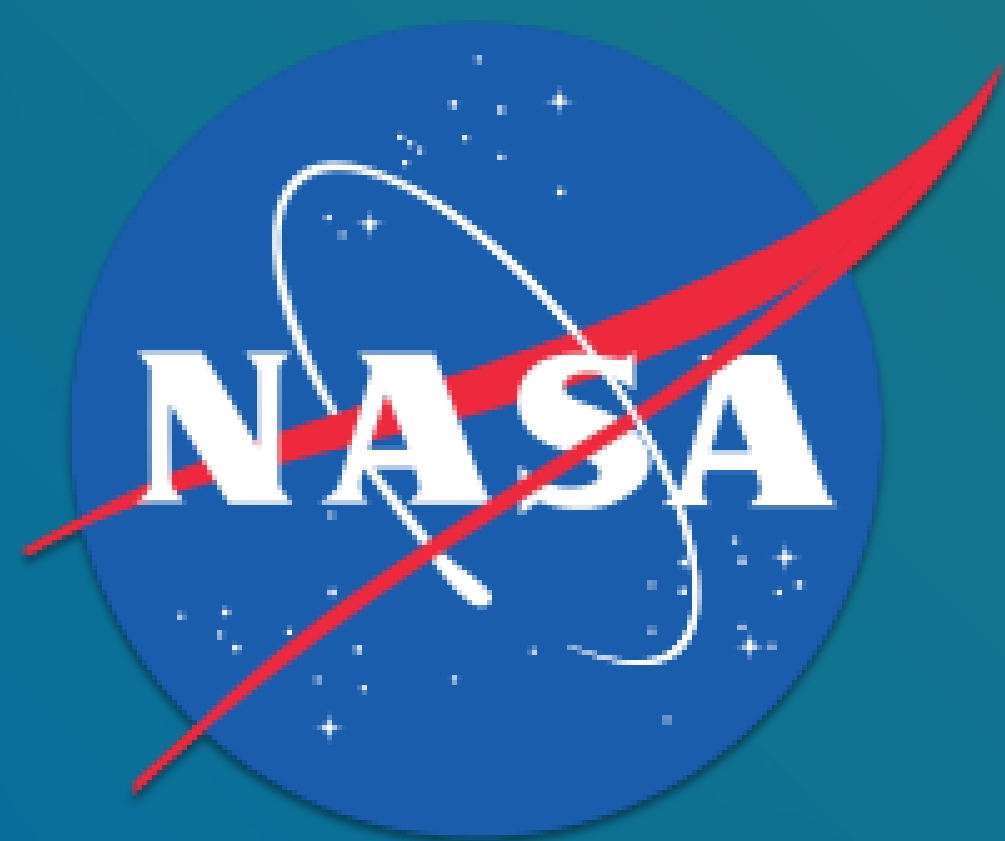


Machine Learning Applications for Earth Science at NASA IMPACT

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1 – Univ. Alabama in Huntsville, 2 – NASA Marshall Space Flight Center, 3 – Development Seed

American Geophysical Union 100th Fall Meeting
December 12, 2019



NASA EARTH FLEET

OPERATING & FUTURE THROUGH 2023

LANDSAT-9

NISAR TROPICS (6) SENTINEL-6A/B

SWOT

TSIS-2

PREFIRE (2)

GEOCARB

GLIMR

MAIA

PACE

TEMPO

ICESAT-2

GRACE-FO (2)

CYGNSS (8)

NISTAR, EPIC (DISCOVER/NOAA)

SORCE

CLOUDSAT

TERRA

AQUA

AURA

CALIPSO

GPM

LANDSAT 7 (USGS)

LANDSAT 8 (USGS)

OCO-2

SMAP

SUOMI NPP (NOAA)

