35	26079	hdf5
<input type="checkbox"/>	2A	2AGPROFG		2018-10-01 01:54:36	2018-10-01 03:27:10	26080	hdf5
<input type="checkbox"/>	2A	2AGPROFG					
<input type="checkbox"/>	2A	2AGPROFG					
<input checked="" type="checkbox"/>	2A	2AGPROFG					
<input type="checkbox"/>	2A	2AGPROFG					
<input checked="" type="checkbox"/>	2A	2AGPROFG					
<input type="checkbox"/>	2A	2AGPROFG					
<input type="checkbox"/>	2A	2AGPROFG					
<input checked="" type="checkbox"/>	2A	2AGPROFG					
<input type="checkbox"/>	2A	2AGPROFG					
<input type="checkbox"/>	2A	2AGPROFG					
<input type="checkbox"/>	2A	2AGPROFG					
<input type="checkbox"/>	2A	2AGPROFG					
<input type="checkbox"/>	2A	2AGPROFG					

View Browse File for granule 2A.GPM.GMI.GPROF2017v1.20181001-S141517-E154751.026...

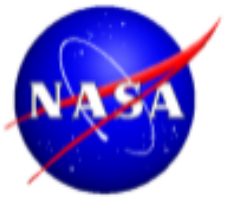


Total Granules selected: 3

1 2 — Records from 1 to 16 of

Script Type

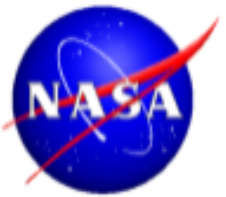
Select a script type to help access data



Why Swath-Based Analysis Tool?



- **Users wanted to explore Level 2 swath products**
 - **Goddard Profiling Algorithm (GPROF)**
 - **TMI, GMI, AMSR2, ATMS, MHS, AMSRE, AMSUB, SSMI/S**
 - **Precipitation Radars**
 - **TRMM PR, GPM DPR**
 - **Combined Algorithm**
 - **TRMM Combined, GPM Combined**
- **Initially envisioned as a chart tool displaying statistics gathered from geographic regions of swaths**
- **Evolved to include connections to THOROnline and STORM Virtual Globe, as well as ordering capabilities**



storm.pps.eosdis.nasa.gov/ storm/Analysis.jsp



Instrument
Select

NASA National Aeronautics and Space Administration

PPS Contacts
+ Related Links

STORM Swath-Based Analysis Tool

This tool enables comparisons between domain-aggregated values from different GPM and Partner Instruments. Select one or more instruments, a date range, and a geographic domain. The tool will display statistical values on an interactive graph, with the ability to change what statistics, what instruments, and what colors are displayed. All values are aggregated from swath pixels within the geographic domain selected.

Available Instruments:
Click to select one. Hold CTRL and click to select multiple.

<input type="checkbox"/> GPM-GMI	<input type="checkbox"/> GPM-DPR	<input type="checkbox"/> GPM-Ka MS	<input type="checkbox"/> GPM-Ku
<input type="checkbox"/> GPM-CMB	<input type="checkbox"/> TRMM-TMI	<input type="checkbox"/> TRMM-PR	<input type="checkbox"/> NPP-ATMS
<input type="checkbox"/> GCOMW1-AMSR2	<input type="checkbox"/> NOAA15-AMSUB	<input type="checkbox"/> NOAA16-AMSUB	<input type="checkbox"/> NOAA17-AMSUB
<input type="checkbox"/> NOAA18-MHS	<input type="checkbox"/> NOAA19-MHS	<input type="checkbox"/> NOAA20-ATMS	<input type="checkbox"/> METOPA-MHS
<input type="checkbox"/> METOPB-MHS	<input type="checkbox"/> F11-SSMI	<input type="checkbox"/> F13-SSMI	<input type="checkbox"/> F14-SSMI
<input type="checkbox"/> F15-SSMI	<input type="checkbox"/> F17-SSMIS	<input type="checkbox"/> F18-SSMIS	<input type="checkbox"/> F19-SSMIS
<input type="checkbox"/> AQUA-AMSRE			

Date Range:
Valid Range is between 19971201 and 20181027 (Loading the chart takes approximately 5-10 minutes for one year and one instrument)
YYYYMMDD [HH:MM]
Start DateTime
Stop DateTime

Geographic Domain:
Use the buttons on the top-left to select a geographic area, or type the box into the inputs below.

Lat Lng:

Northern Latitude Southern Latitude
Eastern Longitude Western Longitude

News

10/24/2018 - PPS has begun processing SSMI Level 1C Version 06A today, October 24. This will only be processed up to Level 1C. It applies to all six SSMI instruments going back to July 1987. For more details click this link.

10/03/2018 - PPS will begin processing and reprocessing GPM Level 2-3 DPR and Combined data as Version V06A. The switch for these products will begin with October 1, 2018 data. This will be available to the public after October 4, 2018 at the earliest once reviewed and approved by the Science Team.

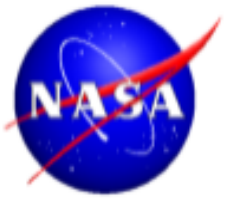
09/04/2018 - NOAA20 (previously known as JPSS-1) ATMS Level 1-3 products will become available today, Tuesday, September 4. The data range begins with November 29, 2017 and will be processed to the current date. The entire data set will be available over the next couple of weeks.

06/29/2018 - TRMM PR L2-L3 reprocessing is expected to begin in early July. Please note that these Version 06A files will be in HDF5 format and will supersede existing TRMM Version 7 products such as 2A21, 2A23, 2A25, and 3A25. The caveat document for these

[PyDev] [ppso@s... [Terminal] [~/PyDev... [willa.split...

Geographic
Select

Date/Time
Range Select



storm.pps.eosdis.nasa.gov/ storm/Analysis.jsp



National Aeronautics
and Space Administration

+ PPS Contacts
+ Related Links

- HOME
+ DATA ACCESS
+ TOOLS
+ PRODUCT INFORMATION
+ REGISTRATION

Home

Need Help?

- STORM User Guide
- Help Desk

News

10/30/2018 - TRMM L2-L3 Combined V06 reprocessing is expected to start later this week. Files will appear starting from December 1997 and working forward.

10/24/2018 - PPS has begun processing SSM/I Level 1C Version 06A today, October 24. This will only be processed up to Level 1C. It applies to all six SSM/I instruments going back to July 1987. For more details click this link.

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STORM Swath-Based Analysis Tool

This tool enables comparisons between domain-aggregated values from different GPM and Partner Instruments. Select one or more instruments, a date range, and a geographic domain. The tool will display statistical values on an interactive graph, with the ability to change what statistics, what instruments, and what colors are displayed. All values are aggregated from swath pixels within the geographic domain selected.

Available Instruments:
Click to select one. Hold CTRL and click to select multiple.

