

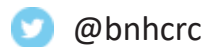
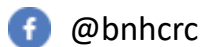
Performance of fire detection algorithms using Himawari-8

AFAC/ 2018

Dr Chermelle Engel/ RMIT University, Bushfire and Natural Hazards CRC.

Prof Simon Jones / RMIT University, Bushfire and Natural Hazards CRC.

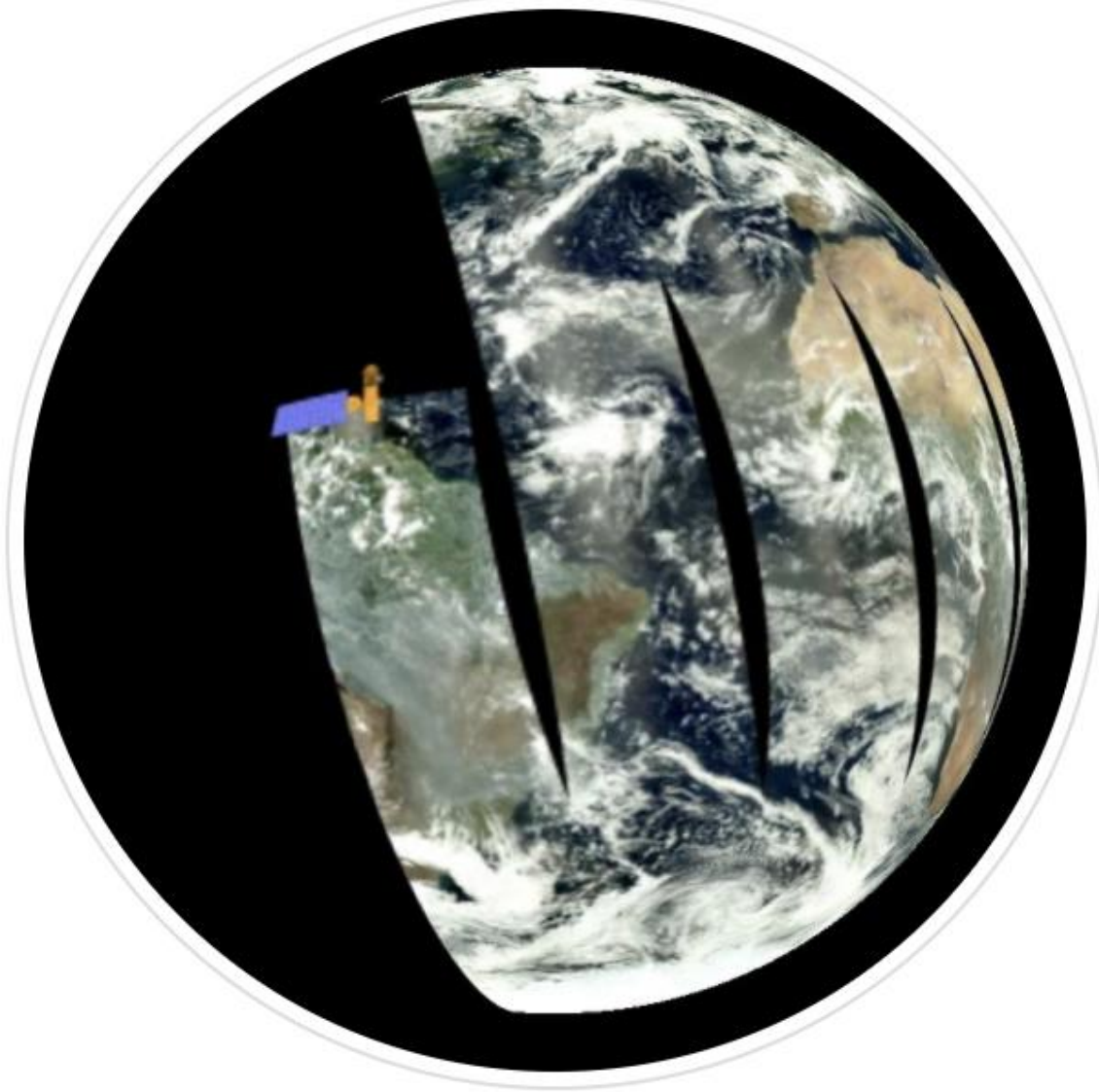
Dr Karin Reinke / RMIT University, Bushfire and Natural Hazards CRC.