ISS INSTRUMENTS

EMIT

CLARREO-PF

GEDl

SAGE III

OCO-3

TSIS-1

ECOSTRESS

LIS

JPSS-2, 3 & 4 INSTRUMENTS

OMPS-Limb

INVEST/CUBESATS

RAVAN

RainCube

CSIM

CubeRRt

TEMPEST-D

CIRiS

HARP

CTIM

HyTI

SNoOPI

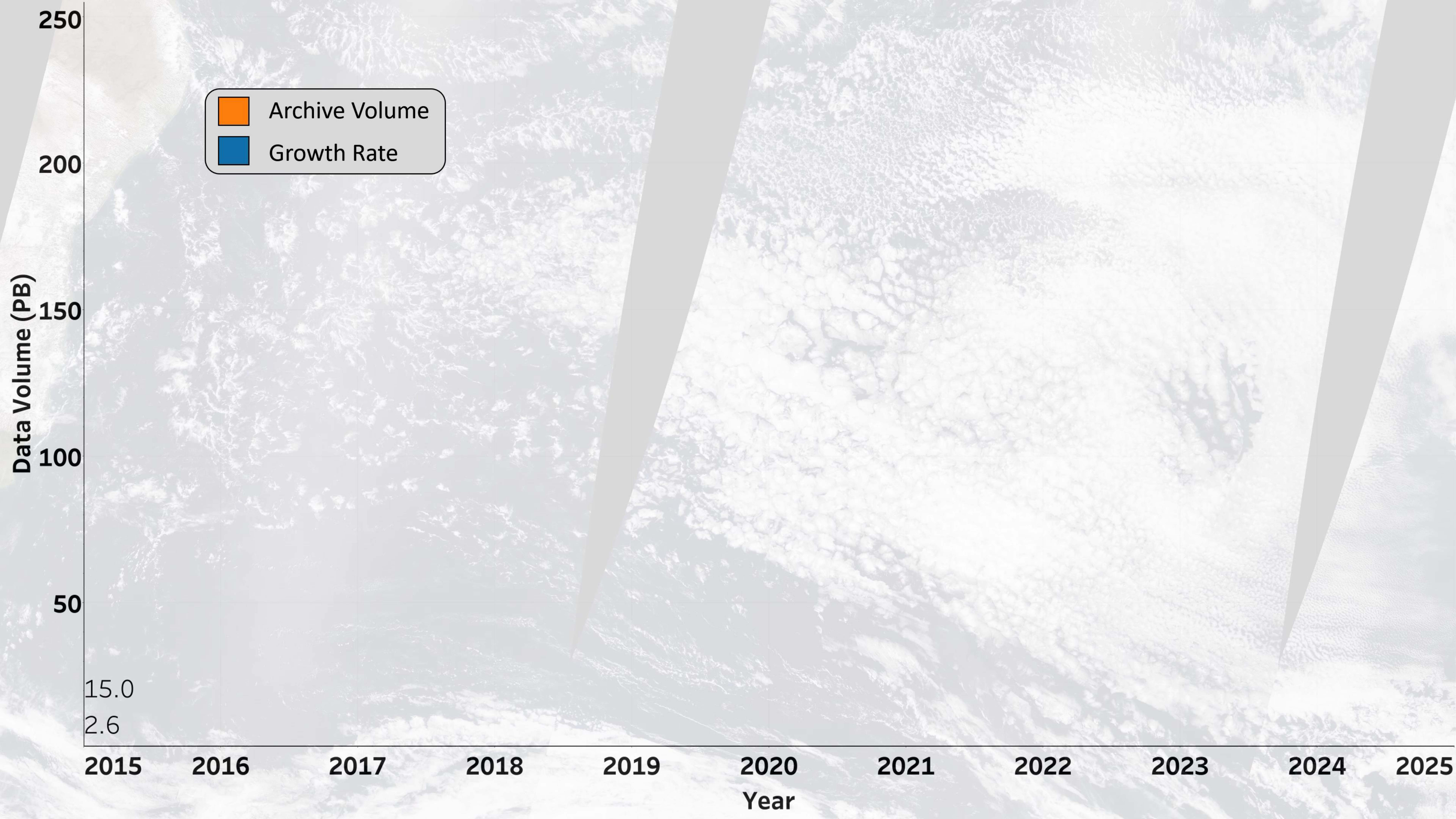
NACHOS

(PRE) FORMULATION ●

IMPLEMENTATION ●

PRIMARY OPS ●

EXTENDED OPS ●



Data

Collect | Prepare | Analyze

