

# Image Labeler: A Web Interface to Catalog Earth Science Events



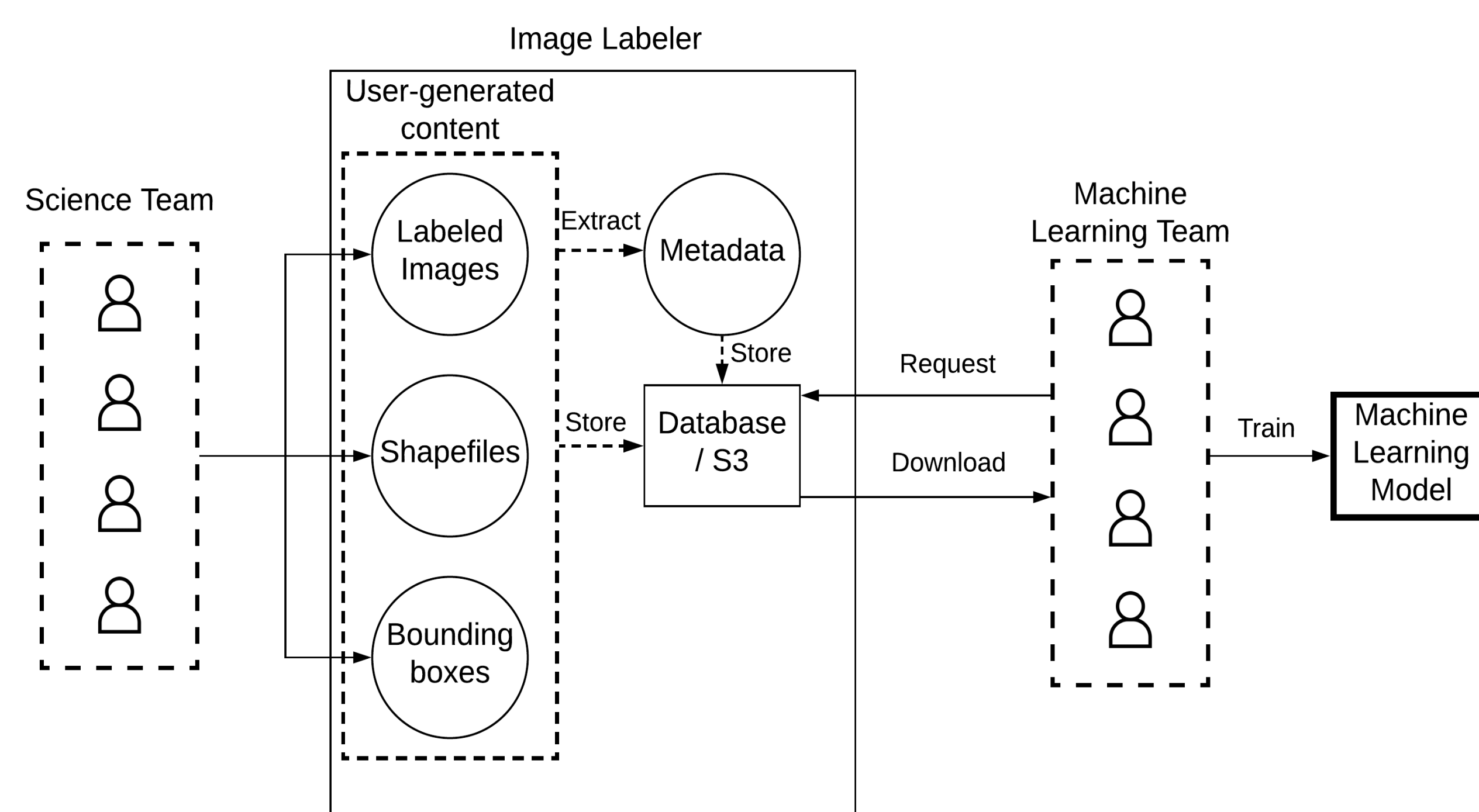
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## Introduction

Advances in machine learning (ML) have made it possible to automatically detect Earth science phenomena from satellite imagery. While useful, ML algorithms typically require an extensive dataset containing labeled images for training. Systematic labeling and management of such datasets is quite cumbersome. With this in mind, we present the Image Labeler. Image Labeler is a fast and scalable cloud-based tool that facilitates the rapid development of Earth science event databases, in order to aid automated ML-based image classification.