Australian Government
Department of Industry,
Innovation and Science

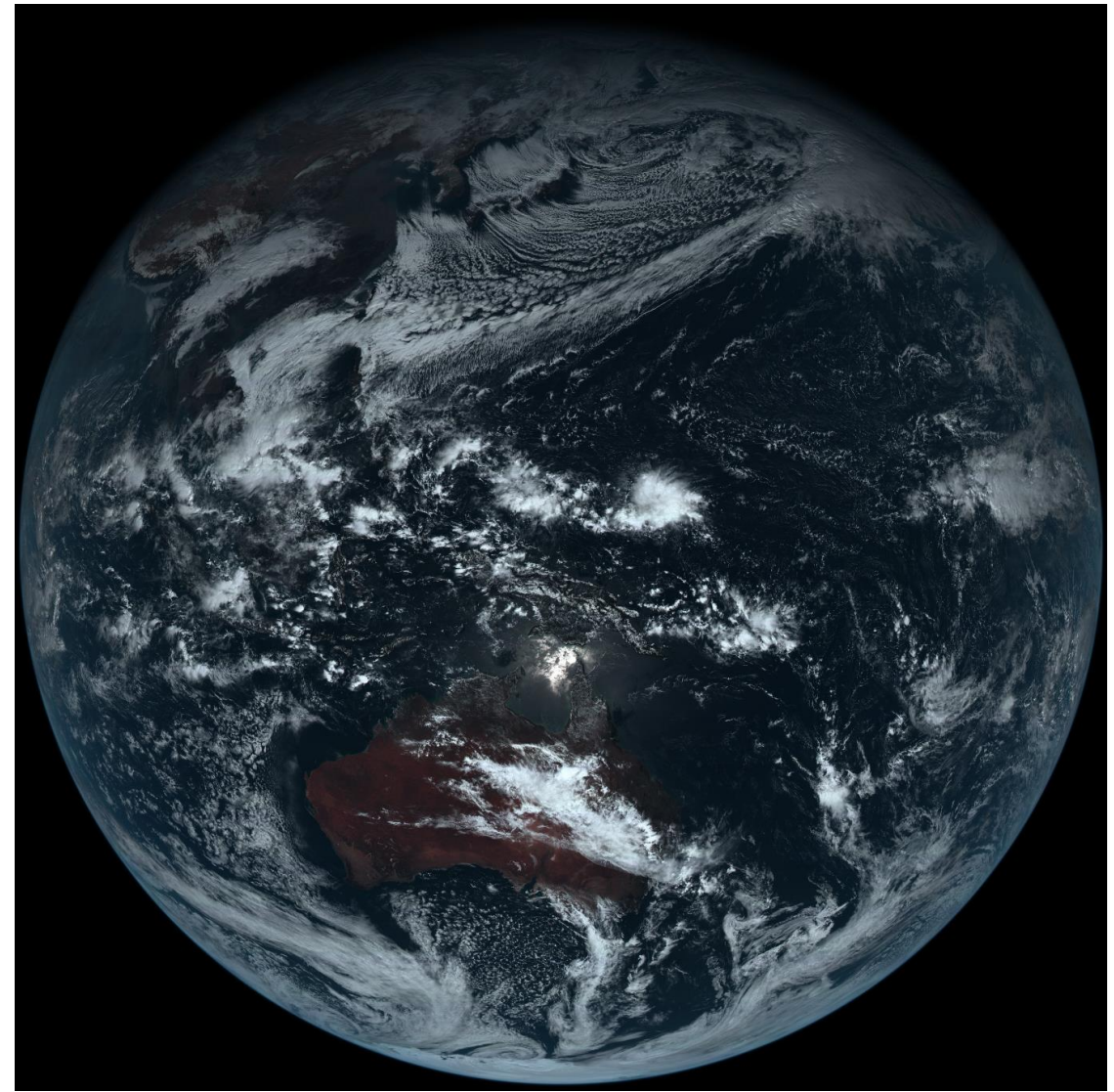
Business
Cooperative Research
Centres Programme

