



Near Real Time LEO Level-2 Products Via Direct Broadcast Using the Community Satellite Processing Package

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CSPP Active Fires Overview

- The CSPP Active Fires (AF) package is two packages: VIIRS M-band (750m) and I-band (375m), and are based on codes delivered by the NOAA JPSS AF Team, led by Ivan Csiszar at the NOAA NESDIS Center for Satellite Applications and Research (STAR). NOAA's VIIRS AF product development has been done through collaboration between STAR, the Uni. of Maryland and the NASA VIIRS Land Science Team.
- This release provides the NESDIS Data Exploitation (NDE) operational version 1.0 of the VIIRS 375m "I-band" algorithm (equivalent to offline vfire375 version 2.5.4), and the NESDIS/STAR version of the 750m M-band algorithm, both adapted and tested for execution in a real-time direct broadcast environment. The "M-band" retrieval algorithm has not changed from the previous CSPP release Version 1.1.
- Both the M- and I-band packages output NetCDF4 and text files which can be read in by CSPP-Polar2Grid (and possibly others) to generate high quality AF plots.

Community Satellite Processing Package

- The Community Satellite Processing Package (CSPP) supports the Direct Broadcast (DB) meteorological and environmental satellite community through the packaging and distribution of open source science software.
- CSPP supports DB users of both polar orbiting and geostationary satellite data processing and regional real-time applications through distribution of free open source software, and through training in local product applications.
- This poster highlights two new packages, the VIIRS Active Fires package v2.0, and the GCOM-W1 AMSR2 Algorithm Software Package (GAASP) v1.0.1, both of which are currently available.
- CSPP is funded through NOAA JPSS.