GPM-GMI	GPM-DPR	GPM-Ka MS	GPM-Ku
GPM-CMB	TRMM-TMI	TRMM-PR	NPP-ATMS
GCOMW1-AMSR2	NOAA15-AMSUB	NOAA16-AMSUB	NOAA17-AMSUB
NOAA18-MHS	NOAA19-MHS	NOAA20-ATMS	METOPA-MHS
METOPB-MHS	F11-SSMI	F13-SSMI	F14-SSMI
F15-SSMI	F17-SSMIS	F18-SSMIS	F19-SSMIS
AQUA-AMSRE			

Date Range:
Valid Range is between 19971201 and 20181216 (Loading the chart takes approximately 5-10 minutes for one year and one instrument)
YYYYMMDD [HH:MM]

Start Date/Time:

Stop Date/Time:

Geographic Domain:
Use the buttons on the top-left to select a geographic area, or type the box into the inputs below.

Lat Lng:

Leaflet | Sources: Esri, HERE, DeLorme, INCREMENT P, NPS, NRCAN, Ordnance Survey, AID, OpenStreetMap contributors, USGS, NGA, NASA, CIGAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatasysteisen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community.

Northern Latitude: Southern Latitude:

Eastern Longitude: Western Longitude:



Visualization Tool 1: The Chart



Click the button to "Get Granules For Chart"

Time remaining updates

Get Granules for Chart

Chart

Points Loaded: 1330 of 2623

Estimated Time Remaining: 9 minutes, 49 seconds

Resume Data Load

GPM.GMI 37.033 to 37.001 latitude, -114.723 to -109.076 longitude

Mean Precipitation Rate [mm/hr]

All Statistics are for Surface Precipitation Rate

Export All Data to CSV Export Chart Data to CSV Export Chart to PNG

Click Points for Prompt to View Granule in STORM Virtual Globe

Chart Variables:

Mean Conditional Mean Median Maximum Standard Deviation Percent of Pixels with Precipitation

Total Swath Pixels in Domain

Chart Instruments:

GPM.GMI GPM.DPR NOAA20.ATMS GCOMW1.AMSR2

Chart Color and Point Style:

Red - + Black - x Blue - * Green - o Purple - Δ Grey - □

Submit Order Based on Criteria:

Registered Email: Don't have a PPS Registered Email? [Register Here!](#)

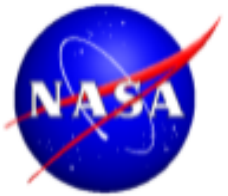
Order All Granules With: Mean Greater Than

Submit Order

*All granules will be geographically subset to the scans within the specified domain

Click to pause Data Load

First Data Points have loaded for single instrument



Visualization Tool 1: The Chart



Get Granules for Chart

Chart

Points Loaded: 1330 of 2623 Estimated Time Remaining: 9 minutes, 49 seconds [Resume Data Load](#)

GPM.GMI/GPM.DPR/NOAA20.ATMS/GCOMW1.AMSR2 : 31.333 to 37.001 latitude, -114.723 to -109.076 longitude

GPM.GMI Mean Precipitation Rate [mm/hr]
 GPM.DPR Mean Precipitation Rate [mm/hr]
 NOAA20.ATMS Mean Precipitation Rate [mm/hr]
 GCOMW1.AMSR2 Mean Precipitation Rate [mm/hr]

All Statistics are for Surface Precipitation Rate [Export All Data to CSV](#) [Export Chart Data to CSV](#) [Export Chart to PNG](#)

[Click Points for Prompt to View Granule in STORM Virtual Globe](#)

Chart Variables:

Chart Instruments:

Chart Color and Point Style:

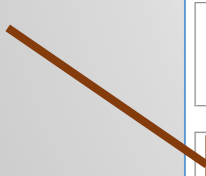
Submit Order Based on Criteria:

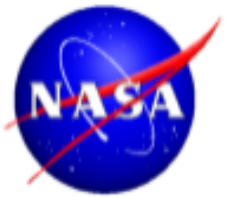
Registered Email: Don't have a PPS Registered Email? [Register Here!](#)

Order All Granules With:

*All granules will be geographically subset to the scans within the specified domain

Add more Instruments to the chart





Visualization Tool 1: The Chart



Get Granules for Chart

Chart

Points Loaded: 1330 of 2623 Estimated Time Remaining: 9 minutes, 49 seconds [Resume Data Load](#)

GPM.GMI/GPM.DPR/NOAA20.ATMS/GCOMW1.AMSR2 : 31.333 to 37.001 latitude, -114.723 to -109.076 longitude

GPM.GMI Maximum Precipitation Rate [mm/hr] GPM.DPR Maximum Precipitation Rate [mm/hr]
 NOAA20.ATMS Maximum Precipitation Rate [mm/hr] GCOMW1.AMSR2 Maximum Precipitation Rate [mm/hr]

All Statistics are for Surface Precipitation Rate [Export All Data to CSV](#) [Export Chart Data to CSV](#) [Export Chart to PNG](#)

[Click Points for Prompt to View Granule in STORM Virtual Globe](#)

Chart Variables:

Chart Instruments:

Chart Color and Point Style:

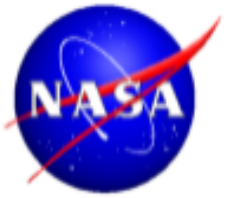
Submit Order Based on Criteria:

Registered Email: Don't have a PPS Registered Email? [Register Here!](#)

Order All Granules With:

**All granules will be geographically subset to the scans within the specified domain*

Choose between variables, which automatically updates the chart



Visualization Tool 1: The Chart



Get Granules for Chart

Chart

Points Loaded: 2623 of 2623 Estimated Time Remaining: minutes, seconds [Pause Data Load](#)

GPM.GMI/GPM.DPR/NOAA20.ATMS/GCOMW1.AMSR2 : 31.333 to 37.001 latitude, -114.723 to -109.076 longitude

All Statistics are for Surface Precipitation Rate [Export All Data to CSV](#) [Export Chart Data to CSV](#) [Export Chart to PNG](#)

[Click Points for Prompt to View Granule in STORM Virtual Globe](#)

Chart Variables:

Mean Conditional Mean Median **Maximum** Standard Deviation Percent of Pixels with Precipitation

Total Swath Pixels in Domain

Chart Instruments:

GPM.GMI **GPM.DPR** **NOAA20.ATMS** **GCOMW1.AMSR2**

Chart Color and Point Style:

Red - + Black - x Blue - * Green - o Purple - Δ Grey - □

Submit Order Based on Criteria:

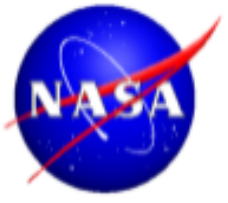
Registered Email: Don't have a PPS Registered Email? [Register Here!](#)