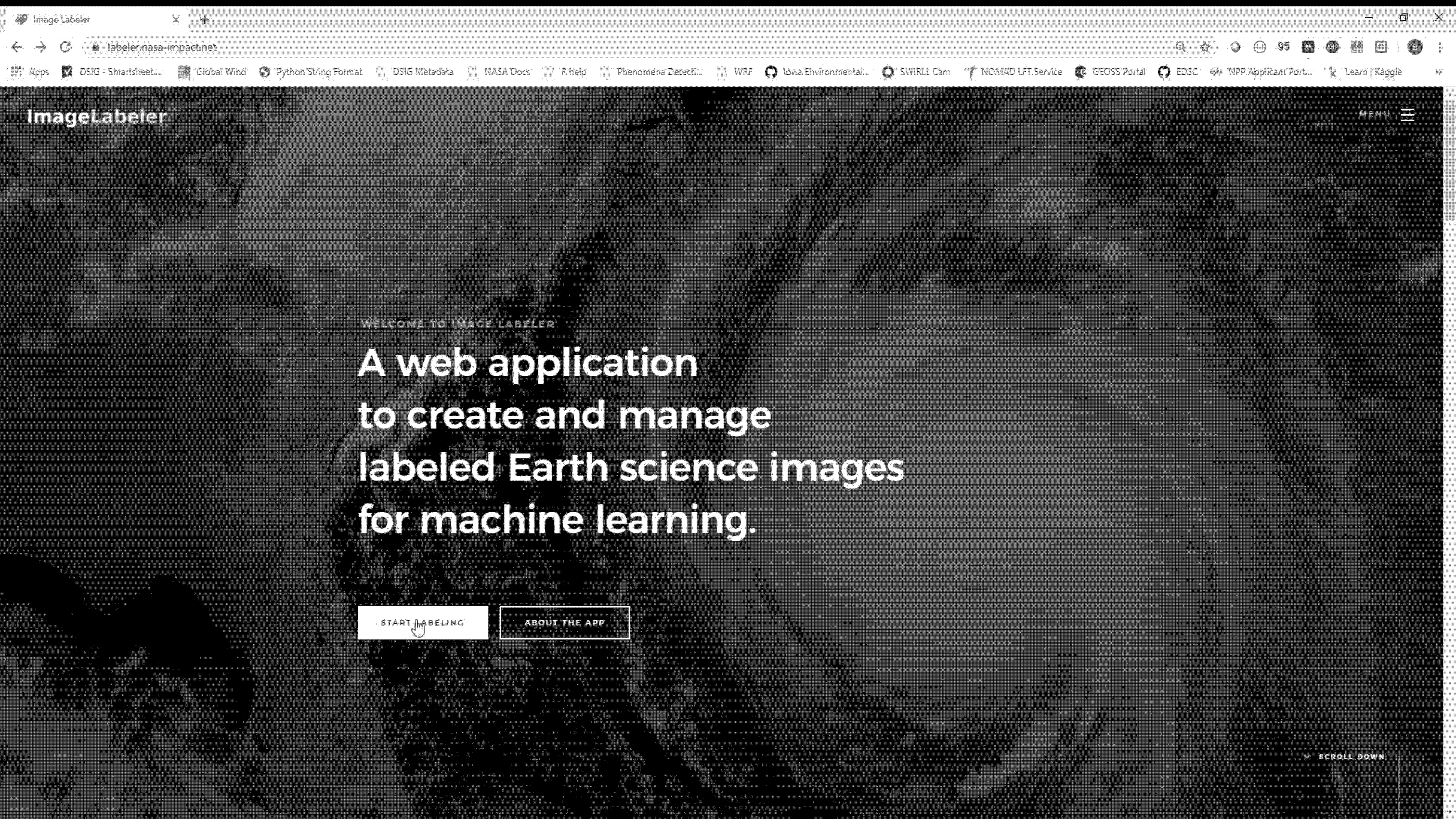
Model

Train | Evaluate | Optimize

Production System

Deploy | Optimize | Monitor



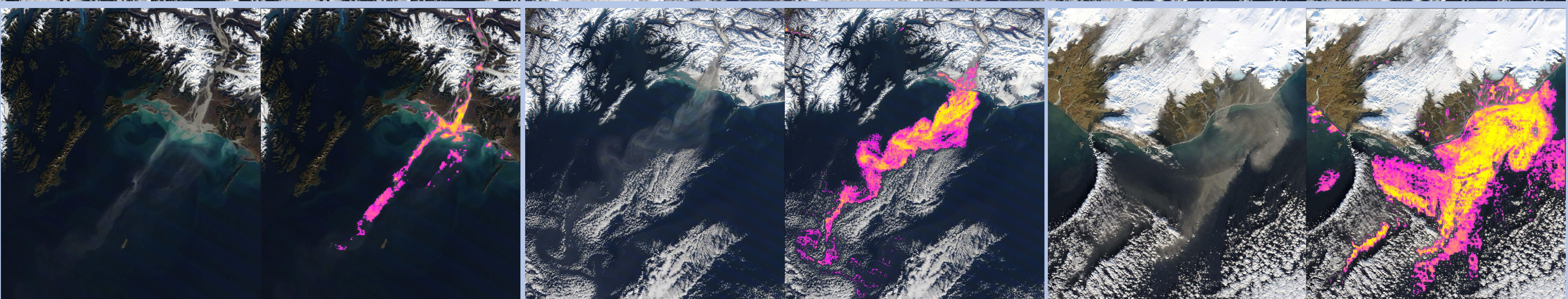
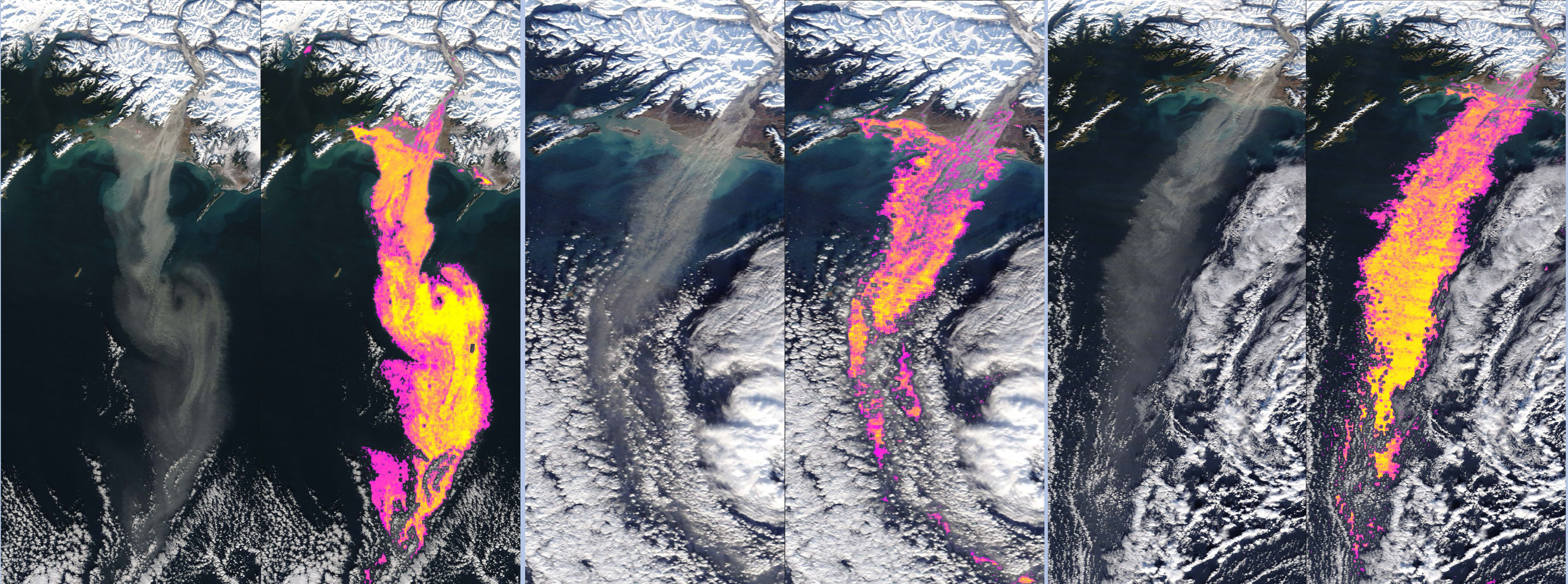