Polar-Orbiting



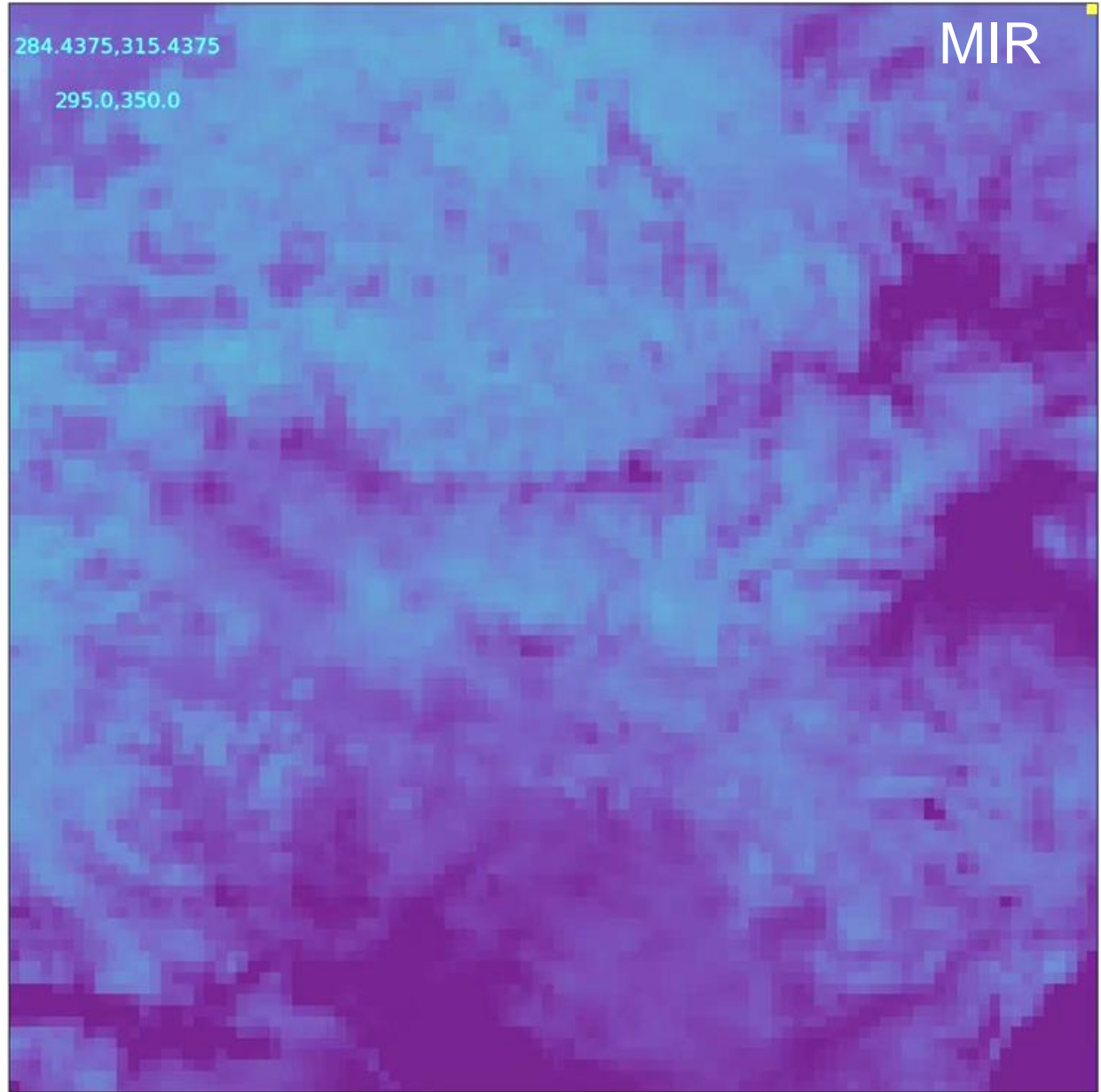
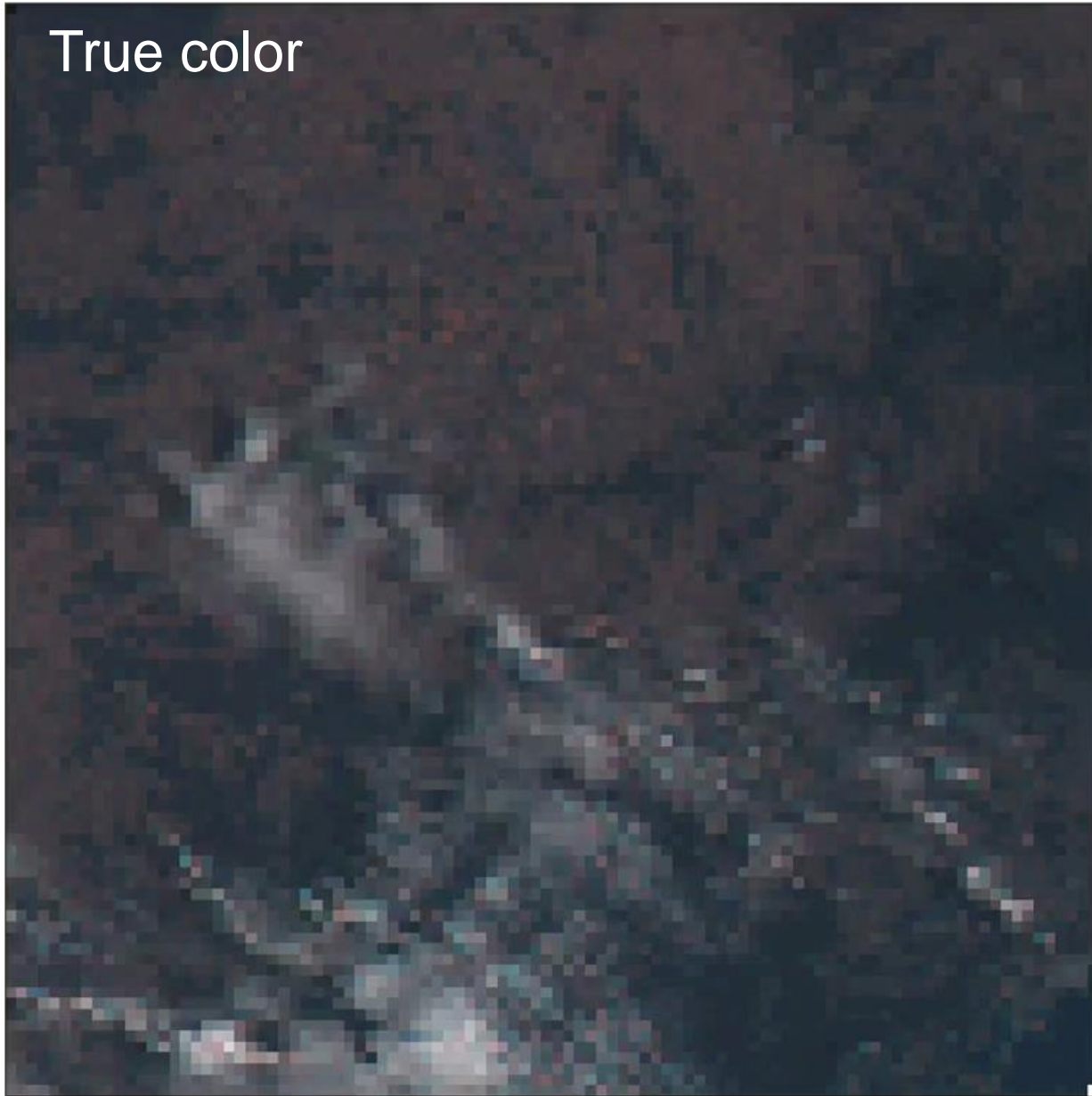
Source: NOAA Science on a Sphere website
<https://sos.noaa.gov/>