Order All Granules With: Mean Greater Than

[Submit Order](#)

*All granules will be geographically subset to the scans within the specified domain

Unpausing, we see the summer monsoon season in a spike in maximum rates



Visualization Tool 1: The Chart



Get Granules for Chart

Chart

Points Loaded: 2623 of 2623 Estimated Time Remaining: minutes, seconds **Pause Data Load**

GPM.GMI : 31.333 to 37.001 latitude, -114.723 to -109.076 longitude

Legend: + Percent of Pixels with Precipitation x Number of Pixels in the Domain

All Statistics are for Surface Precipitation Rate **Export All Data to CSV** **Export Chart Data to CSV** **Export Chart to PNG**

[Click Points for Prompt to View Granule in STORM Virtual Globe](#)

Chart Variables:

Mean Conditional Mean Median Maximum Standard Deviation **Percent of Pixels with Precipitation**

Total Swath Pixels in Domain

Chart Instruments:

GPM.GMI GPM.DPR NOAA20.ATMS GCOMW1.AMSR2

Chart Color and Point Style:

Red - + Black - x Blue - * Green - o Purple - Δ Grey - □

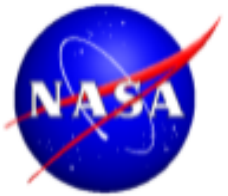
Submit Order Based on Criteria:

Registered Email: Don't have a PPS Registered Email? [Register Here!](#)

Order All Granules With: Mean Greater Than

*All granules will be geographically subset to the scans within the specified domain

Focusing on a single instrument, GMI, we can now display multiple variables simultaneously



Visualization Tool 1: The Chart



Get Granules for Chart

Chart

Points Loaded: 2623 of 2623 Estimated Time Remaining: minutes, seconds **Pause Data Load**

GPM.GMI : 31.333 to 37.001 latitude, -114.723 to -109.076 longitude

Percent [%] Count

Percent of Pixels with Precipitation Number of Pixels in the Domain

2018-09-19 18:54:58
GPM.GMI Percent of Pixels with Precipitation: 48.45
GPM.GMI Number of Pixels in the Domain: 3387

All Statistics are for Surface Precipitation Rate **Export All Data to CSV** **Export Chart Data to CSV** **Export Chart to PNG**

[Click Points for Prompt to View Granule in STORM Virtual Globe](#)

Chart Variables:

Mean Conditional Mean Median Maximum Standard Deviation **Percent of Pixels with Precipitation**

Total Swath Pixels in Domain

Chart Instruments:

GPM.GMI GPM.DPR NOAA20.ATMS GCOMW1.AMSR2

Chart Color and Point Style:

Red - + Black - x Blue - * Green - o Purple - Δ Grey - □

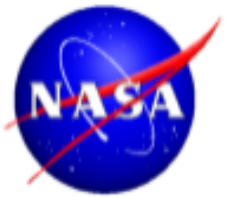
Submit Order Based on Criteria:

Registered Email: Don't have a PPS Registered Email? [Register Here!](#)

Order All Granules With: Mean Greater Than

***All granules will be geographically subset to the scans within the specified domain**

You can mouse over the points in the chart to see the raw values.



Visualization Tool 2: THOROnline



The screenshot displays the THOROnline interface in Mozilla Firefox. On the left, a 'Data' panel lists various variables, with 'surfacePrecipitation' selected. The main window shows a map of precipitation over Arizona and New Mexico, with a color scale from 0 to 48.3962 mm/hr. Below the map is a world map and a status bar indicating the server is up and the file path: gpm.2AGPROFGMI File: 2A.GPM.GMI.GPROF2017v1.20180919-S182250-E195522.025904.V05A.HDF5.

On the right, a chart titled 'Estimated Time Remaining: minutes, seconds' shows 'Percent of Pixels with Precipitation' (red dots) and 'Number of Pixels in the Domain' (grey crosses) over time from 2018-03-02 to 2018-12-01. A green circle highlights a specific data point on the chart.

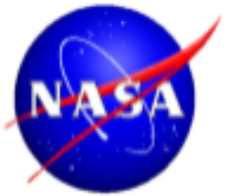
A pop-up window titled 'Things You Can Do With The Granule' is overlaid on the chart. It contains the following text: 'Here you have the option to either download the granule, view it in THOROnline, or view it in STORM Virtual Globe. Click one of these buttons (or "x" in the top corner to not do anything).'. The window includes buttons for 'Download the Granule (Registration Required)', 'Open THOROnline', and 'Open STORM VG'. Below the pop-up, there are sections for 'Chart Instruments' (GPM.GMI, GPM.DPR), 'Chart Color and Point Style' (Red - x, Blue - *, Green - o, Purple - Δ, Grey - □), and 'Submit Order Based on Criteria' (Registered Email, Don't have a PPS Registered Email? Register Here!, Order All Granules With: Mean, Greater Than, Submit Order).

At the bottom left of the interface, there is a news section with the following text: 'SSM/I, AMSUB, and AMSRE, as well as all previously-available instruments. 02/13/2018 - We are beginning to roll out Level 2A PRPS files for the SAPHIR instrument. It is possible to request PRPS files in BUFR format and it is Geographically Subsettable. We are also reprocessing Level 2A GPROF for the TRMM era for AMSRE, SSM/I, and AMSUB. This will continue until all datasets are complete. 01/29/2018 - The new STORM User Guide (Version 2.4) is now available. It contains a full guide to using the Swath-Based Analysis Tool to gather statistics about