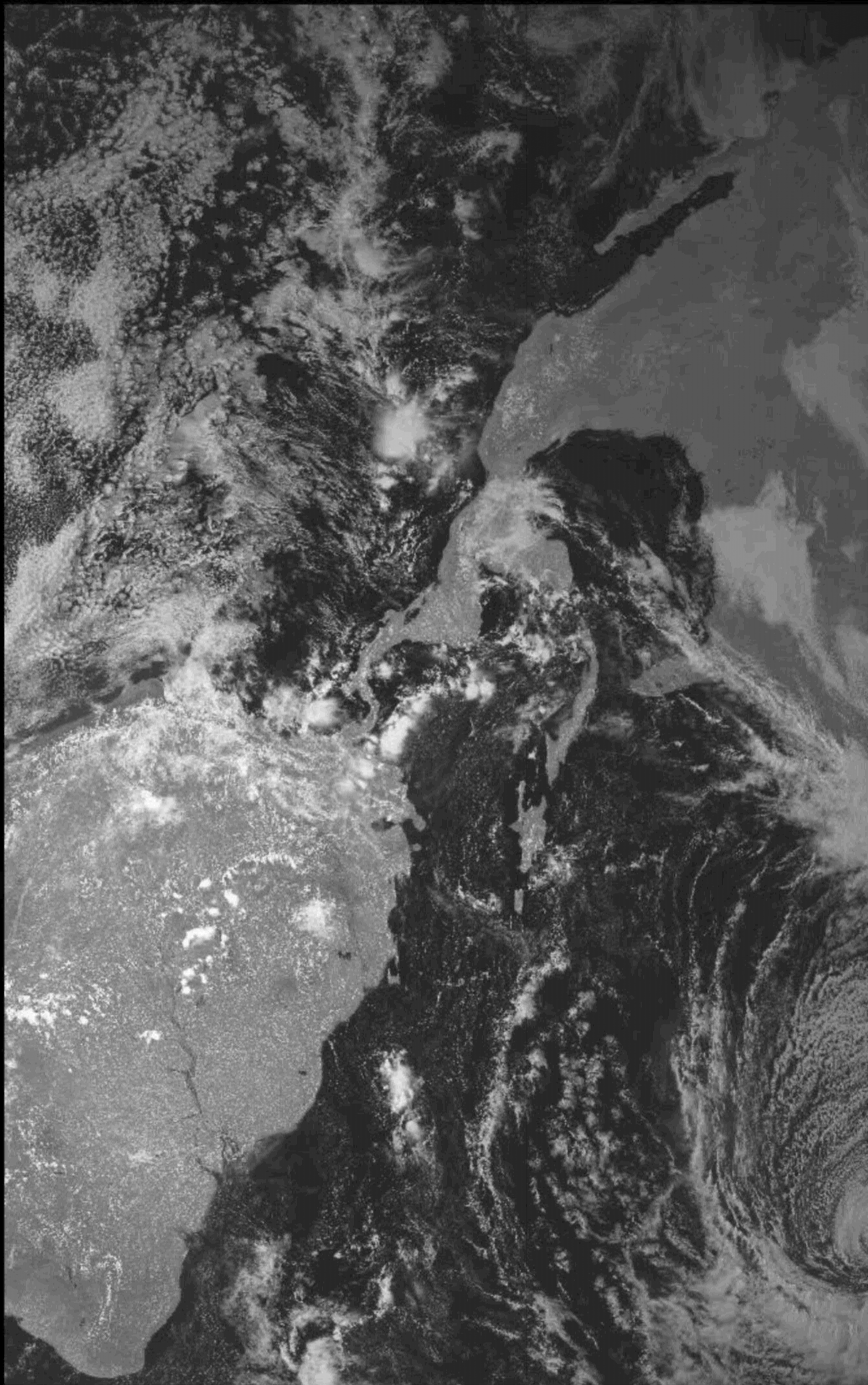
WELCOME TO IMAGE LABELER

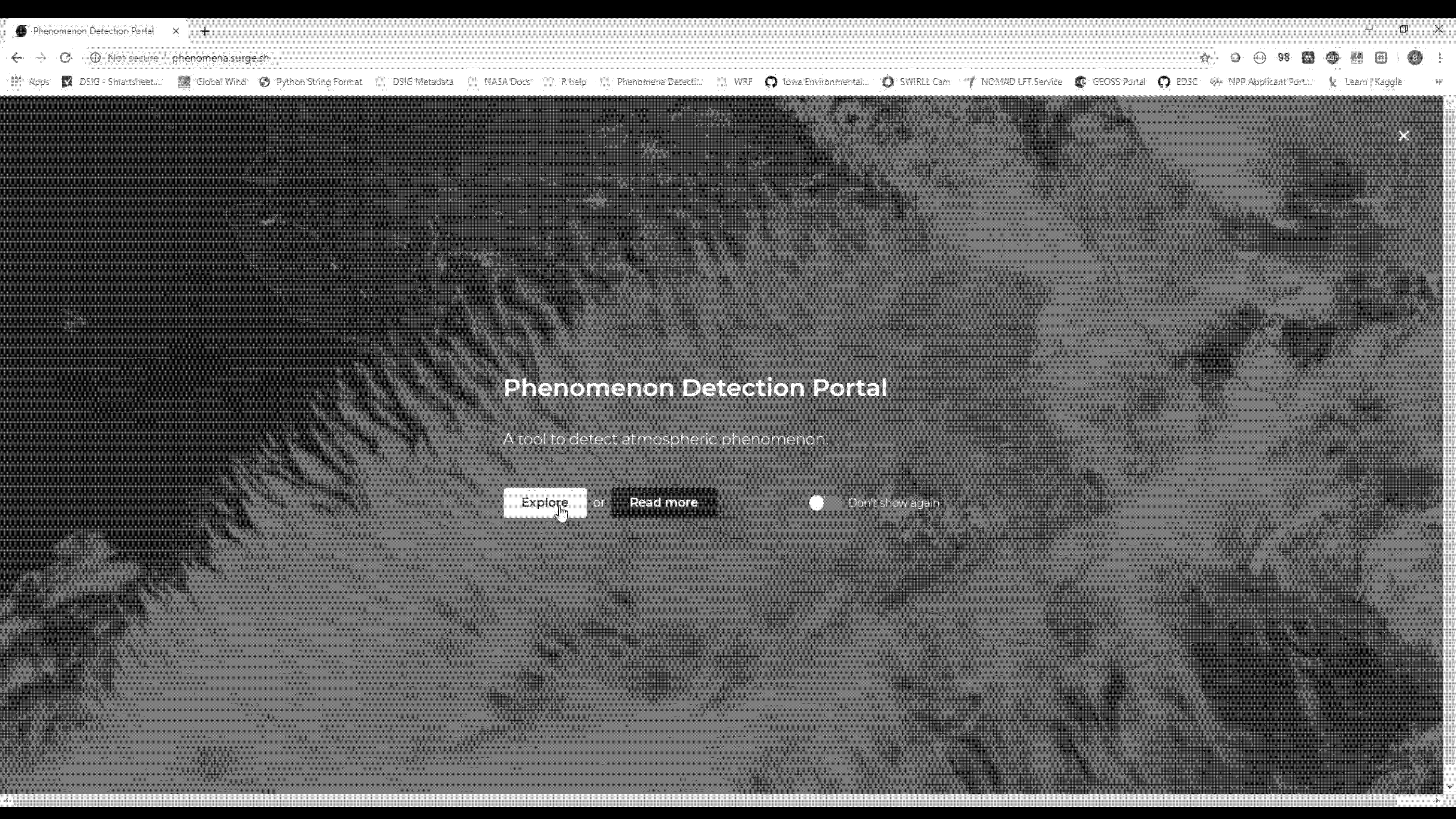
A web application
to create and manage
labeled Earth science images
for machine learning.

