Enabling Worldwide Citizen Science Reporting of Dust Storms with NASA's GLOBE ObserverApp

AMS 100th

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Thank you to our collaborators

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Global Learning & Observations to Benefit the Environment (GLOBE) Program

Since 1995

121 countries

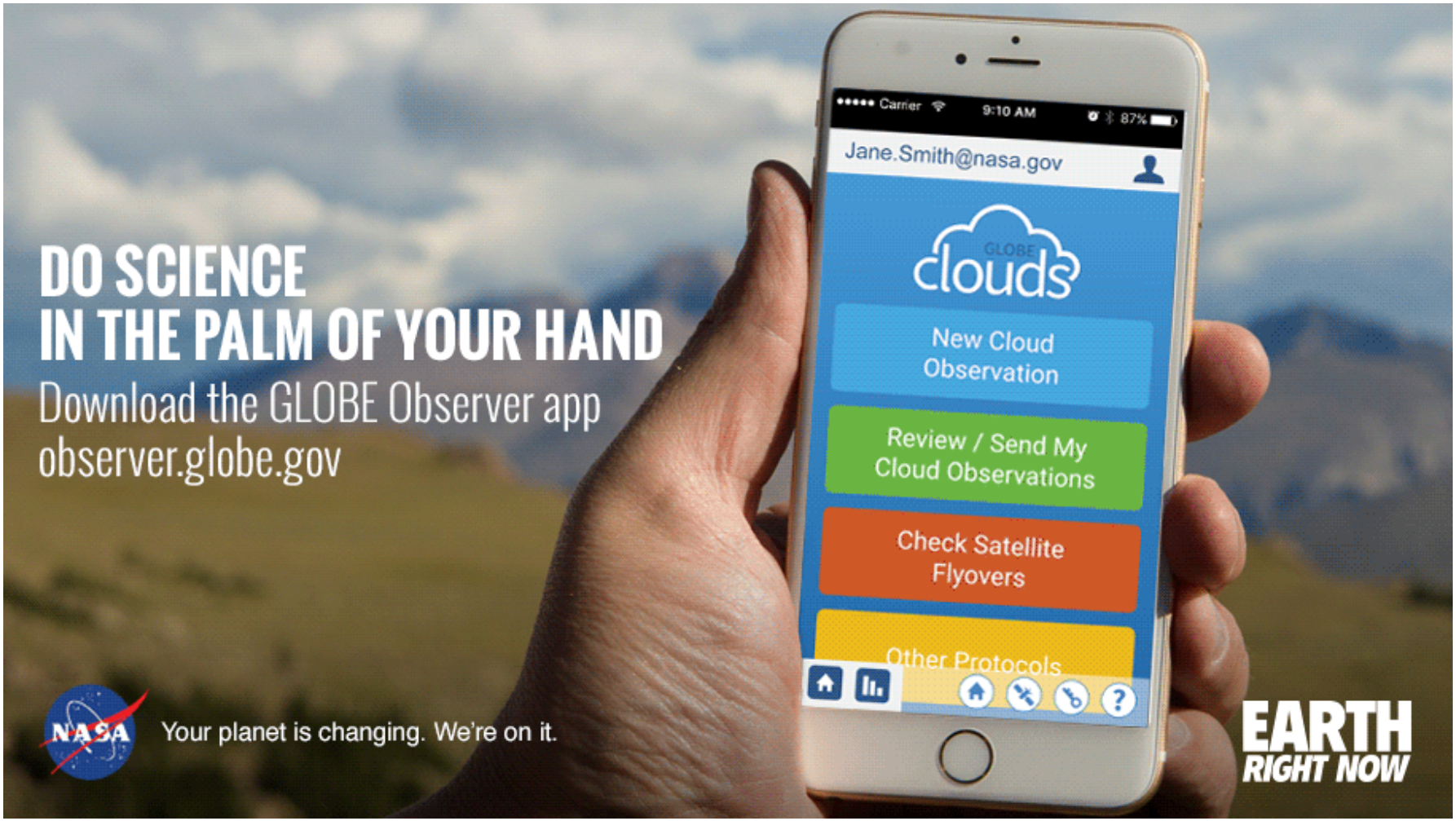
34,000 schools

160,000 citizen scientists

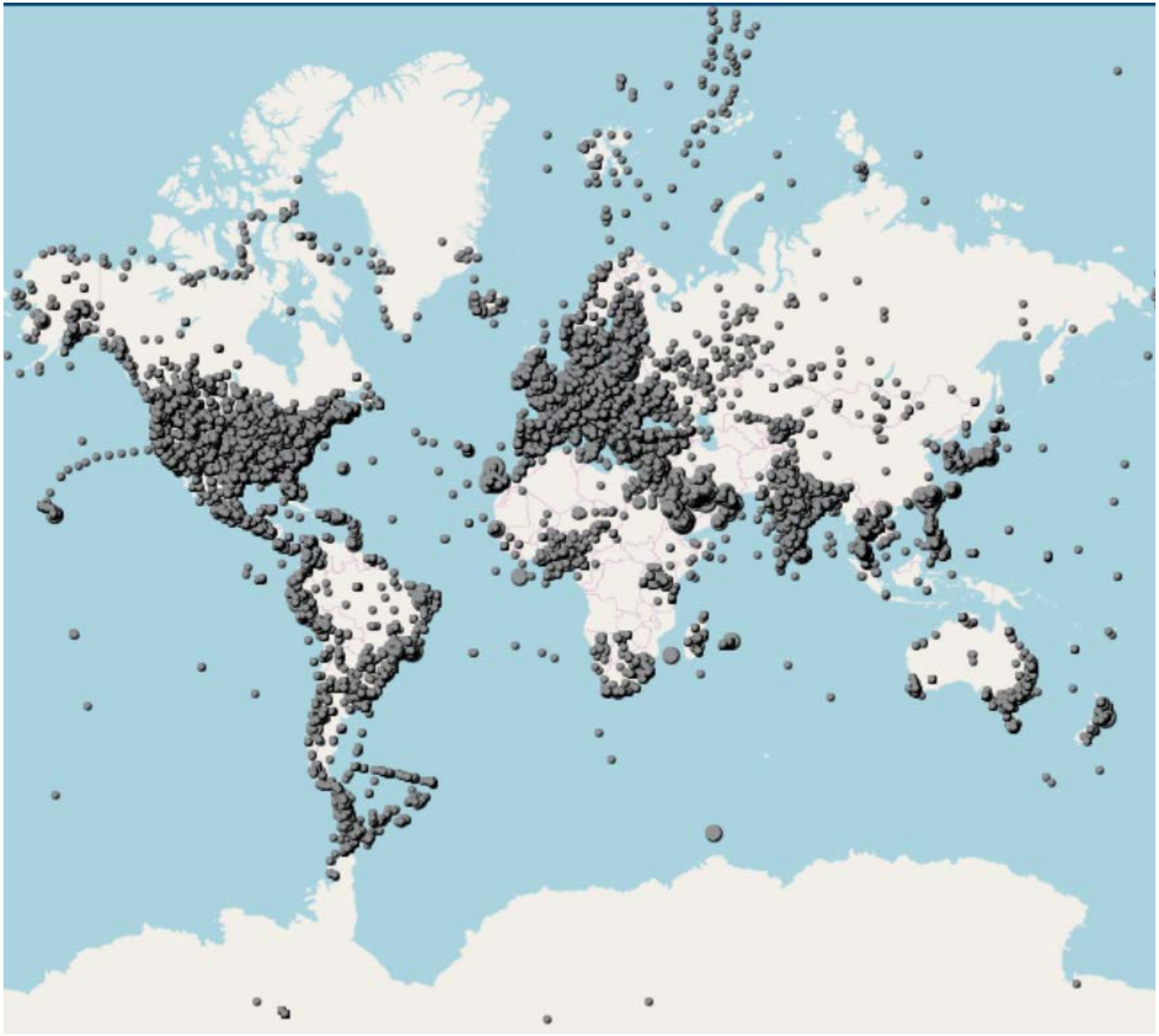
globe.gov

Sponsored by: NASA Supported by: NOAA NSF Implemented by: UCAR

Mobile app launched in 2017