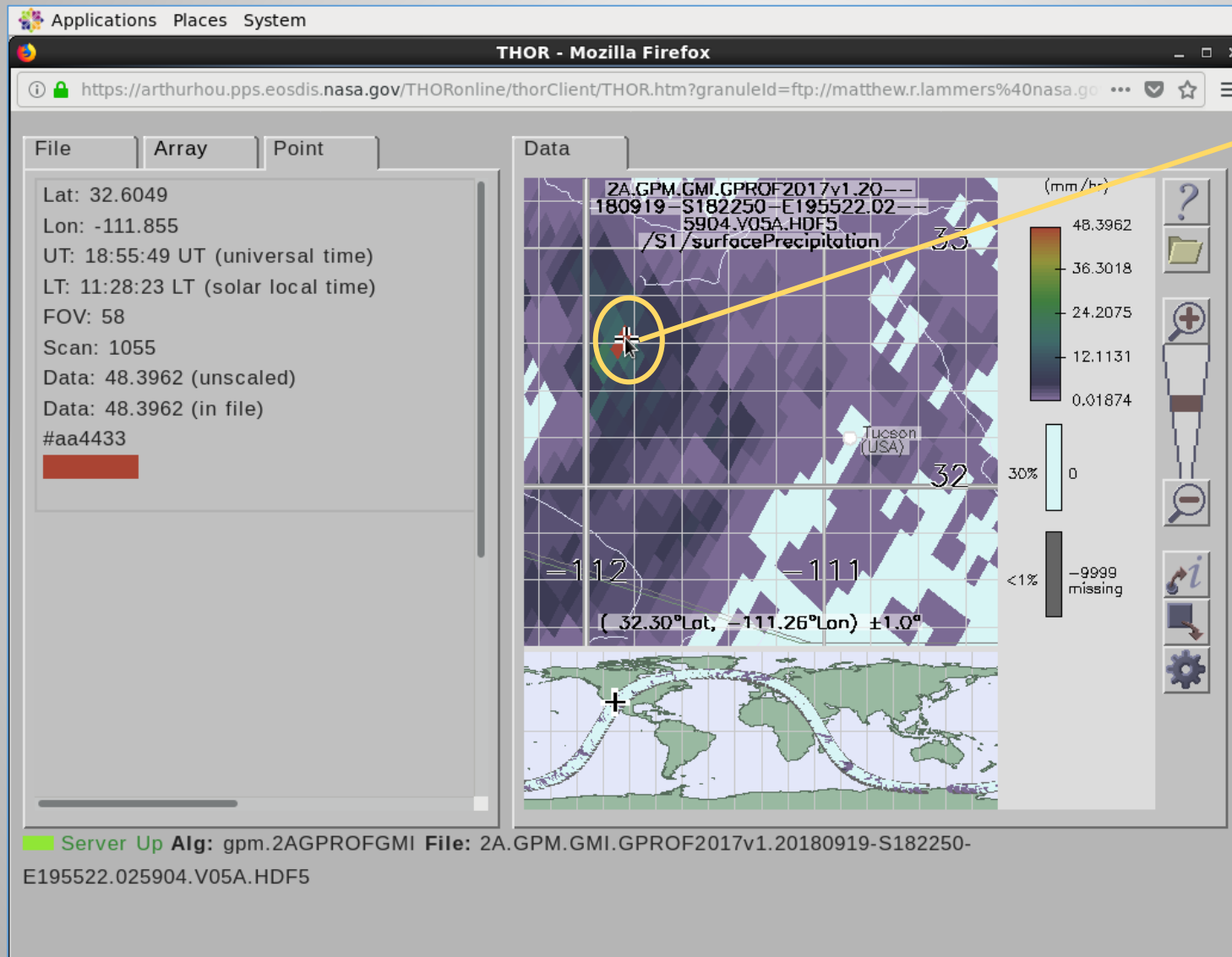
Clicking on this point pops up the "Things You Can Do With The Granule" box

These options include downloading the file, or visualizing it with two tools

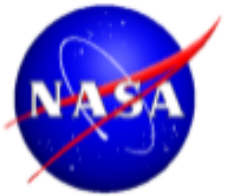
Here we have the THOROnline Window, where users explore all the variables in the file.



Visualization Tool 2: THOROnline



When we see a pixel of interest, we can use THOROnline to discover its actual value



Visualization Tool 3: STORM Virtual Globe



Get Granules for Chart

Chart

Points Loaded: 2623 of 2623 Estimated Time Remaining: minutes, seconds [Pause Data Load](#)

GPM.GMI/GPM.DPR : 31.333 to 37.001 latitude, -114.723 to -109.076 longitude

GPM.GMI Maximum Precipitation Rate [mm/hr]
 GPM.DPR Maximum Precipitation Rate [mm/hr]

2018-08-21 13:20:55
GPM.GMI Maximum Precipitation Rate [mm/hr]: 35.63

All Statistics are for Surface Precipitation Rate [Export All Data to CSV](#) [Export Chart Data to CSV](#) [Export Chart to PNG](#)

[Click Points for Prompt to View Granule in STORM Virtual Globe](#)

Chart Variables:

Chart Instruments:

Chart Color and Point Style:

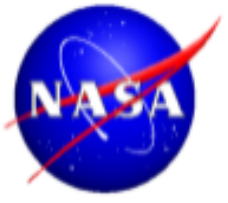
Submit Order Based on Criteria:

Registered Email: Don't have a PPS Registered Email? [Register Here!](#)

Order All Granules With:

*All granules will be geographically subset to the scans within the specified domain

You can mouse over the points in the chart to see the raw values.



Visualization Tool 3: STORM Virtual Globe



-STORM Home

NASA National Aeronautics and Space Administration

STORM Virtual Globe

GPM-GMI GPROF
2018-08-21 1223-1355UTC
Minute Range: 50-65

0 92

Hide Radar Hide GPROF

Show Lat/Lon Grid

1 mm/hr 14375 meters

Color	Scale	Range
Yellow	All values in mm/hr	>34.0
Light Green		21.0-34.0
Green		13.0-21.0
Light Blue		8.0-13.0
Blue		5.0-8.0
Dark Blue		3.0-5.0
Very Dark Blue		2.0-3.0
Black		1.0-2.0