START LABELING

ABOUT THE APP







Phenomenon Detection Portal

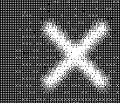
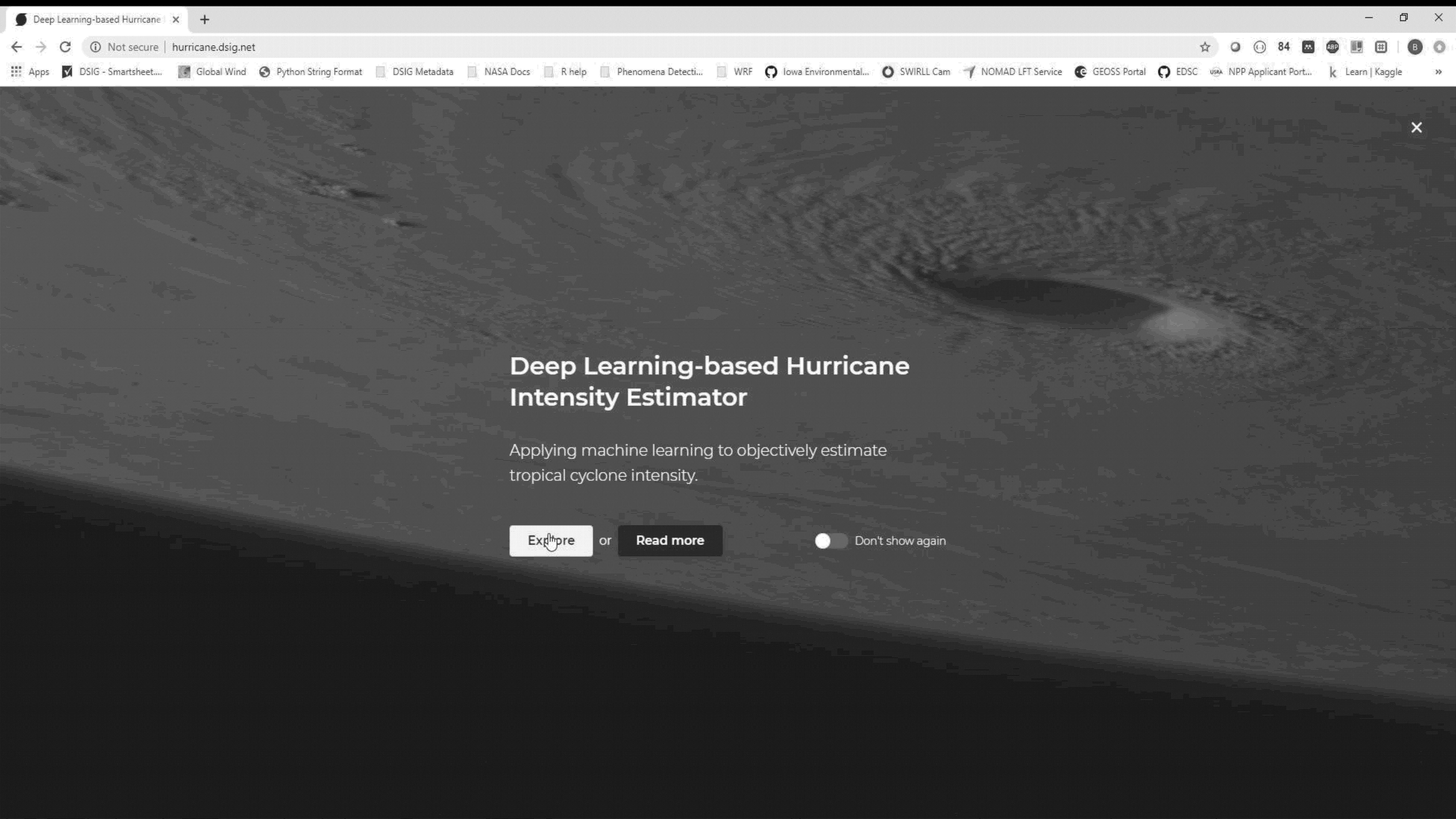
A tool to detect atmospheric phenomenon.

