



## Early Himawari Results Using the AER Algorithm Workbench

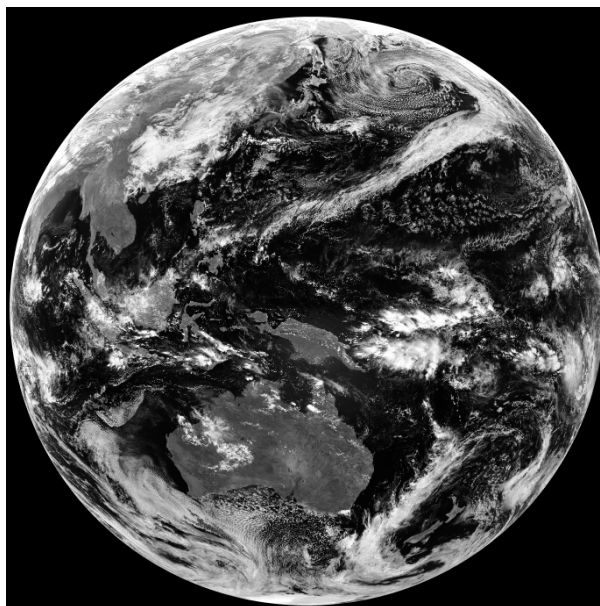
*A flexible, multi-mission algorithm  
development, test and production  
environment*

### Testing the GOES-R Algorithms with Advanced Himawari Imager

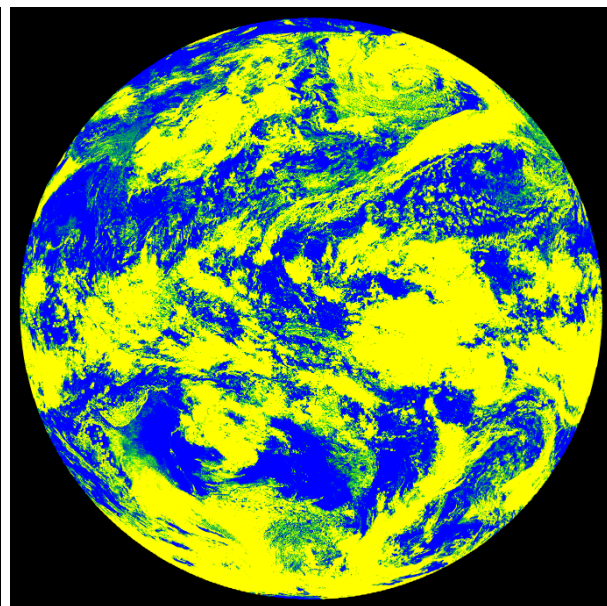
Using the AER Algorithm Workbench, the operational GOES-R algorithms have been executed, without any code changes, on newly-released Himawari AHI data. By maintaining the same code base across multiple missions, algorithm improvements can be rapidly shared with users across the globe. To prepare the algorithms for run, a mapping was created from the AHI (Himawari) channels to ABI (GOES-R) channels, and provided as an input to the Algorithm Workbench. In addition, semi-static and ancillary inputs (NWP, Reynolds global SST, snow masks, etc.) were prepared for the associated observation times and sub-satellite position.

### AHI Results

The GOES-R integrated cloud algorithm suite was applied to early AHI images from January 25, 2015 at 0230Z to produce a cloud mask, cloud phase, and cloud top temperature.

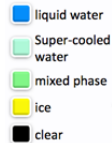
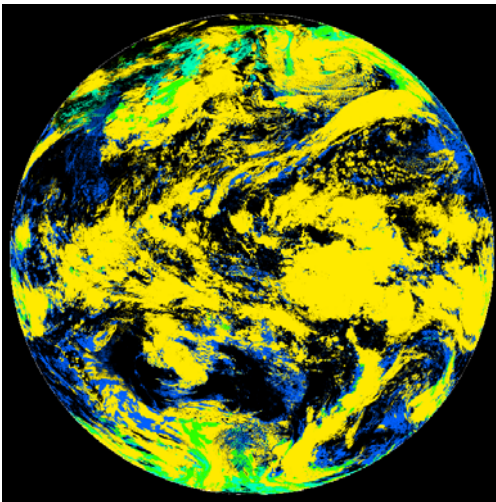


AHI Band 4 (0.86  $\mu\text{m}$ ) Reflectances

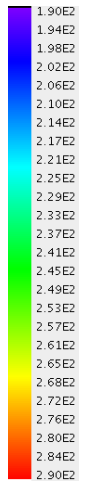
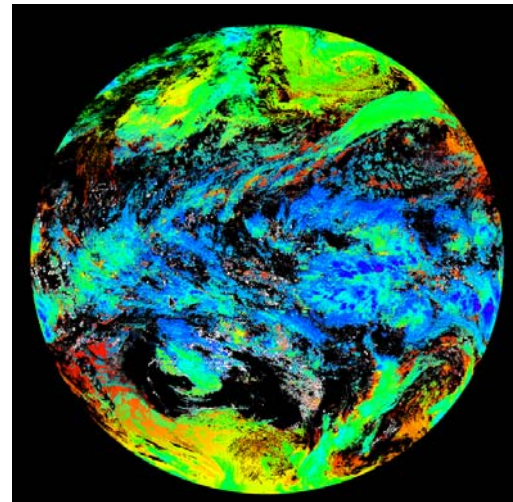


Cloud Mask

## AHI Results

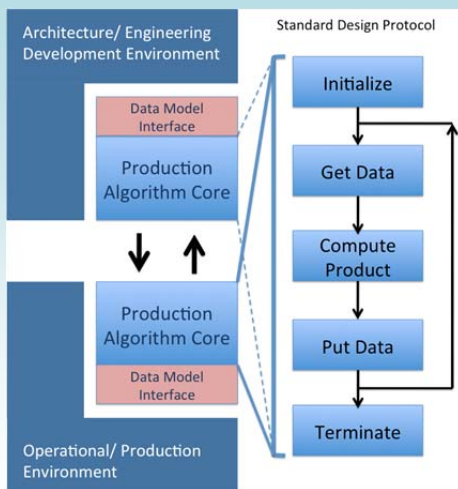


Cloud Phase



Cloud Top Temperature

## The Algorithm Workbench Concept



### Features & Benefits

**Standard Design Protocols**– structured methods for algorithm design and implementation

- ✓ Speeds up development and migration
- ✓ Allows for algorithm “buy-back”

**Data Model Interface** – standard APIs for sensor and meta-data access

- ✓ Insulates algorithm from underlying data formats and physical environment
- ✓ Allows for seamless sharing of test data across development and operational environments

**Algorithm Descriptor Database** – programmatically-accessible database of algorithm and data characteristics

- ✓ Allows automated generation of algorithm trees
- ✓ Provides interfaces for algorithmic analysis of processing systems, and machine generation of program-specific documentation

## About Atmospheric and Environmental Research

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