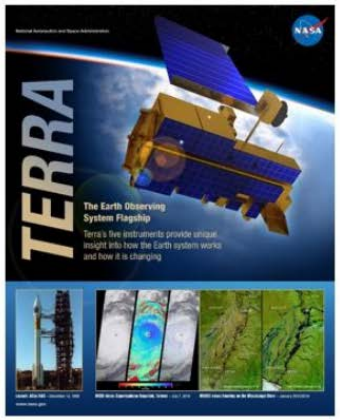
500,000 cloud observations since 2017

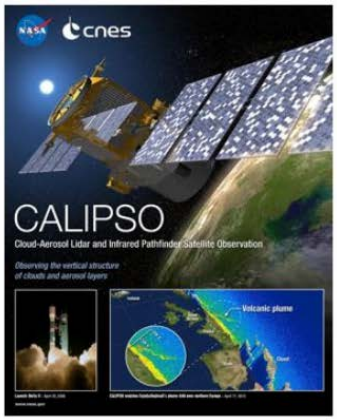


230,000 satellite matches

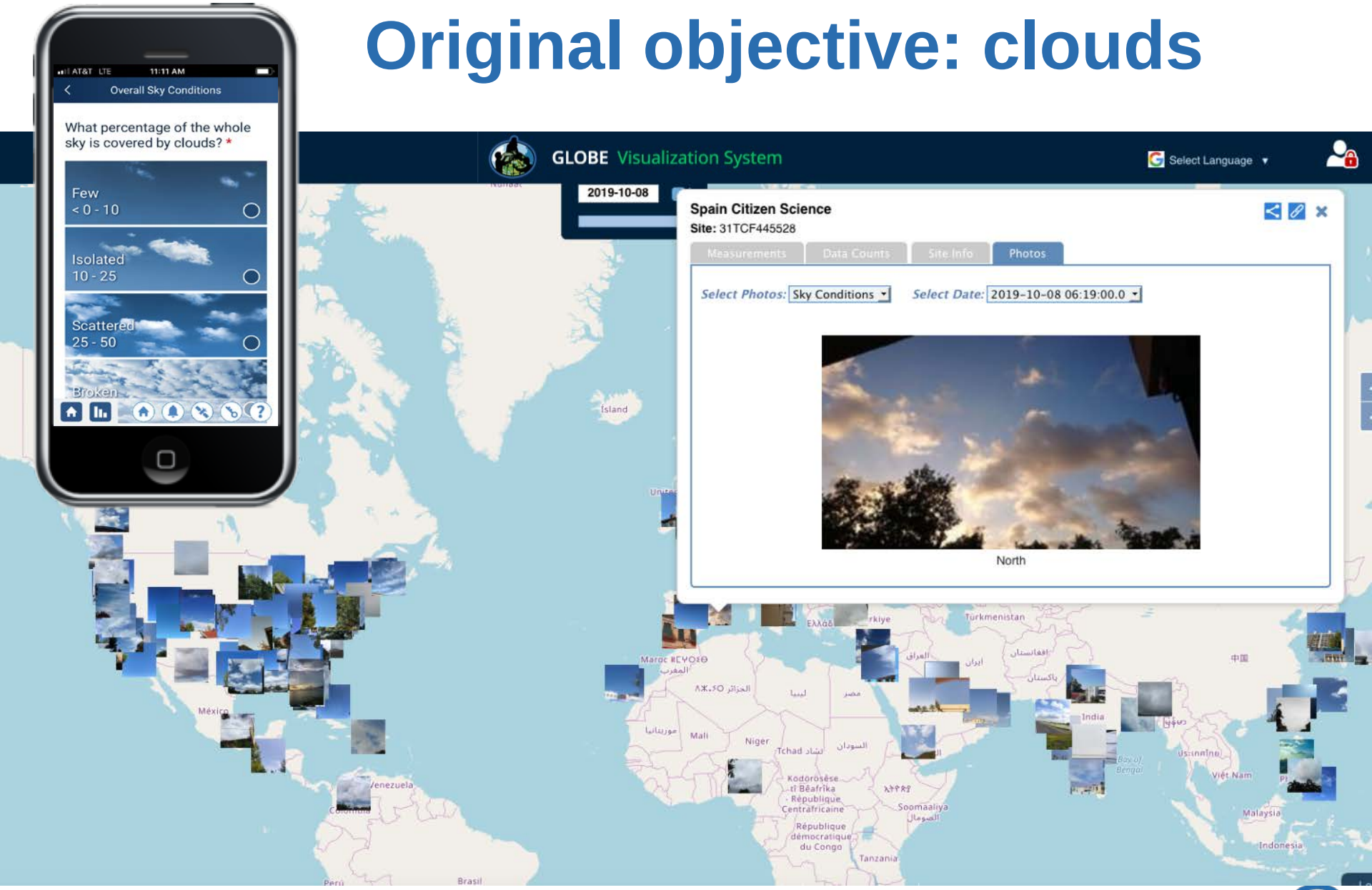
NASA emails your satellite match to you

Satellite-matched cloud dataset available