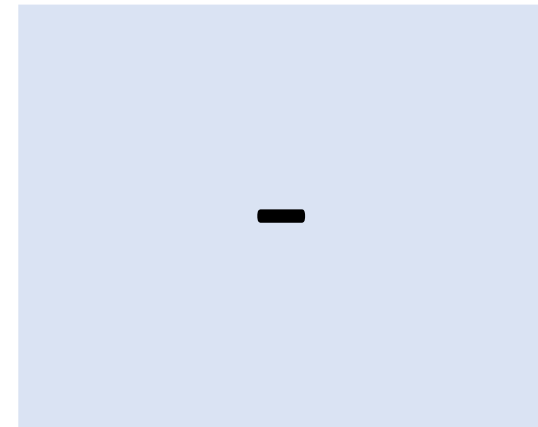
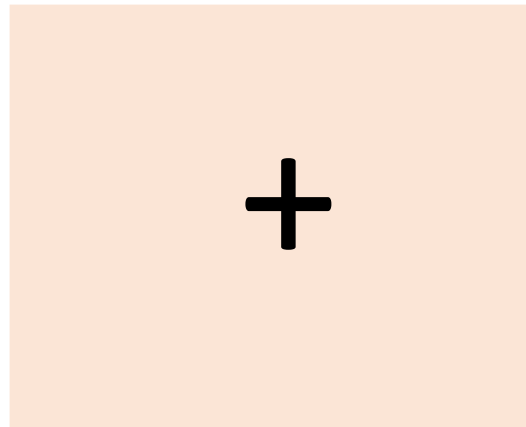
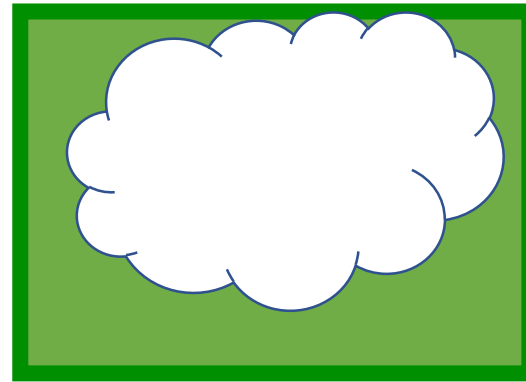
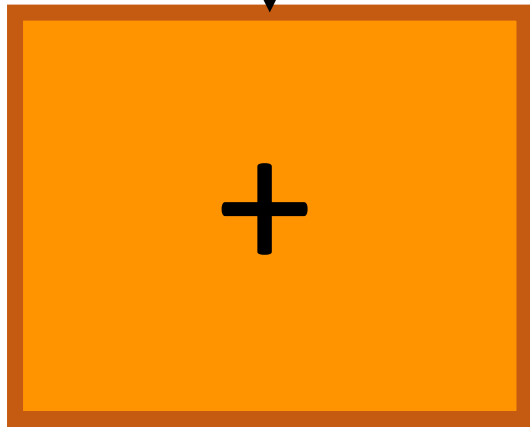
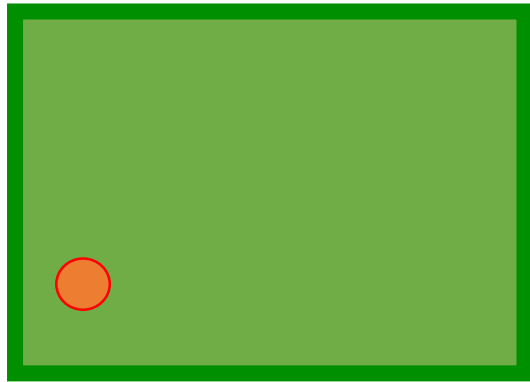
Geostationary