Website: <http://cimss.ssec.wisc.edu/cspp>

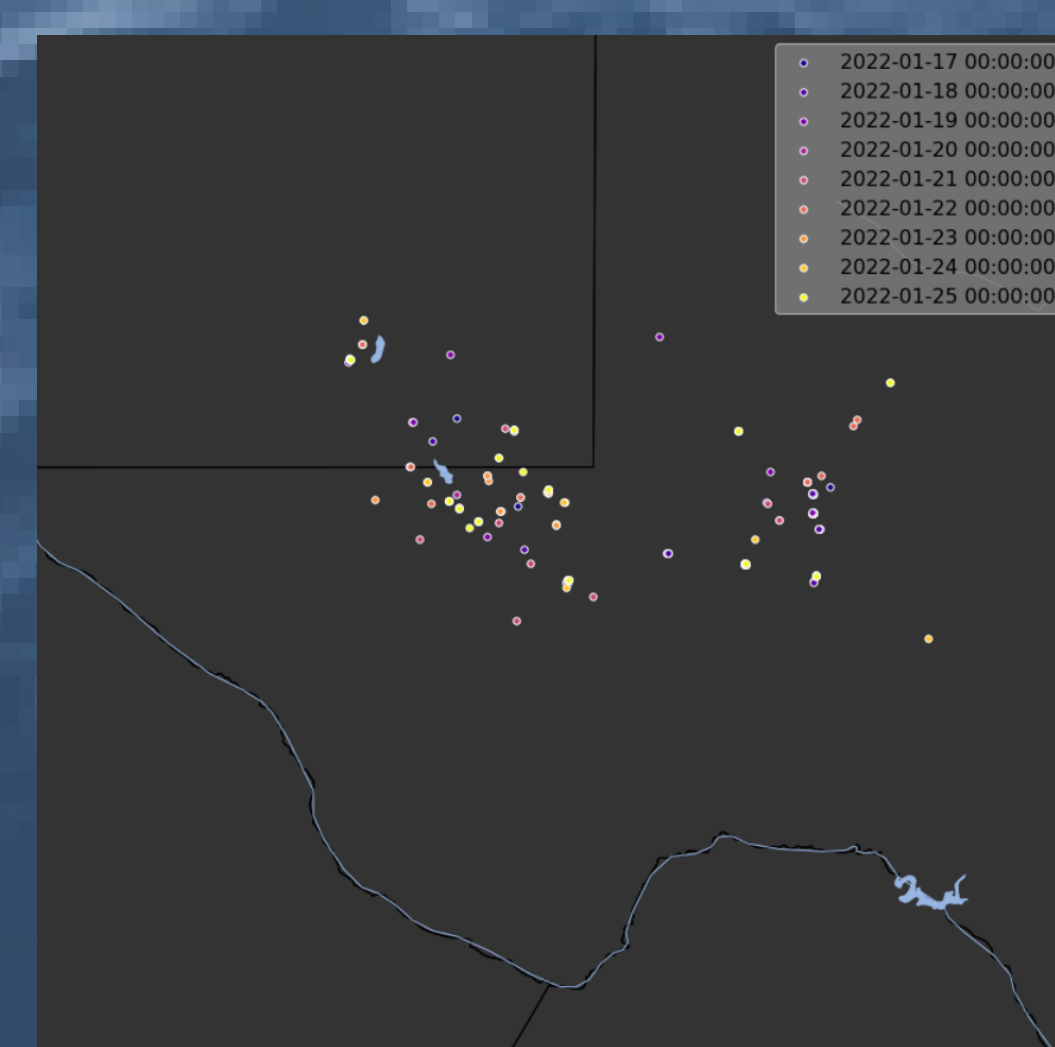