observer.globe.gov/get-data/cloud-data

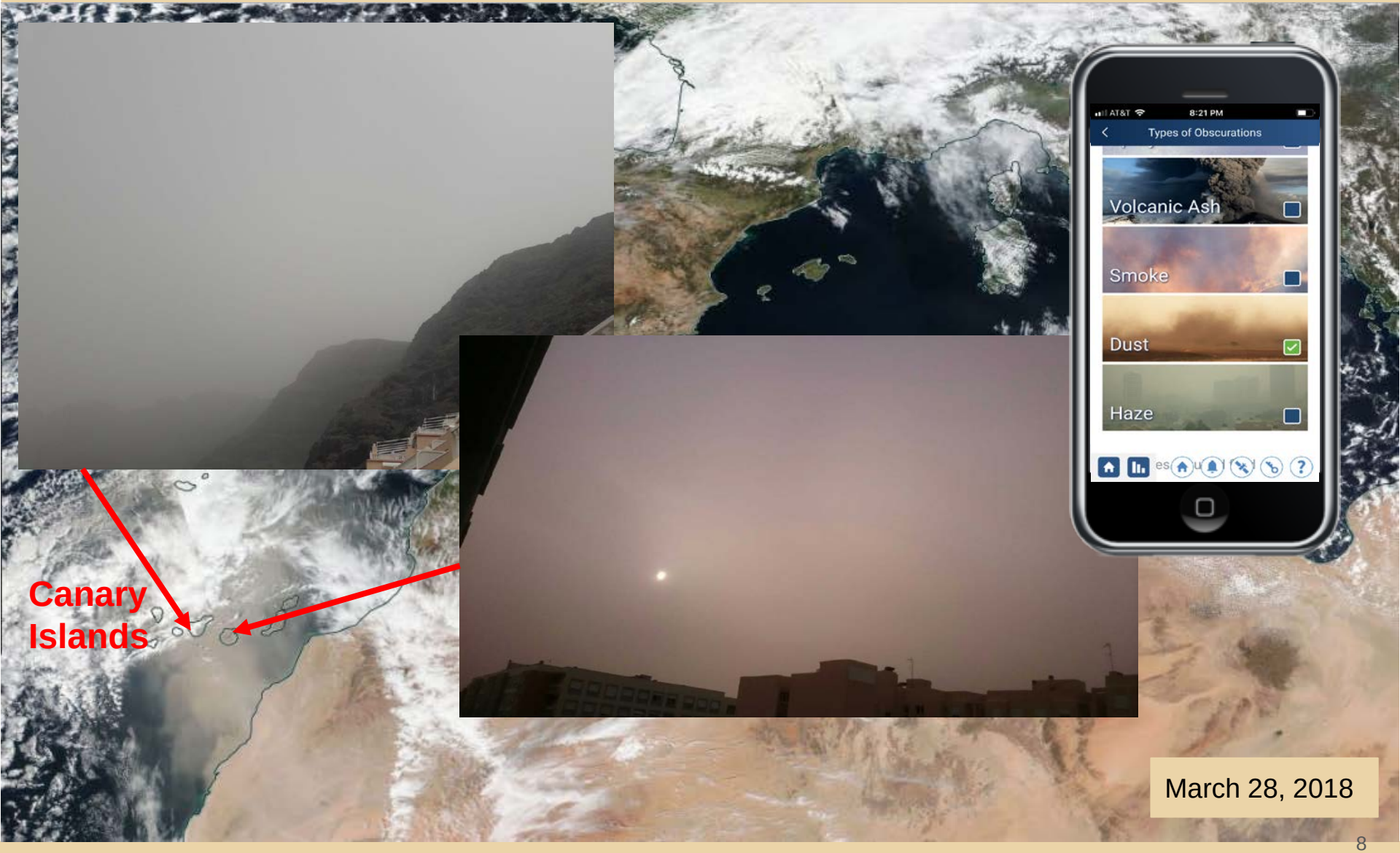




Original objective: clouds



GLOBE Observers Caught in Saharan Dust Storm



Source: NASA WorldView, MODIS/Aqua & Terra, Suomi NPP

Important Unique Opportunity

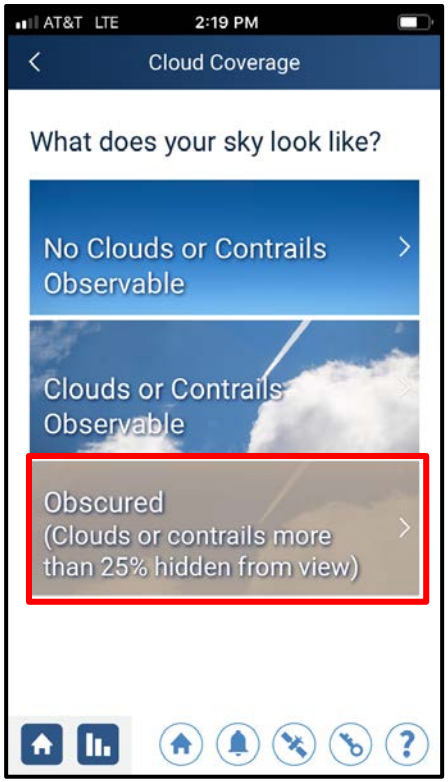
- Source of data ***to augment extremely sparse in situ dust monitoring data***.

- Geotagged photographs of dust events can be ***compared to satellite data and models***.

Data call issued to GLOBE community

Blog with step-by-step instructions (English & español)