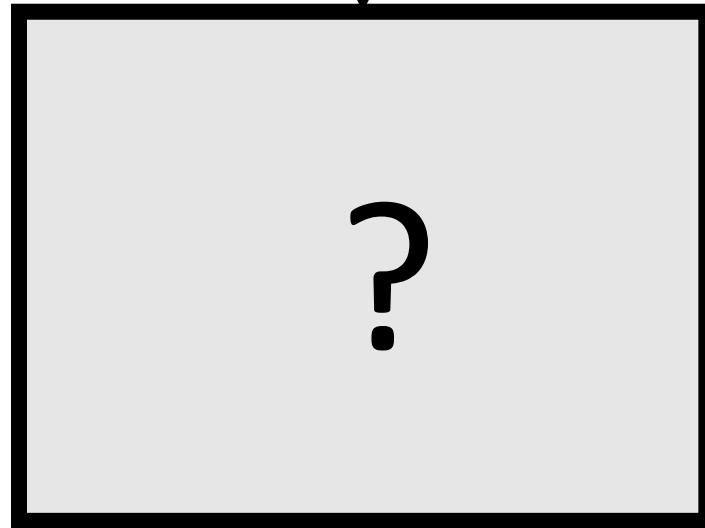
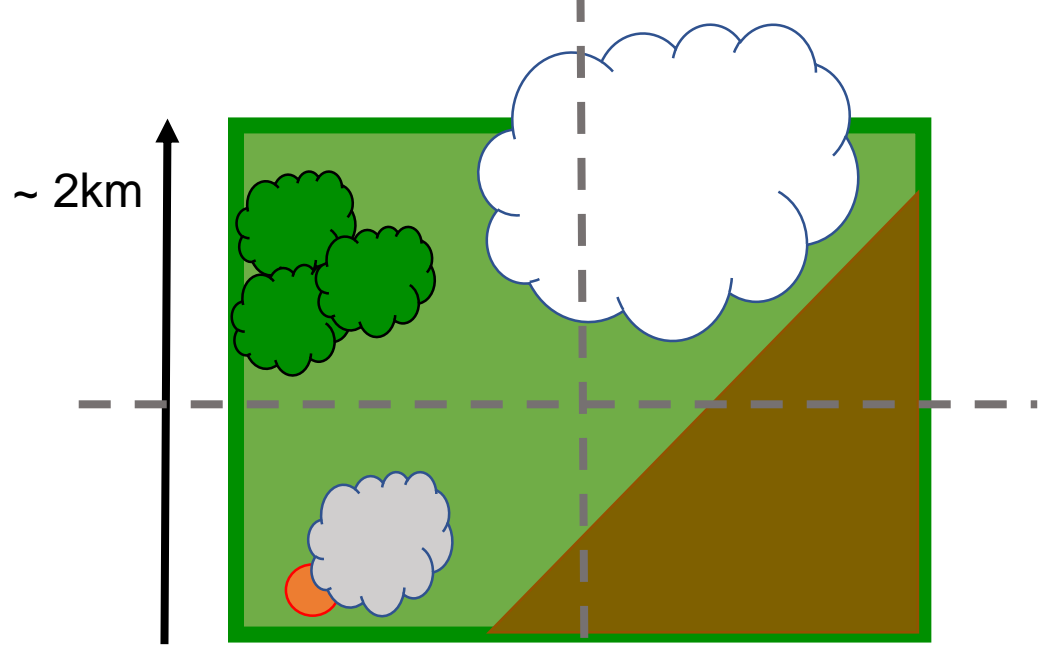
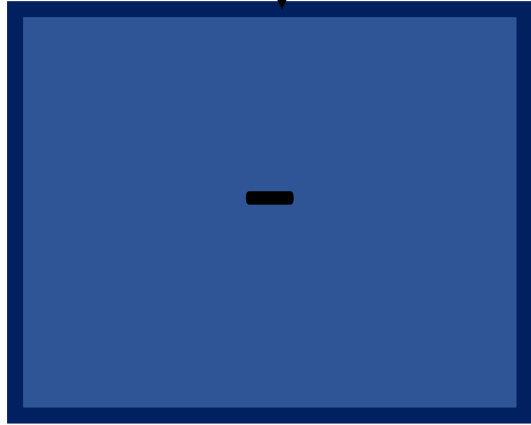
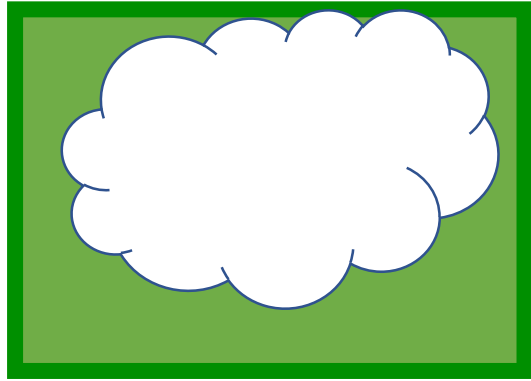