Close

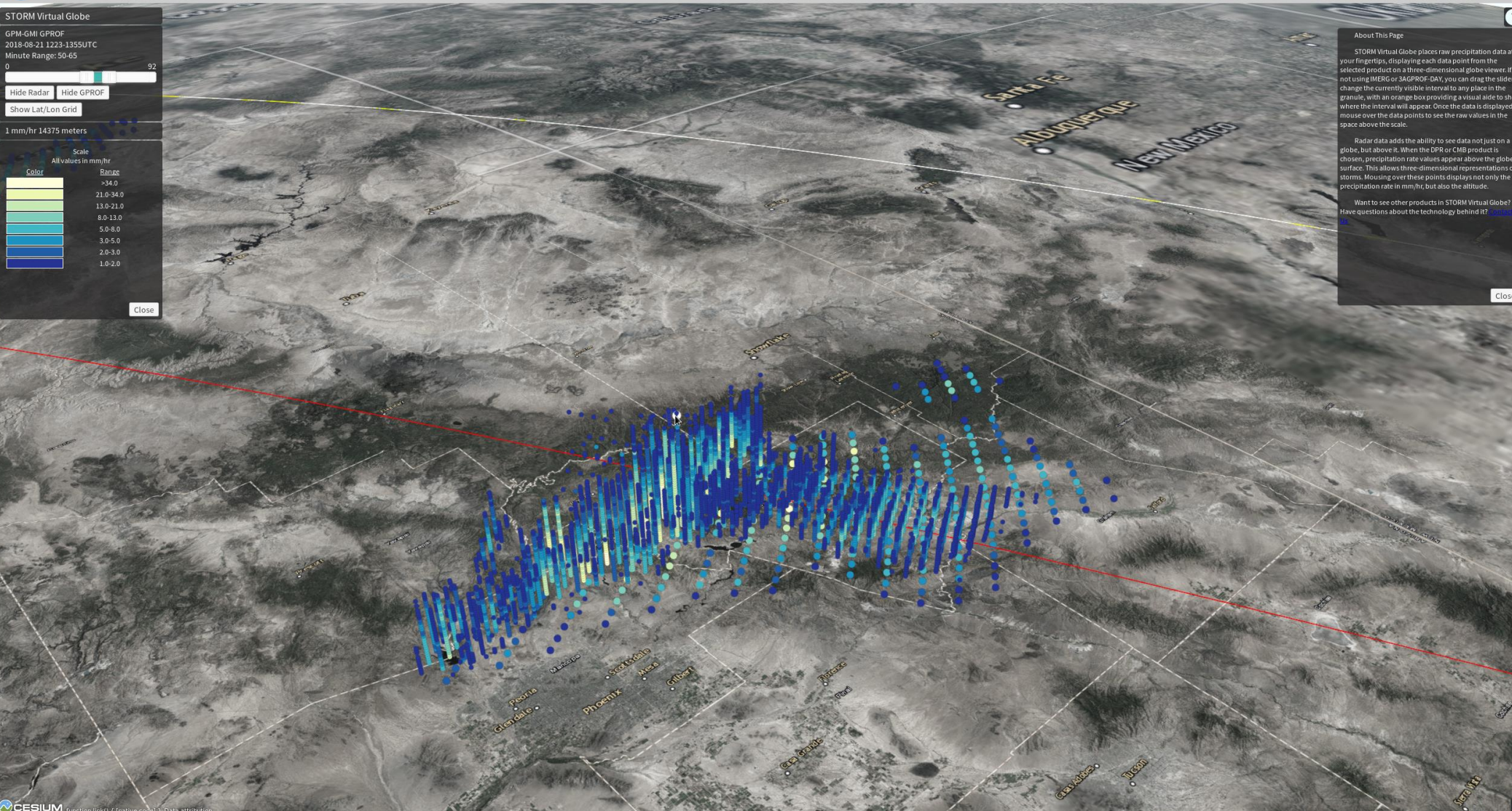
About This Page

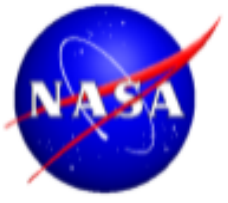
STORM Virtual Globe places raw precipitation data at your fingertips, displaying each data point from the selected product on a three-dimensional globe view. If not using IMERG or 3AGPROF-DAY, you can drag the slider to change the currently visible interval to any place in the granule, with an orange box providing a visual aide to show where the interval will appear. Once the data is displayed, mouse over the data points to see the raw values in the space above the scale.

Radar data adds the ability to see data not just on a globe, but above it. When the DPR or CMB product is chosen, precipitation rate values appear above the globe's surface. This allows three-dimensional representations of storms. Mousing over these points displays not only the precipitation rate in mm/hr, but also the altitude.

Want to see other products in STORM Virtual Globe? Have questions about the technology behind it? [Click here](#)

Close





Visualization Tool 3: STORM Virtual Globe



- STORM Home

NASA National Aeronautics and Space Administration

STORM Virtual Globe

GPM-GMI GPROF
2018-08-21 1223:135UTC
Minute Range: 50-65

0 92

Hide Radar Hide GPROF

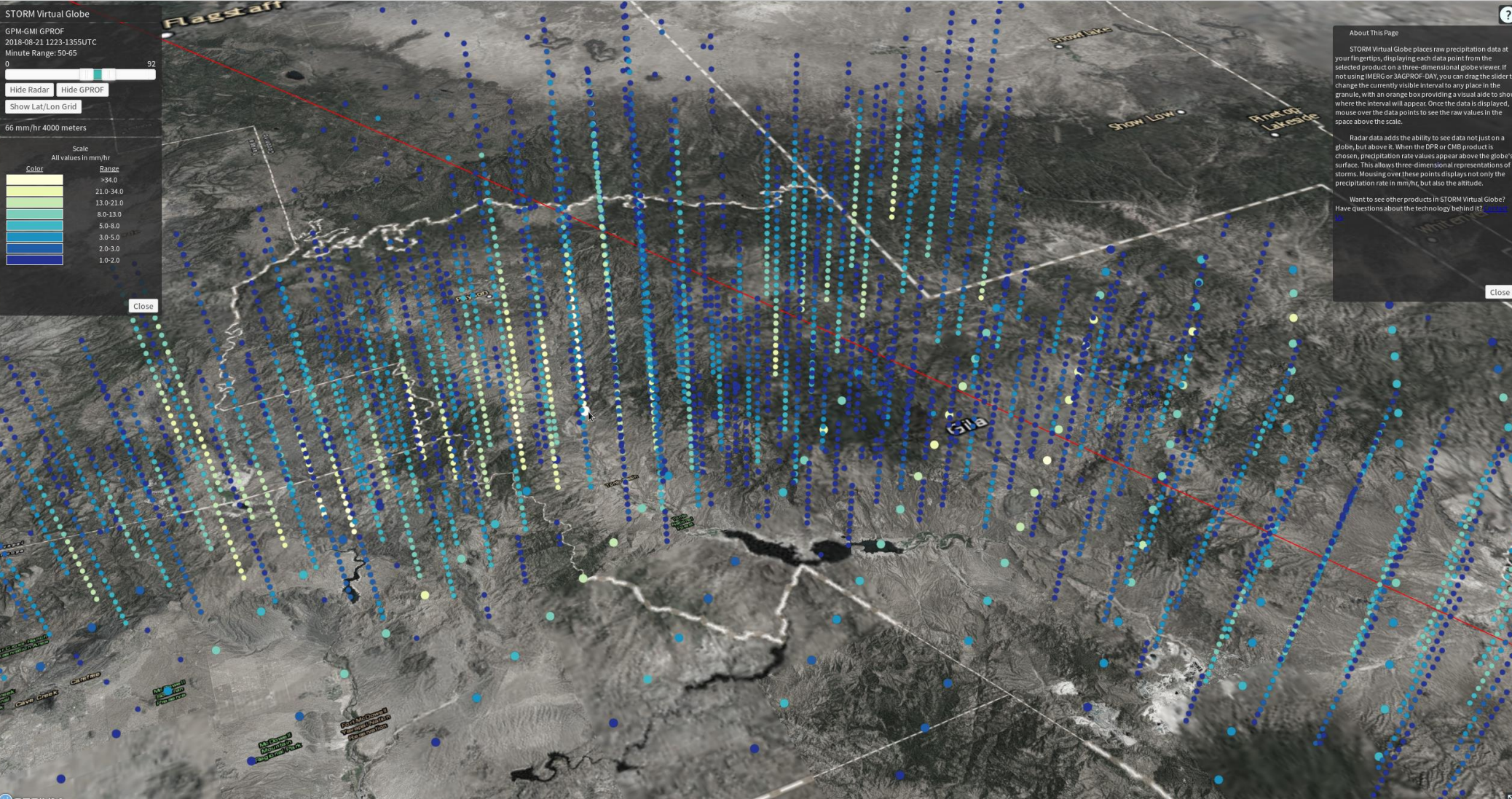
Show Lat/Lon Grid

66 mm/hr 4000 meters

Scale
All values in mm/hr

Color	Rate
Yellow	>34.0
Light Green	21.0-34.0
Green	13.0-21.0
Teal	8.0-13.0
Blue-Teal	5.0-8.0
Blue	3.0-5.0
Dark Blue	2.0-3.0
Very Dark Blue	1.0-2.0