Explore

 or

Read more

☐ Don't show again



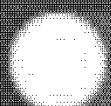
Deep Learning-based Hurricane Intensity Estimator

Applying machine learning to objectively estimate tropical cyclone intensity.

Explore

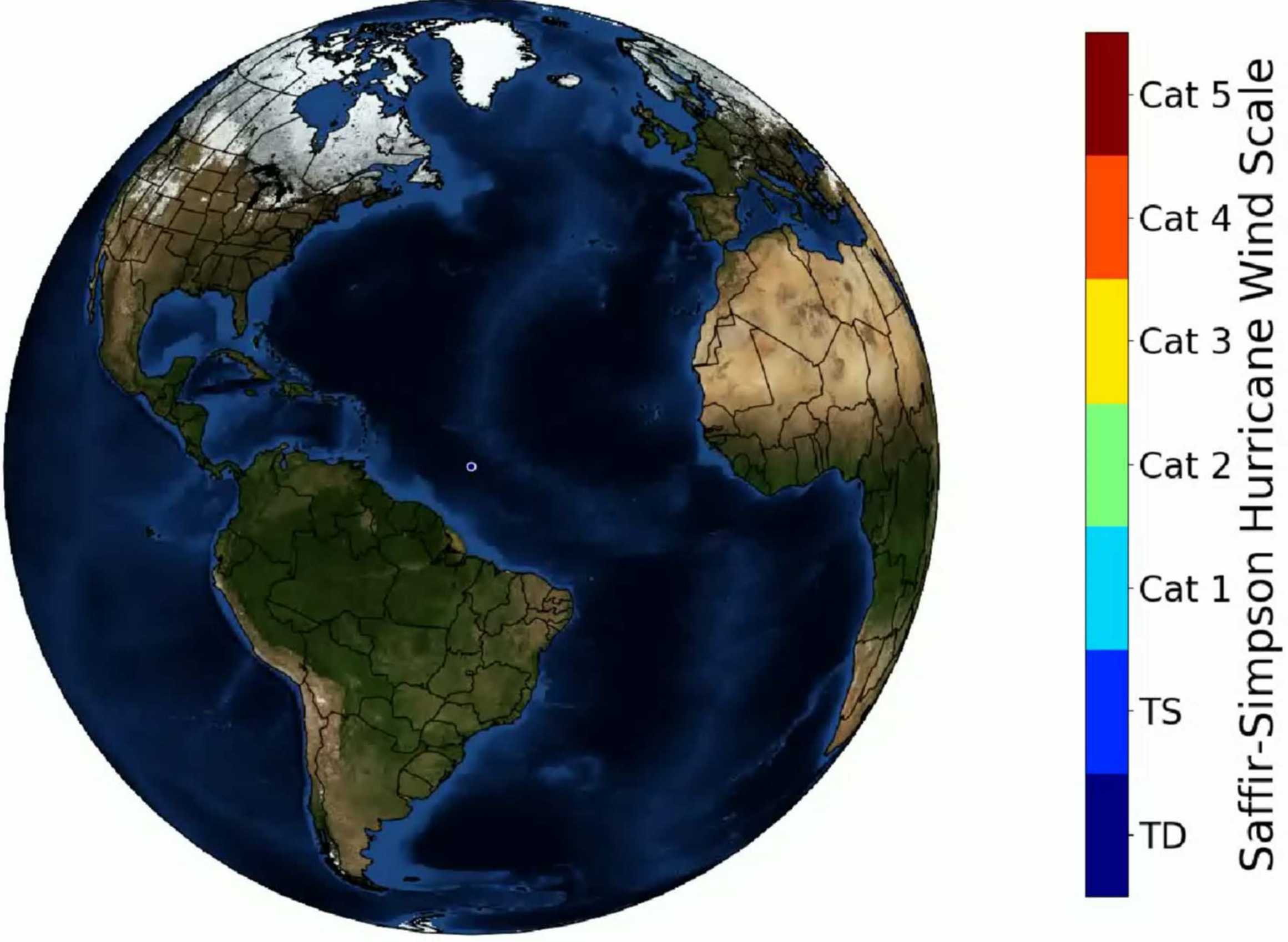
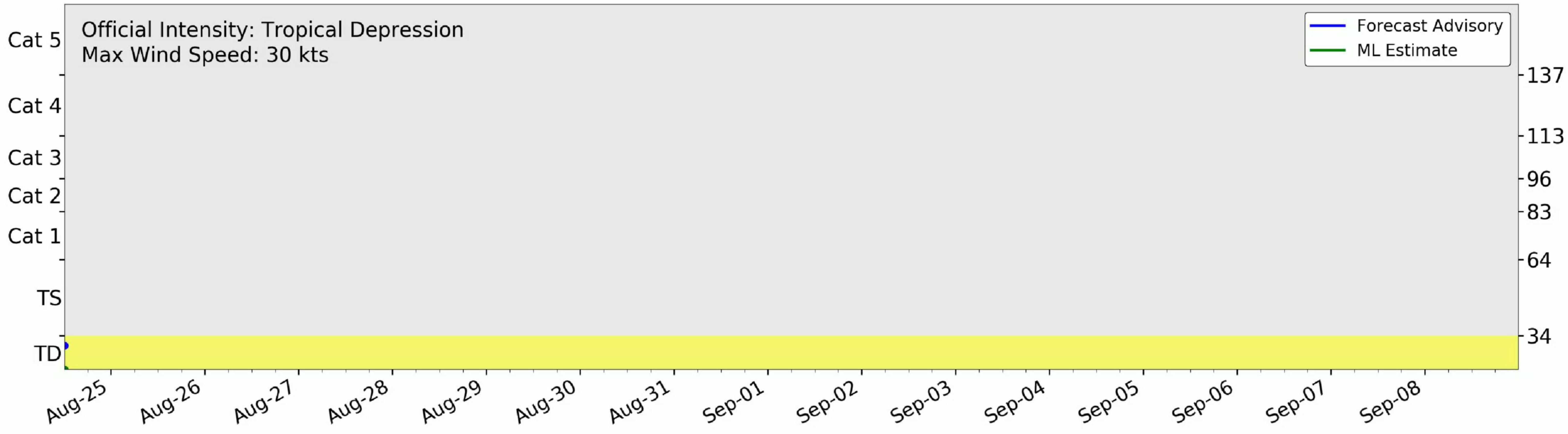