1



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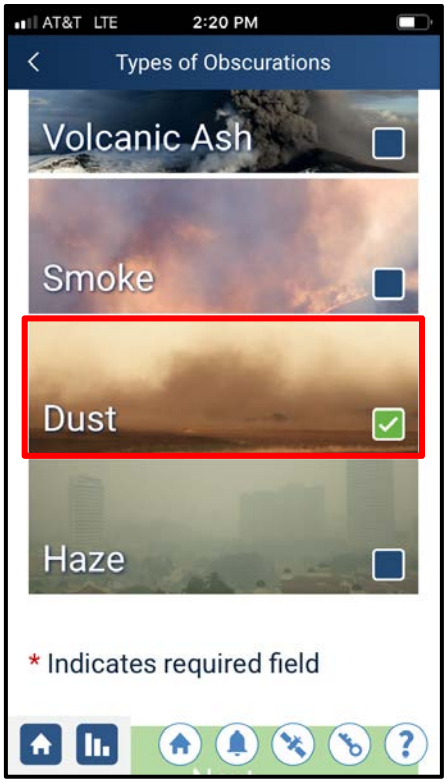

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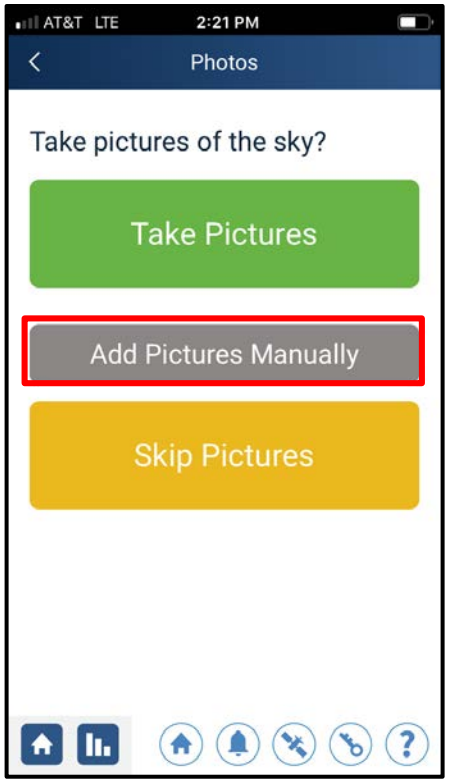
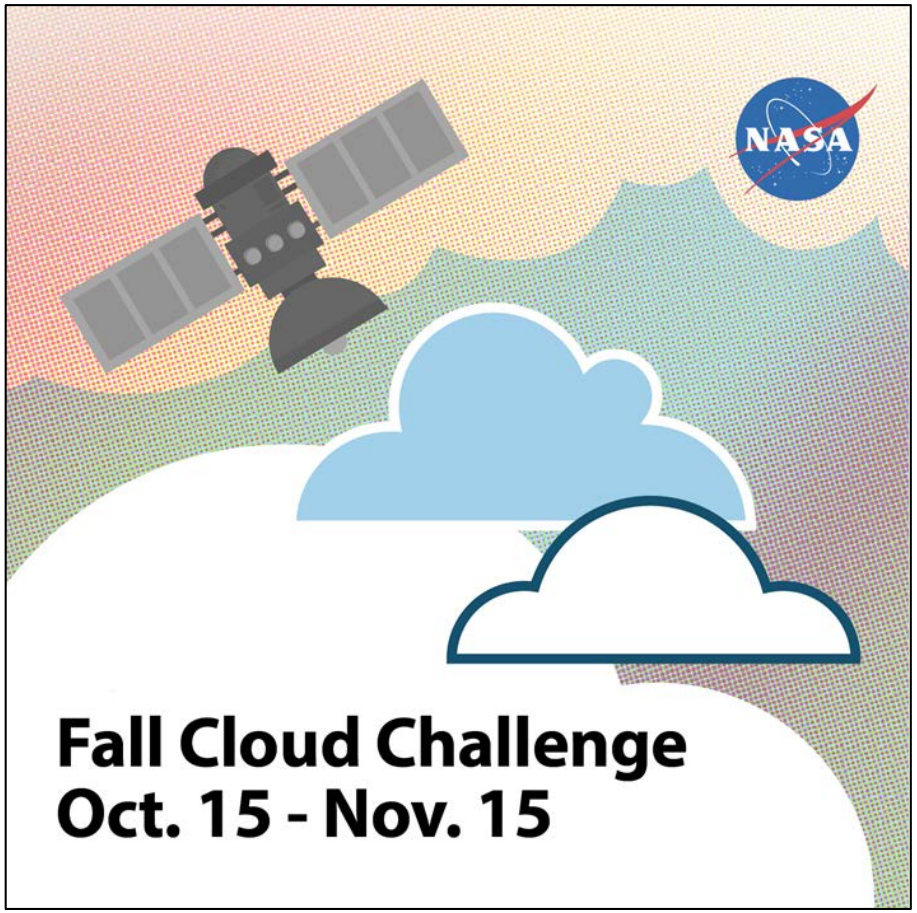