Close



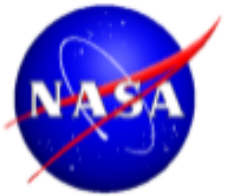
About This Page

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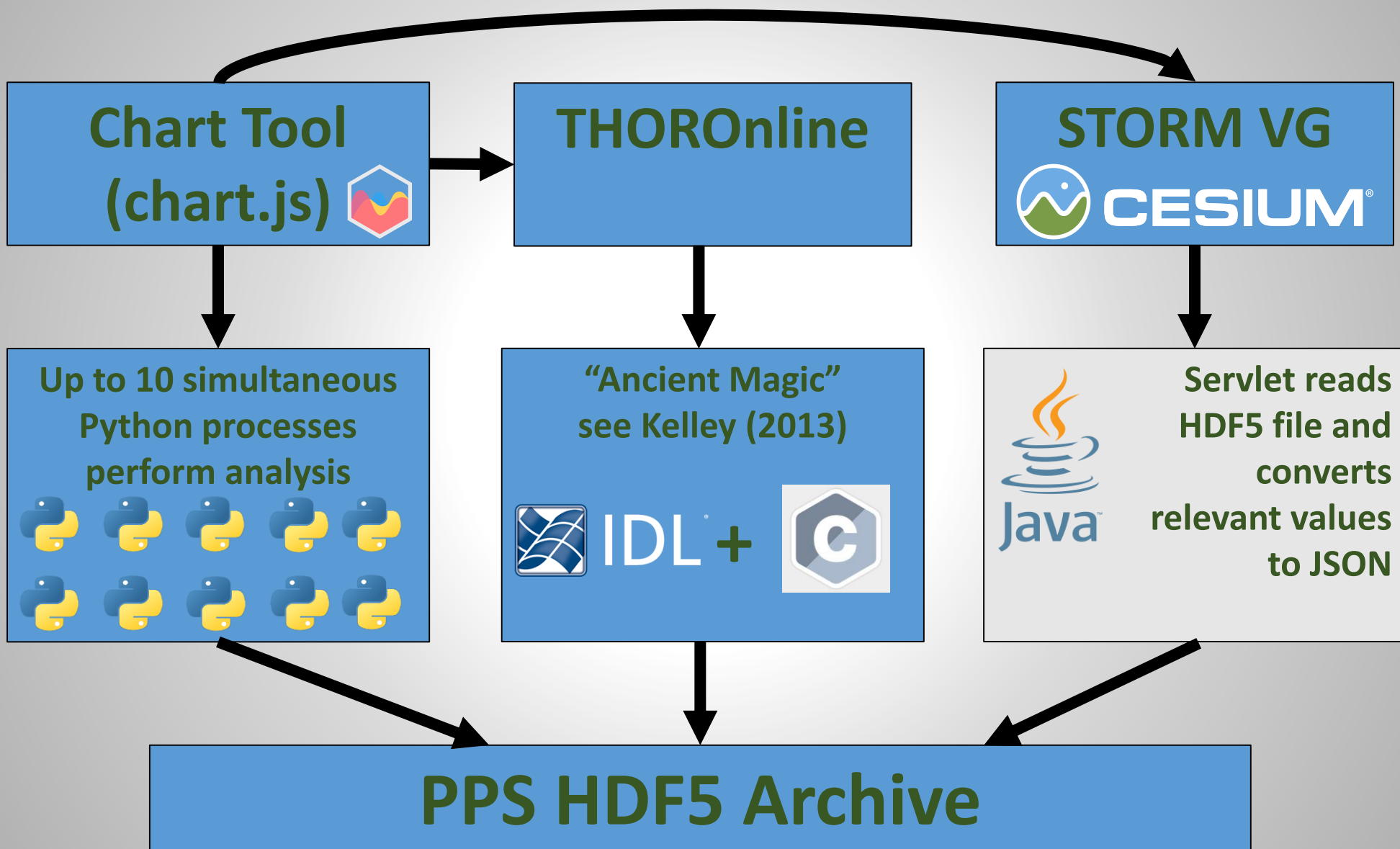
Radar data adds the ability to see data not just on a globe, but above it. When the DPR or CMG product is chosen, precipitation rate values appear above the globe's surface. This allows three-dimensional representations of storms. Mousing over these points displays not only the precipitation rate in mm/hr, but also the altitude.

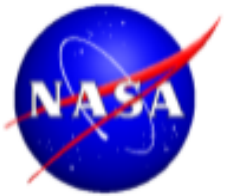
Want to see other products in STORM Virtual Globe? Have questions about the technology behind it? [Contact Us](#)

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Technical Breakdown





Making an Order



Submit Order Based on Criteria:

Registered Email: [Don't have a PPS Registered Email? Register Here!](#)

Order All Granules With:

**All granules will be geographically subset to the scans within the specified domain*

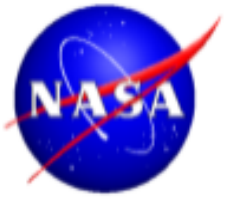


At the bottom of the page, users can create a geographically-subset order for all files meeting a statistical threshold. Here we only want granules with mean precipitation rate greater than 0.4 (mm/hr).