## Overview

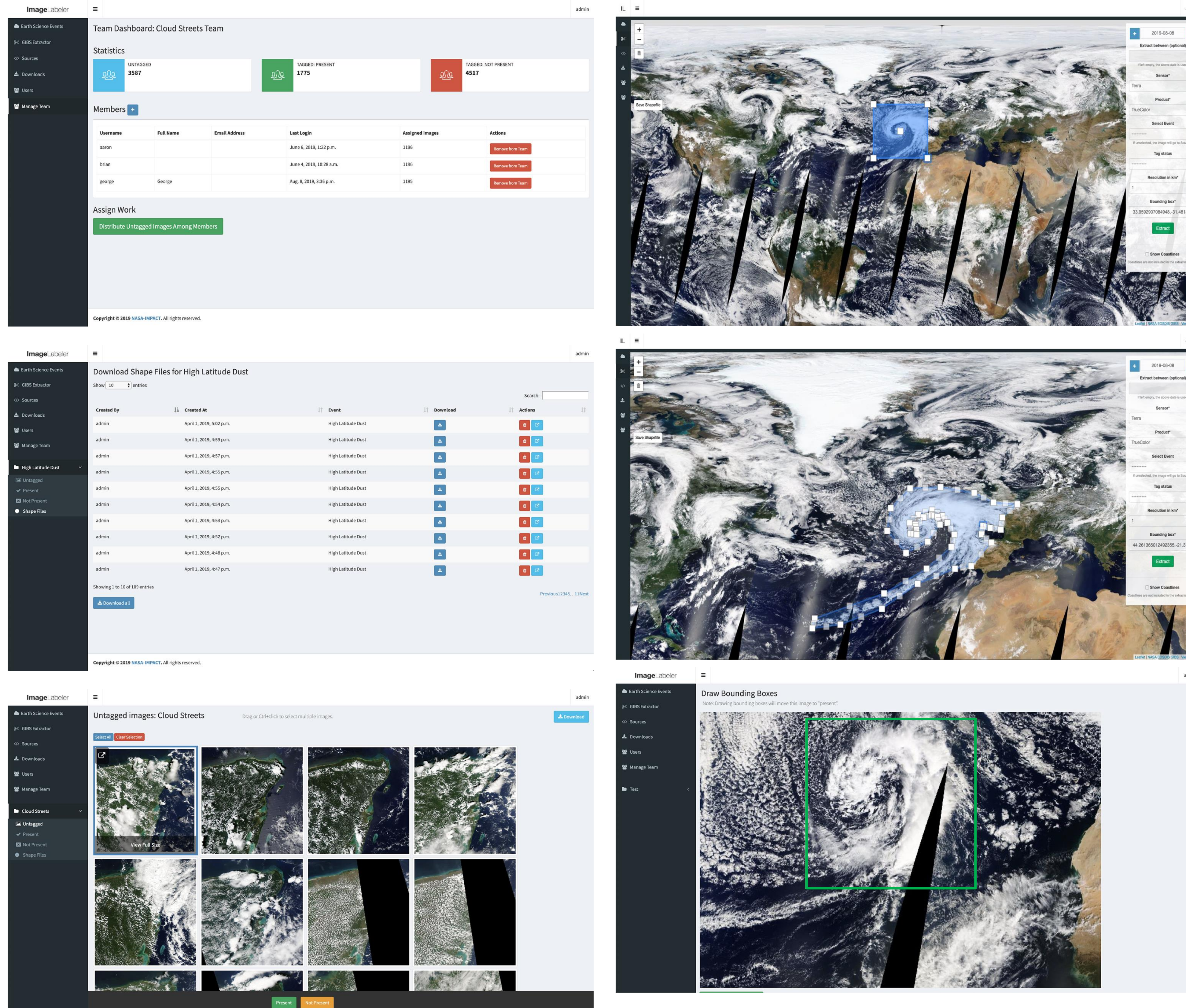


## Data Formats

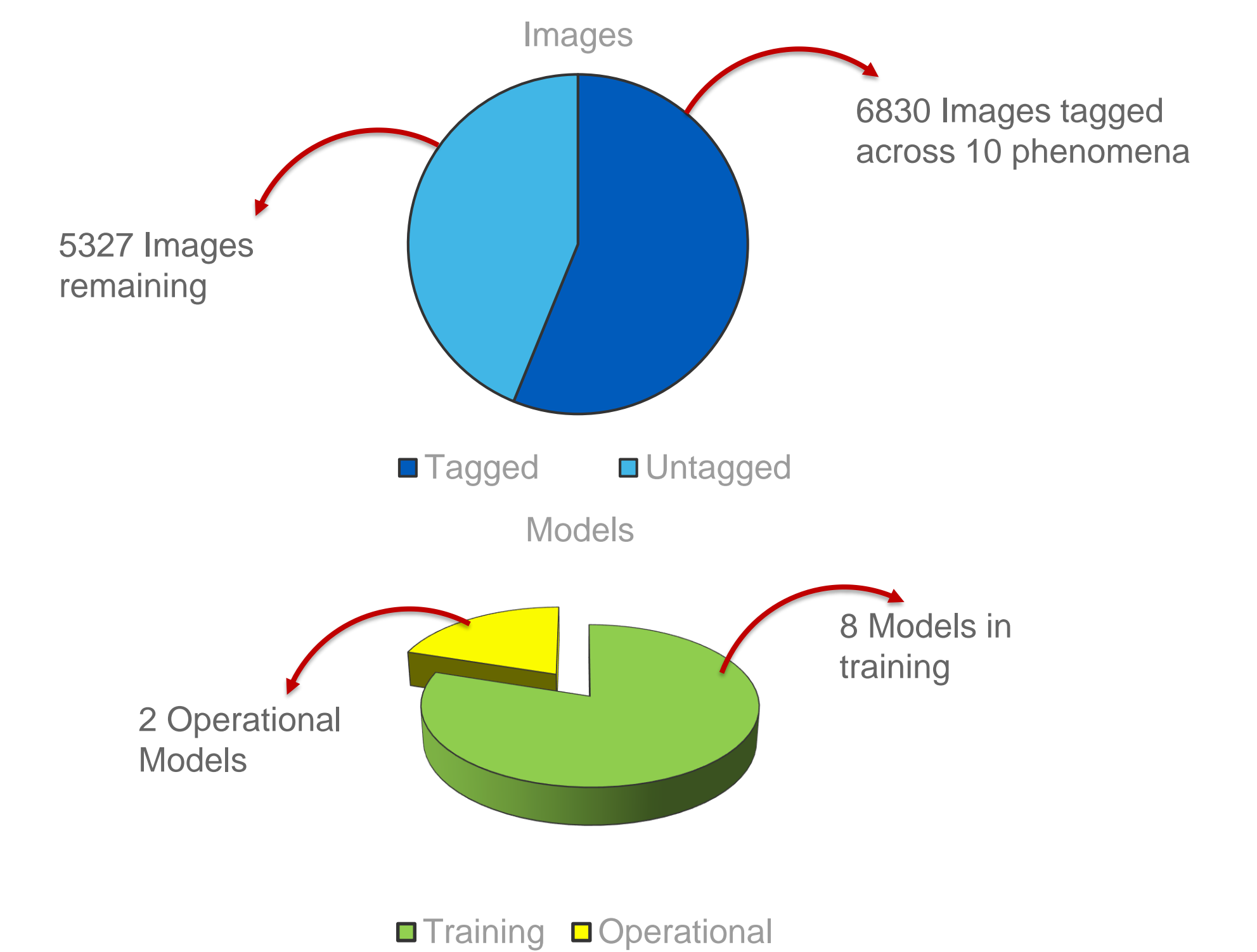


## Key Features

1. Upload tagged/untagged images
2. Collaborative image labeling
3. Integrate NASA web services for rapid analysis of satellite images
4. Shapefile and bounding box capability for image segmentation
5. Machine learning ready datasets for rapid deployment



## Usage Statistics



## Conclusion

1. Labeling, processing, managing, and storing multiple sources of data is complex
2. Image Labeler facilitates creation of labeled Earth science training databases
3. Datasets are managed in the cloud for better distribution, scalability, and maintainability

## Future Work

1. Include other datasets (GOES-R, Landsat, Sentinel etc.)
2. Live update for collaboration
3. Metadata centric labeling
4. Login with Earthdata account
5. Versioning of data for training/testing result reproducibility

<https://labeler.nasa-impact.net/>

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