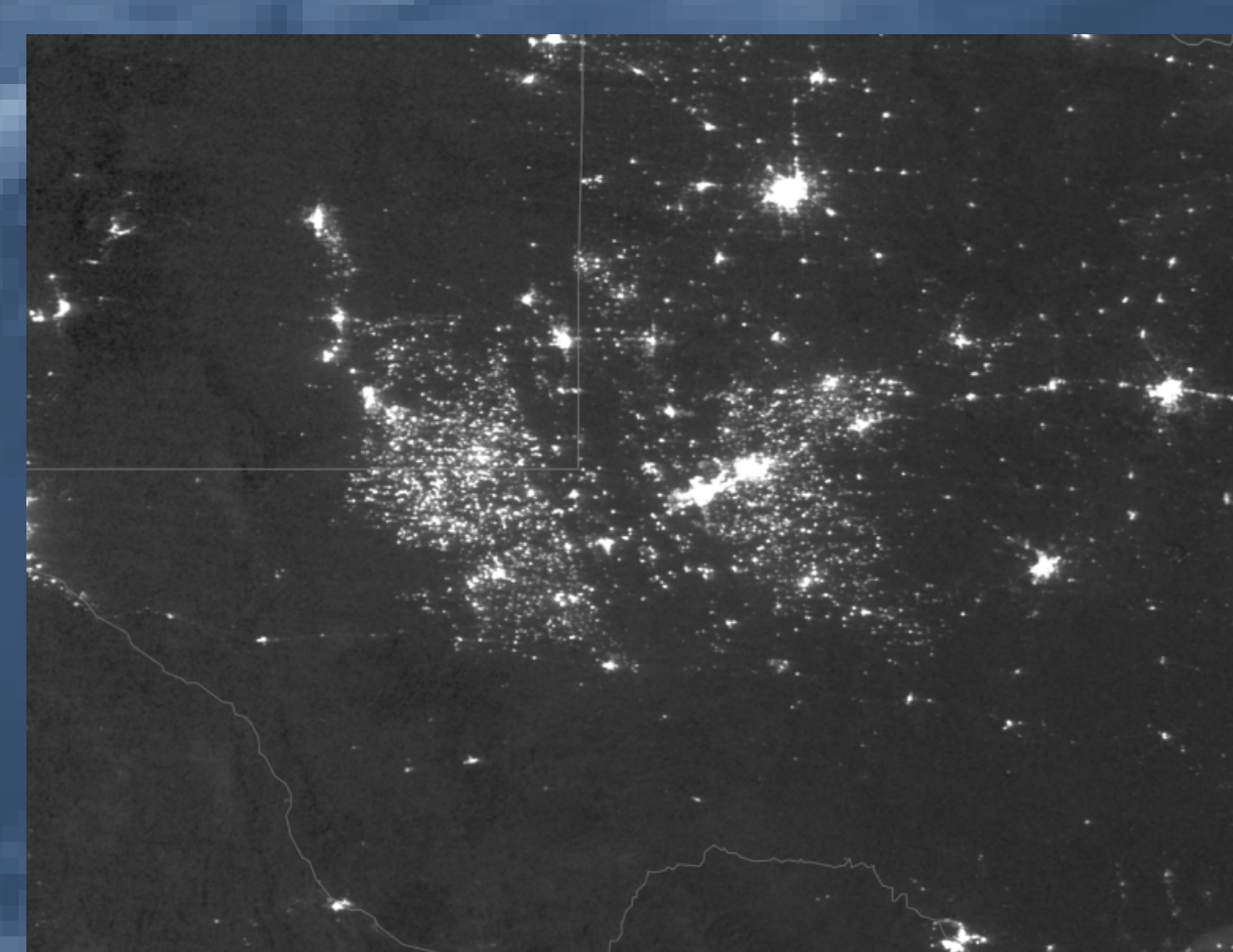
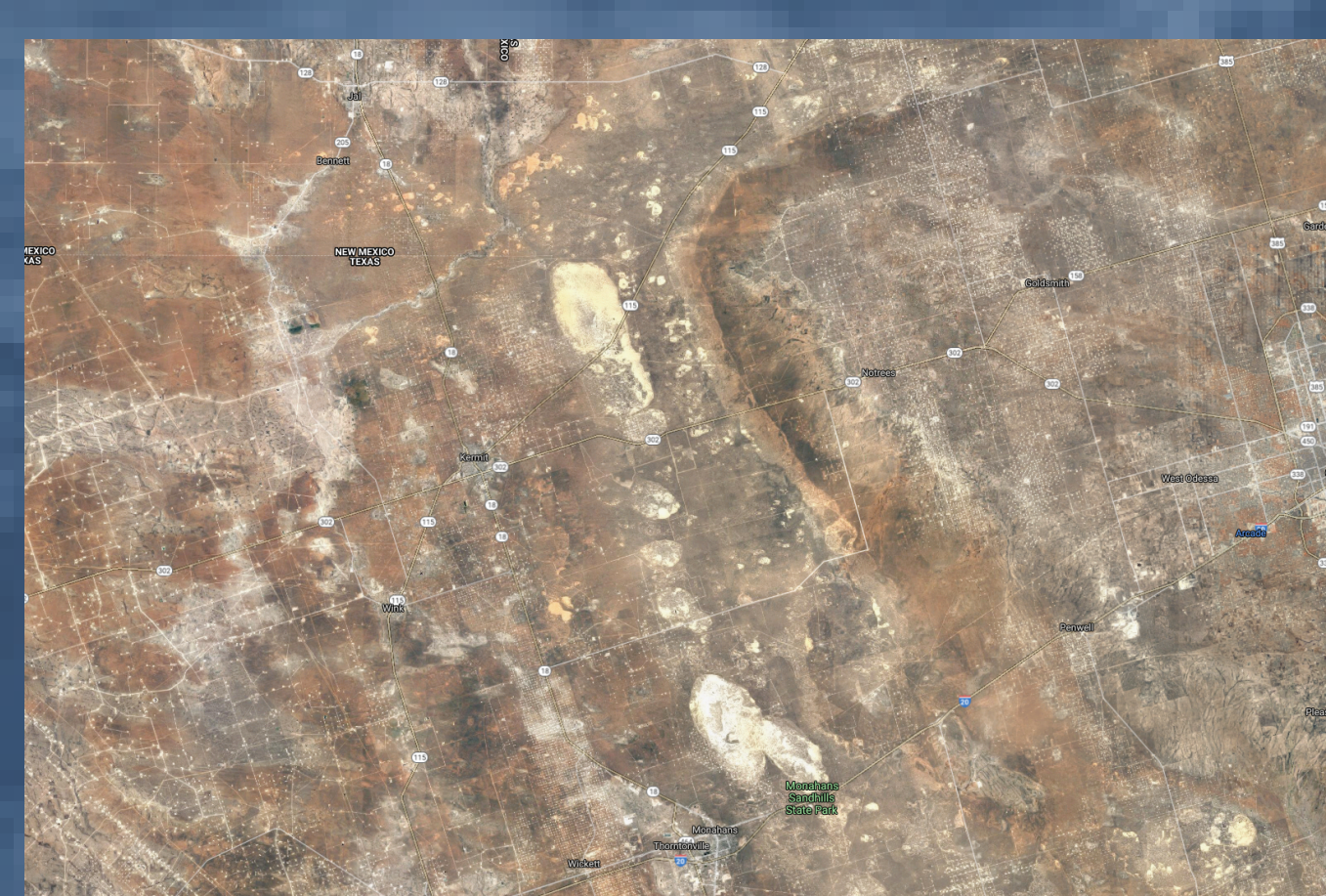