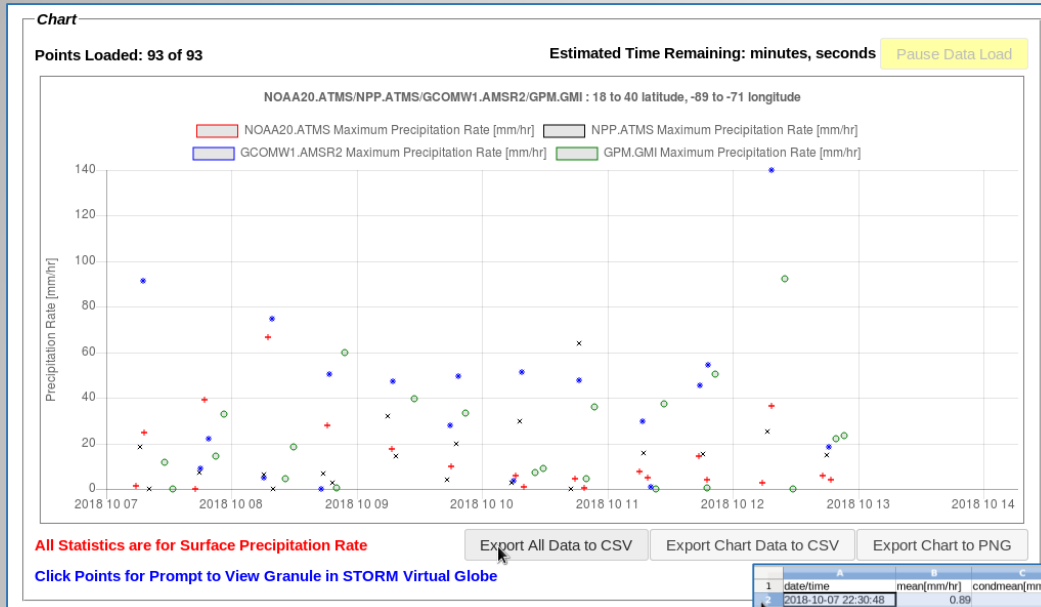
Request Submitted! Order Number: 008



File: 2A-CS-114W37N109W31N.GCOMW1.AMSR2.GPROF2017v1.20181001-S052024-E092200...	1113 KB	12/26/2018	7:22:00 PM
File: 2A-CS-114W37N109W31N.GCOMW1.AMSR2.GPROF2017v1.20181001-S202213-E202416...	1401 KB	12/26/2018	7:22:00 PM
File: 2A-CS-114W37N109W31N.GPM.DPR.V8-20180723.20181002-S152840-E153034.026104.V0...	8594 KB	12/26/2018	7:22:00 PM
File: 2A-CS-114W37N109W31N.GPM.DPR.V8-20180723.20181016-S111401-E111535.026319.V0...	6328 KB	12/26/2018	7:21:00 PM
File: 2A-CS-114W37N109W31N.GPM.GMI.GPROF2017v1.20180110-S064953-E065153.021976.V...	656 KB	12/26/2018	7:22:00 PM
File: 2A-CS-114W37N109W31N.GPM.GMI.GPROF2017v1.20180311-S123008-E123201.022913.V...	599 KB	12/26/2018	7:22:00 PM
File: 2A-CS-114W37N109W31N.GPM.GMI.GPROF2017v1.20180616-S081143-E081337.024419.V...	615 KB	12/26/2018	7:22:00 PM
File: 2A-CS-114W37N109W31N.GPM.GMI.GPROF2017v1.20180710-S013411-E013613.024788.V...	632 KB	12/26/2018	7:22:00 PM
File: 2A-CS-114W37N109W31N.GPM.GMI.GPROF2017v1.20180712-S012408-E012610.024819.V...	649 KB	12/26/2018	7:22:00 PM
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File: 2A-CS-114W37N109W31N.GPM.GMI.GPROF2017v1.20180919-S185438-E185708.025904.V...	759 KB	12/26/2018	7:22:00 PM
File: 2A-CS-114W37N109W31N.GPM.GMI.GPROF2017v1.20181001-S012131-E012329.026079.V...	601 KB	12/26/2018	7:22:00 PM
File: 2A-CS-114W37N109W31N.GPM.GMI.GPROF2017v1.20181006-S231811-E232005.026171.V...	615 KB	12/26/2018	7:22:00 PM



storm.pps.eosdis.nasa.gov/ storm/Analysis.jsp



If you just want to work with the statistical data, you can do that too! Export all the data (or just the currently plotted data) to CSV and put it in your favorite spreadsheet...or your programming language