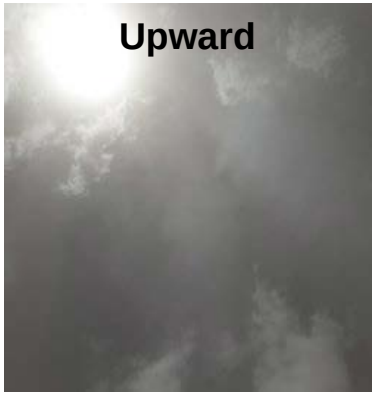
4

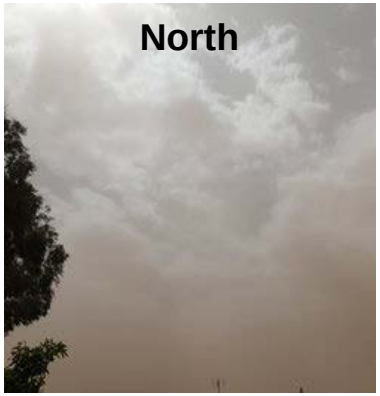
Dust focus in Fall Cloud Challenge

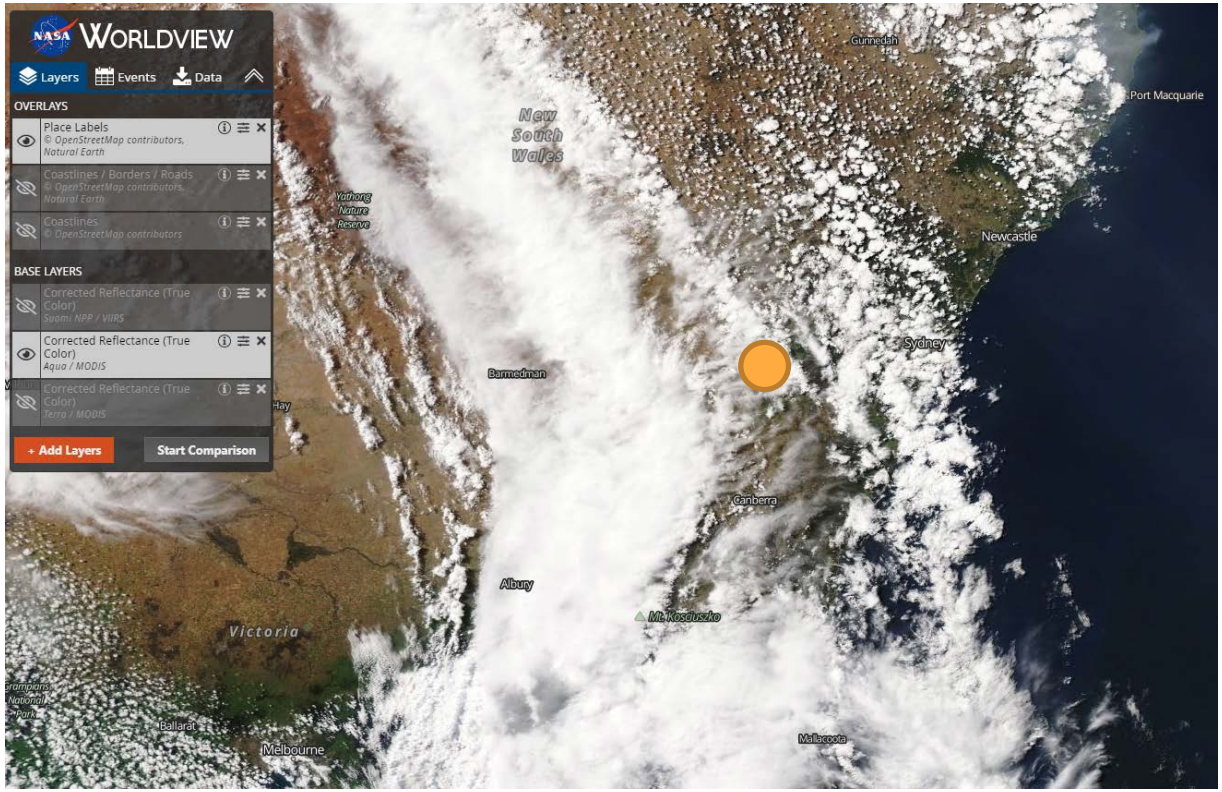


Announcement in English [link] and en español [link]

Australian Haboob – October 25, 2019







Follow live updates to dust data

Email qtong@gmu.edu to add your data to the map!

Analysis-Ready GLOBE Datasets

Download Data

GLOBE Visualization System - explore data on a world map

- View latest cloud, mosquito, land cover, and tree height data

Advanced Data Access Tool - download to csv

GLOBE API - query data from command line

Download pre-packaged data for:

- Clouds - by year and for special data challenges and events
- Dust - sky conditions with quality assurance annotations
- Eclipses - air temperature and clouds during eclipse events

https://observer.globe.gov/get-data/dust-data

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GLOBE dust webpage

globe.gov/web/s -cool/home/new -dust-observations

→ includes tutorial and python code to retrieve dust data

Listserv for scientists