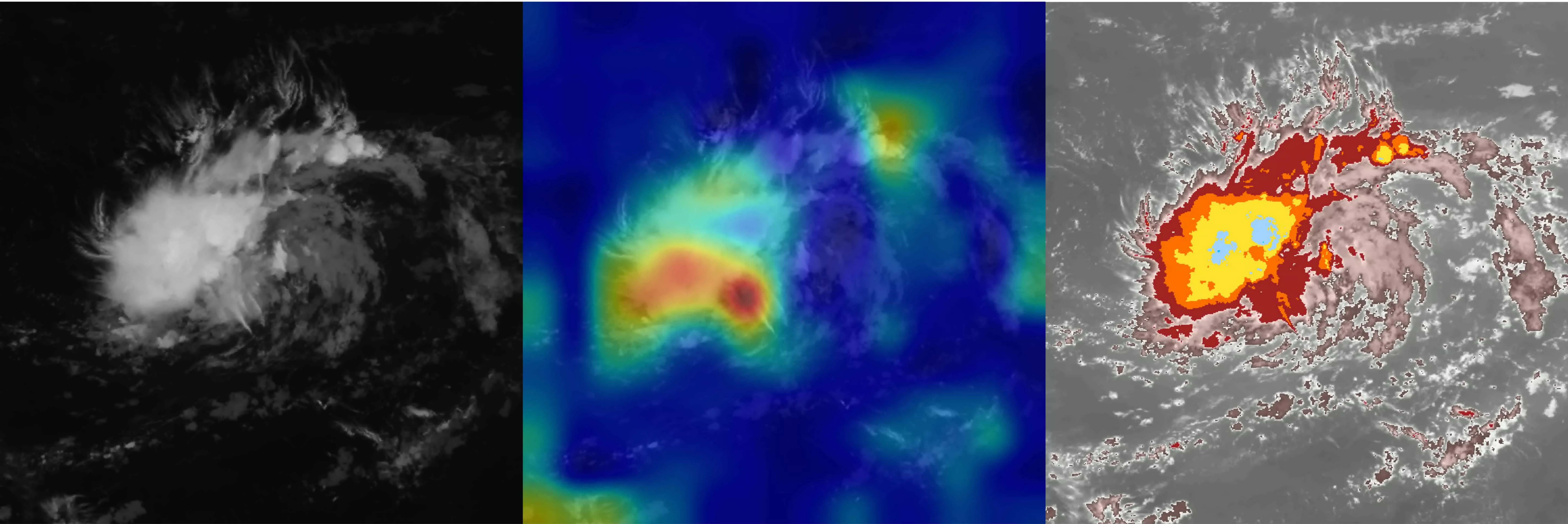
or

Read more



Don't show again

Hurricane Dorian



Contact Information

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Image Labeler: labeler.nasa-impact.net

Phenomena Portal: phenomena.surge.sh

Tropical Cyclone Intensity Portal: hurricane.dsig.net