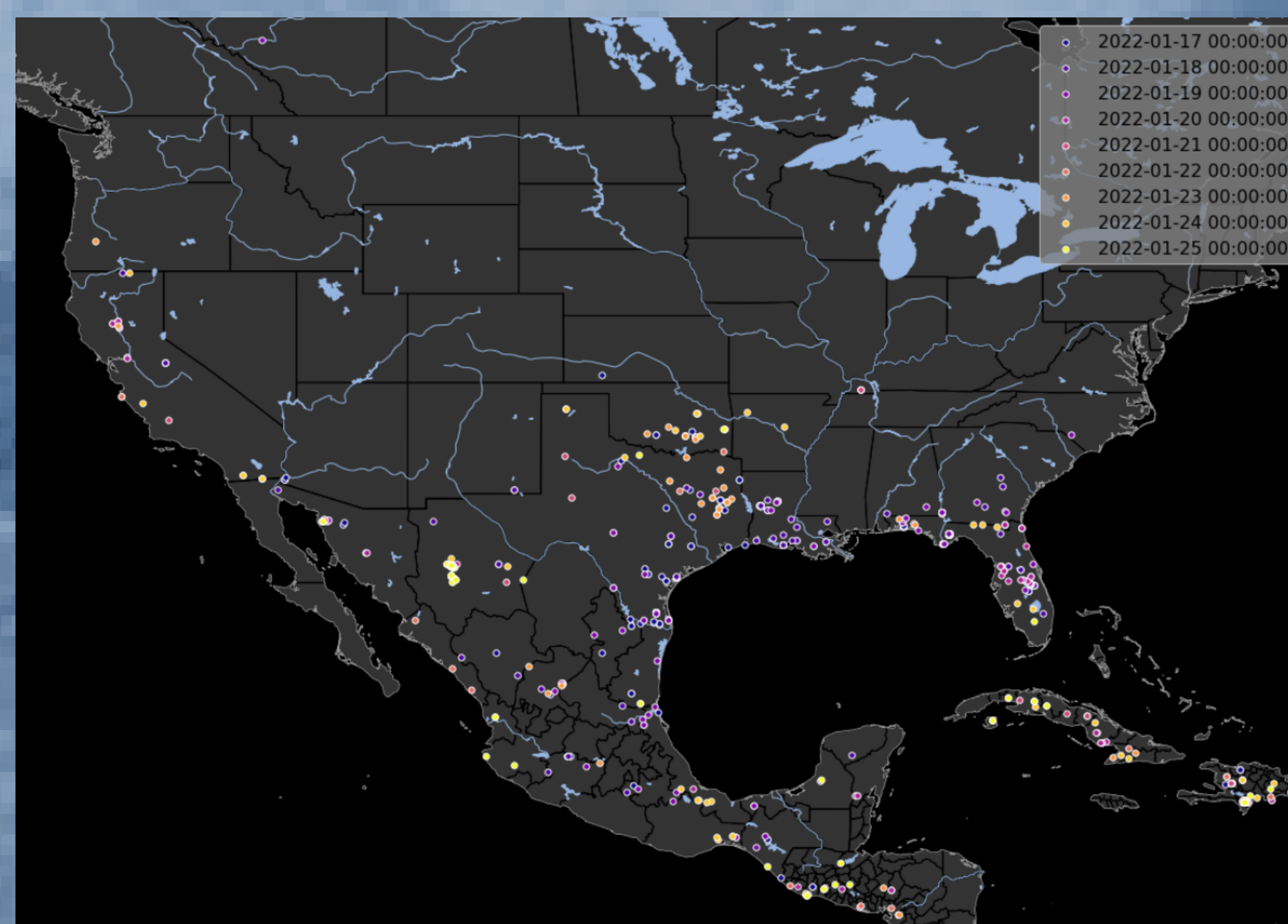
CSPP GAASP Overview