	date/time	mean[mm/hr]	condmean[mm/hr]	median[mm/hr]	max[mm/hr]	std[mm/hr]	var[mm/hr]	perc[%]	count[number]	granule
1	2018-10-07 22:30:48	0.89	1.903	0.07	33.08	2.875	8.265	46.38	5464	2A.GPM.GMI.GPROF2017v1.20181007-S212837-E230111.026186.V05A.HDF5
2	2018-10-08 21:36:22	0.888	2.47	0	59.82	2.902	8.42	35.78	27594	2A.GPM.GMI.GPROF2017v1.20181008-S203722-E220956.026201.V05A.HDF5
3	2018-10-07 19:41:54	0.685	1.425	0.068	22.21	1.422	2.022	47.77	3096	2A.GCOMW1.AMSR2.GPROF2017v1.20181007-S191339-E205231.033993.V05A.HDF5
4	2018-10-09 19:29:01	0.67	2.111	0	49.62	2.977	8.86	31.47	25495	2A.GCOMW1.AMSR2.GPROF2017v1.20181009-S190117-E204009.034022.V05A.HDF5
5	2018-10-08 07:46:47	0.647	3.088	0	74.65	3.853	14.842	20.81	54572	2A.GCOMW1.AMSR2.GPROF2017v1.20181008-S064559-E082442.034000.V05A.HDF5
6	2018-10-10 18:38:26	0.578	1.999	0	63.91	2.116	4.477	28.62	7631	2A.NPP.ATMS.GPROF2017v2.20181010-S181546-E195715.036027.V05D.HDF5
7	2018-10-07 18:43:57	0.548	2.095	0	39.2	1.847	3.412	25.98	6416	2A.NOAA20.ATMS.GPROF2017v2.20181007-S182117-E200246.004589.V05A.HDF5
8	2018-10-09 06:51:12	0.538	2.146	0	47.45	2.556	6.535	24.7	90204	2A.GCOMW1.AMSR2.GPROF2017v1.20181009-S055013-E072905.034014.V05A.HDF5
9	2018-10-09 10:59:00	0.534	1.937	0	39.48	2.098	4.4	27.18	33496	2A.GPM.GMI.GPROF2017v1.20181009-S103037-E120312.026210.V05A.HDF5
10	2018-10-10 07:34:27	0.5	1.889	0	51.25	1.917	3.674	26.08	70782	2A.GCOMW1.AMSR2.GPROF2017v1.20181010-S063328-E081220.034029.V05A.HDF5
11	2018-10-11 10:49:55	0.482	1.853	0	37.56	1.608	2.587	25.7	29492	2A.GPM.GMI.GPROF2017v1.20181011-S102042-E115316.026241.V05A.HDF5
12	2018-10-08 06:59:56	0.476	2.452	0	66.41	2.362	5.581	19.32	9193	2A.NOAA20.ATMS.GPROF2017v2.20181008-S061146-E075315.004596.V05A.HDF5
13	2018-10-09 18:57:30	0.475	1.467	0	19.79	1.366	1.866	32.02	3995	2A.NPP.ATMS.GPROF2017v2.20181009-S183448-E201617.036013.V05D.HDF5
14	2018-10-08 18:45:40	0.453	2.203	0	50.25	1.976	3.906	20.37	87410	2A.GCOMW1.AMSR2.GPROF2017v1.20181008-S181801-E195653.034007.V05A.HDF5
15	2018-10-08 18:24:55	0.443	2.053	0	27.72	1.591	2.531	21.39	9456	2A.NOAA20.ATMS.GPROF2017v2.20181008-S180215-E194344.004603.V05A.HDF5
16	2018-10-10 07:13:25	0.443	1.745	0	29.63	1.455	2.18	25.03	7055	2A.NPP.ATMS.GPROF2017v2.20181010-S062517-E080646.036020.V05D.HDF5
17	2018-10-10 18:33:18	0.384	1.78	0	47.92	1.481	2.193	21.21	106127	2A.GCOMW1.AMSR2.GPROF2017v1.20181010-S180539-E194431.034036.V05A.HDF5
18	2018-10-12 21:22:10	0.369	2.734	0	23.28	1.772	3.14	13.5	326	2A.GPM.GMI.GPROF2017v1.20181012-S201731-E215005.026263.V05A.HDF5
19	2018-10-11 17:38:51	0.348	1.599	0	45.28	1.383	1.913	21.4	37843	2A.GCOMW1.AMSR2.GPROF2017v1.20181011-S171001-E184853.034050.V05A.HDF5
20	2018-10-11 17:28:14	0.343	1.66	0	14.5	1.303	1.699	20.24	3587	2A.NOAA20.ATMS.GPROF2017v2.20181011-S170510-E184638.004645.V05A.HDF5
21	2018-10-09 05:51:31	0.334	1.631	0	31.86	1.513	2.29	19.95	1870	2A.NPP.ATMS.GPROF2017v2.20181009-S050249-E084418.036006.V05D.HDF5
22	2018-10-12 09:57:48	0.324	1.435	0	92.29	1.865	3.478	22.26	30468	2A.GPM.GMI.GPROF2017v1.20181012-S092927-E110201.026256.V05A.HDF5
23	2018-10-09 20:44:06	0.317	1.533	0	33.39	1.304	1.701	20.37	32452	2A.GPM.GMI.GPROF2017v1.20181009-S194608-E211842.026216.V05A.HDF5
24	2018-10-10 07:44:18	0.301	1.984	0	4.78	0.832	0.692	15.07	1413	2A.NOAA20.ATMS.GPROF2017v2.20181011-S065610-E083739.004639.V05A.HDF5
25	2018-10-07 07:18:56	0.299	2.545	0	24.61	1.472	2.167	11.65	5761	2A.NOAA20.ATMS.GPROF2017v2.20181007-S063048-E081217.004582.V05A.HDF5
26	2018-10-07 07:03:34	0.284	2.091	0	91.5	2.068	4.277	13.4	106962	2A.GCOMW1.AMSR2.GPROF2017v1.20181007-S060235-E074127.033985.V05A.HDF5
27	2018-10-12 07:22:05	0.281	1.836	0	139.78	1.822	3.318	15.08	88181	2A.GCOMW1.AMSR2.GPROF2017v1.20181012-S062106-E079568.034058.V05A.HDF5
28	2018-10-11 06:54:29	0.279	1.446	0	15.75	1.013	1.026	18.66	9894	2A.NPP.ATMS.GPROF2017v2.20181011-S060615-E074744.036034.V05D.HDF5
29	2018-10-11 18:19:24	0.263	1.938	0	15.44	1.314	1.242	13.39	10077	2A.NPP.ATMS.GPROF2017v2.20181011-S175644-E183813.034041.V05D.HDF5
30	2018-10-09 06:41:06	0.261	1.249	0	17.54	1.071	1.148	20.35	10145	2A.NOAA20.ATMS.GPROF2017v2.20181009-S055244-E073413.004610.V05A.HDF5
31	2018-10-09 07:32:27	0.244	1.155	0	14.52	0.994	0.989	20.8	3385	2A.NPP.ATMS.GPROF2017v2.20181009-S064419-E082548.036006.V05D.HDF5
32	2018-10-12 06:35:39	0.231	1.421	0	25.33	1.157	1.34	15.86	9583	2A.NPP.ATMS.GPROF2017v2.20181012-S064713-E072842.036040.V05D.HDF5
33	2018-10-09 18:05:59	0.221	1.028	0	10.11	0.735	0.54	20.88	10070	2A.NOAA20.ATMS.GPROF2017v2.20181009-S174313-E192442.004617.V05A.HDF5
34	2018-10-07 06:29:23	0.212	1.505	0	18.51	1.169	1.366	13.92	8765	2A.NPP.ATMS.GPROF2017v2.20181007-S064053-E072222.035977.V05D.HDF5
35	2018-10-12 17:10:50	0.21	1.815	0	5.69	0.847	0.718	11.25	889	2A.NOAA20.ATMS.GPROF2017v2.20181012-S164608-E182737.004659.V05A.HDF5
36	2018-10-09 17:50:27	0.206	1.111	0	11.92	0.817	0.691	18.14	57117	2A.GCOMW1.AMSR2.GPROF2017v1.20181009-S172241-E183113.034021.V05A.HDF5
37	2018-10-10 11:44:19	0.195	0.861	0	8.88	0.593	0.351	22.45	7384	2A.GPM.GMI.GPROF2017v1.20181010-S111518-E124432.026226.V05A.HDF5
38	2018-10-10 05:36:27	0.174	0.453	0	2.65	0.461	0.213	37.84	37	2A.NPP.ATMS.GPROF2017v2.20181010-S044347-E062516.036019.V05D.HDF5
39	2018-10-10 17:47:05	0.17	0.768	0	4.28	0.486	0.236	21.29	7261	2A.NOAA20.ATMS.GPROF2017v2.20181010-S172411-E190540.004631.V05A.HDF5
40	2018-10-10 08:03:20	0.166	0.387	0	0.96	0.238	0.057	42.54	134	2A.NOAA20.ATMS.GPROF2017v2.20181010-S071512-E085641.004625.V05A.HDF5
41	2018-10-11 06:38:53	0.137	0.616	0	29.85	0.569	0.324	21.01	70120	2A.GCOMW1.AMSR2.GPROF2017v1.20181011-S053750-E071642.034043.V05A.HDF5
42	2018-10-10 10:07:44	0.134	0.649	0	7.37	0.463	0.214	19.01	15243	2A.GPM.GMI.GPROF2017v1.20181010-S093923-E111517.026225.V05A.HDF5



Wrap Up



- **Just one example of how to integrate visualization techniques**
- **No “one size fits all” libraries for server-side or client-side code**
- **Tie visualizations to files/products, minimizing redundant tasks performed by users.**

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storm.pps.eosdis.nasa.gov/storm/Analysis.jsp