lists.nasa.gov/mailman/ listinfo/go-sci

Download the app

observer.globe.gov/get-the-app

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Find lessons, activities, and more:
www.globe.gov/web/s-cool/home/new-dust-observations


¿VES UNA TORMENTA DE POLVO? ENVÍA TUS FOTOS CON GLOBE OBSERVER.
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Para lecciones, actividades y más:
bit.ly/GO_Dust_Spanish


SEE A DUST STORM?
SUBMIT YOUR PHOTOS
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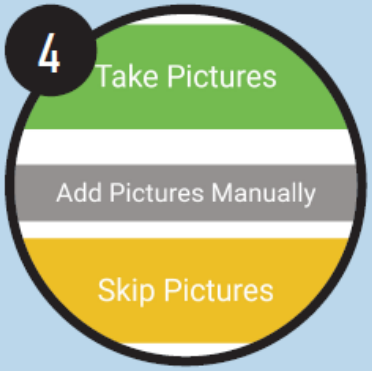
GET IT ON
Google Play

Download the GLOBE Observer app. Select Clouds and start a new observation.

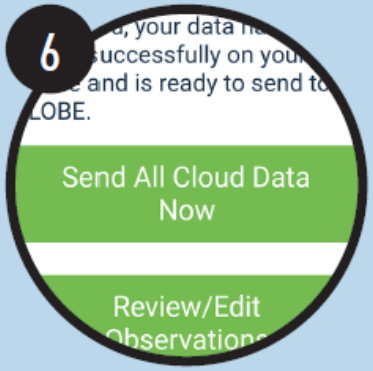
Select OBSCURED.

Select DUST. Tap continue and report ground conditions.



Select ADD PICTURES MANUALLY.

Tap on the camera icon to take photos. Point your camera straight at the horizon.



Send your observations when a cellular or WiFi signal is available.

Safety First! Protect yourself from dust. Observe from inside a building or car. Pull over, if needed.

Learn more at **observer.globe.gov/dust**