- CSPP supports generation of level-2 products using the NOAA/NESDIS/STAR Global Change Observation Mission-Water (GCOM-W1) AMSR2 Algorithm Software Package (GAASP) in support of direct broadcast for JAXA's GCOM-W1 satellite.
- GAASP generates Science Data Record (SDR) and Environmental Data Record (EDR) data products for near real-time users from the GCOM-W1 data stream.
- GAASP level-1 and level-2 products supported by CSPP-GAASP include bias-corrected Microwave Brightness Temp (MBT), Precipitation (land and ocean rain rates), GHR Sea Surface Temp (SST), Sea Surface Winds (SSW), Total Precipitable Water (TPW), Cloud Liquid Water (CLW), Soil Moisture, Surface Type, Snow Cover, Snow Depth, Snow Water Equivalent, and Sea Ice.

CSPP Active Fires Sample Output

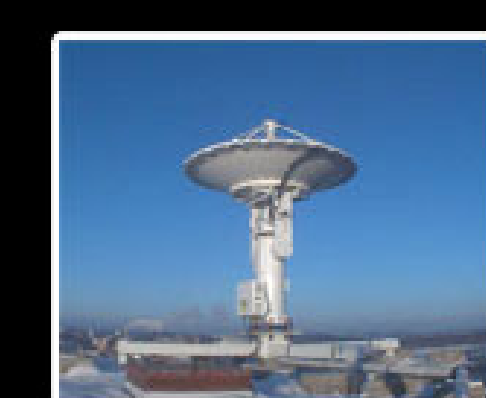
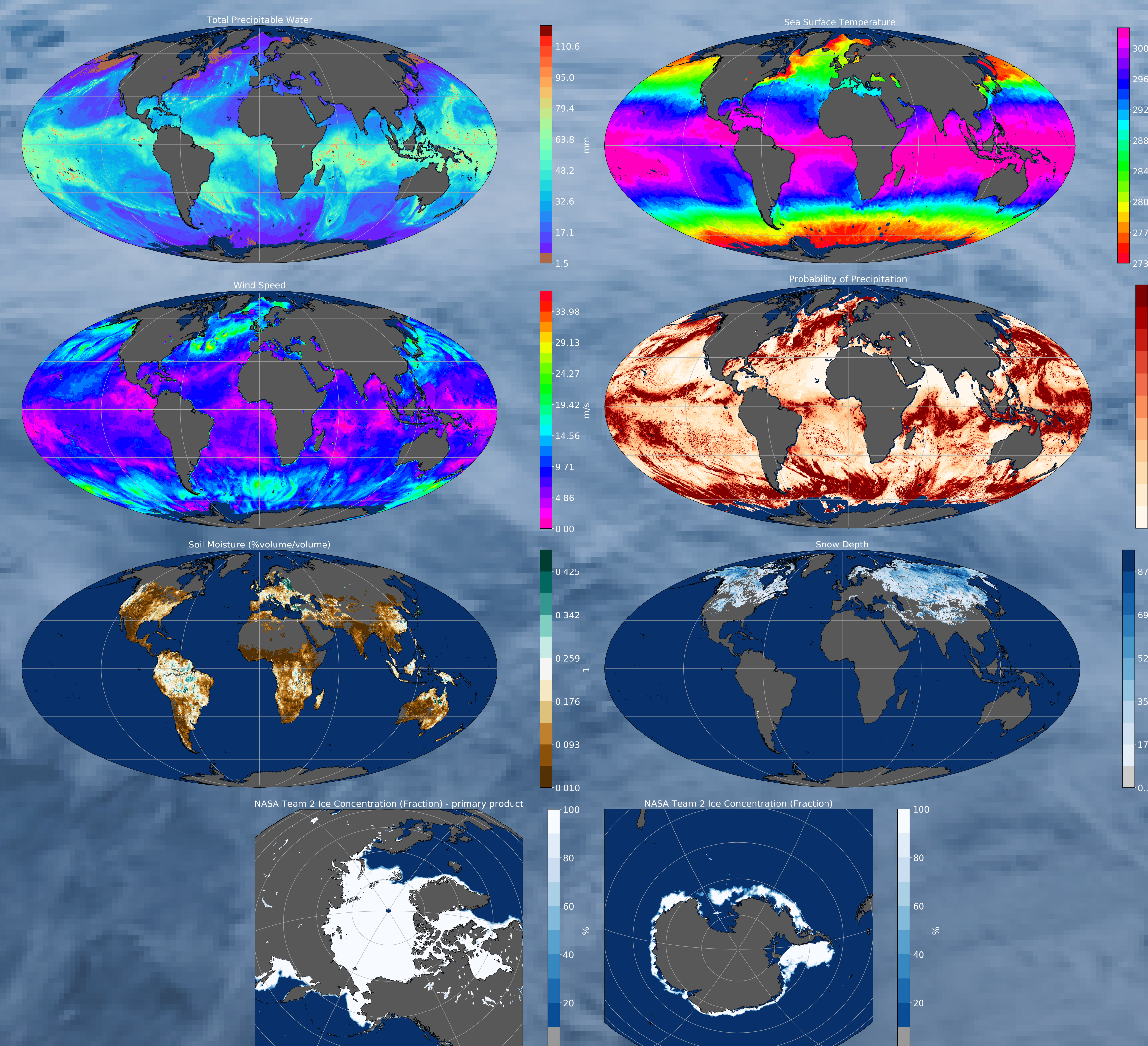
Shown below are:

- *Top:* I-band Active Fire detections for S/NPP and NOAA-20 for 17-25 Jan 2022, using data derived from direct broadcast at the University of Wisconsin — Madison. The fire detections are color-coded to highlight the day of the individual detections.
- *Bottom left:* A Google Maps image of oilfields west of Odessa, TX.
- *Bottom center:* Suomi/NPP Day Night Band image showing gas flares (2022-01-24 06h).
- *Bottom right:* Associated oil/gas persistent detections.



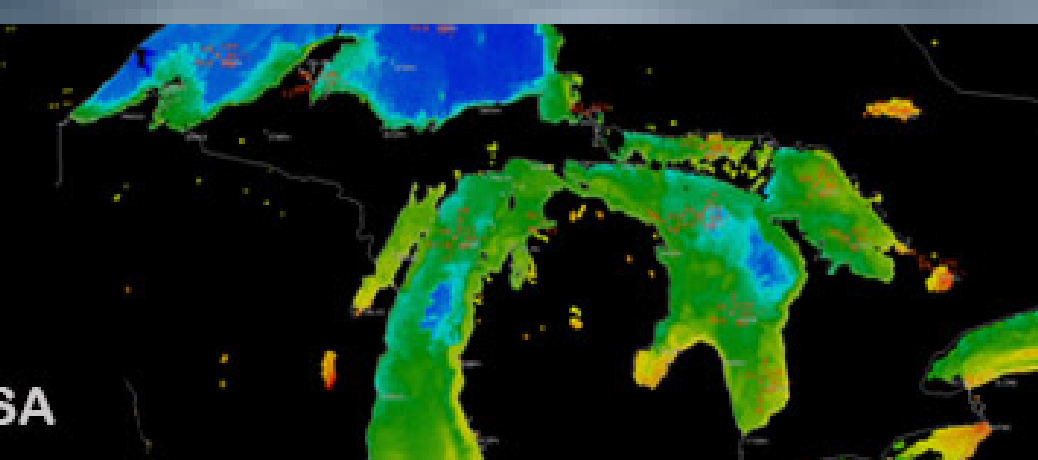
CSPP GAASP Sample Output

- Shown below are visualizations of a selection of output products from CSPP-GAASP, for the 29th January 2020, from level-1 data acquired via direct broadcast at the University of Wisconsin — Madison.



CSPP
Users' Group Meeting

21-23 June 2022
Fluno Center, UW-Madison, USA



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Wednesday 23rd June 2022
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(Background image © NOAA)