Source: Japan Meteorological Agency website
<http://www.jma-net.go.jp>

True color

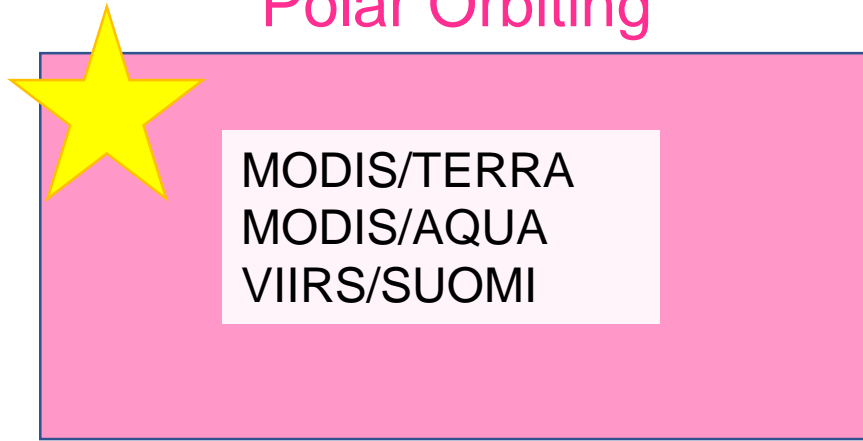






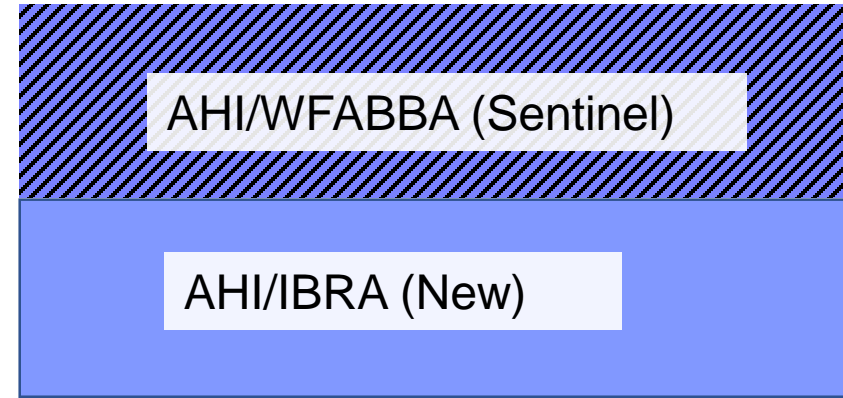
GA Sentinel

Polar Orbiting



Once a day between
0000 UTC and 0610 UTC

Himawari-8



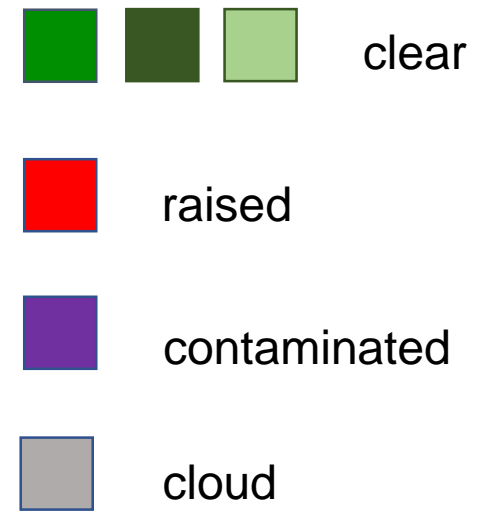
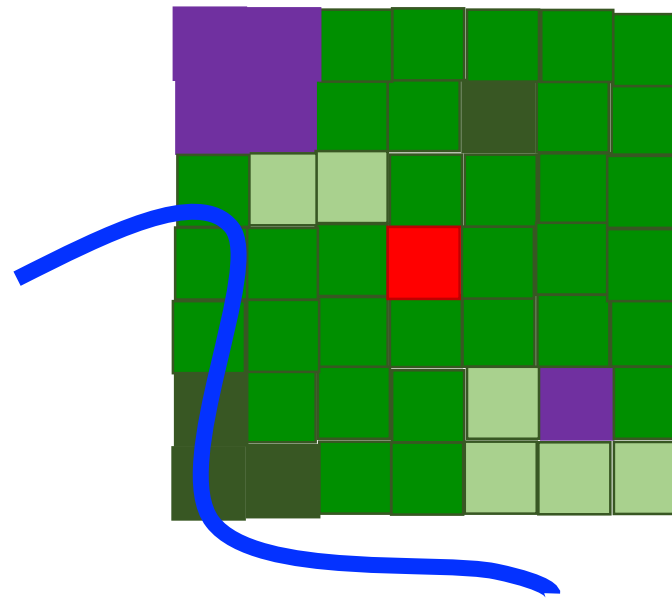
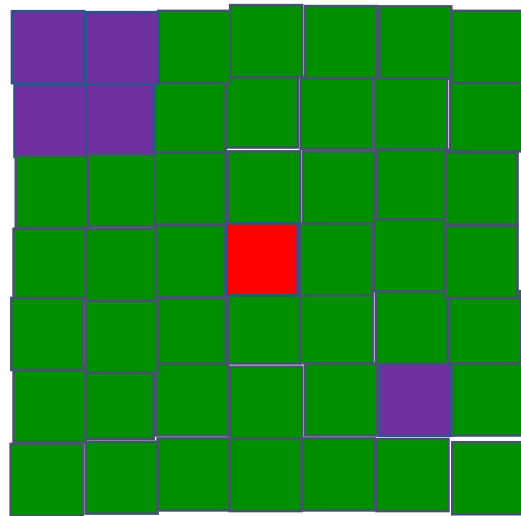
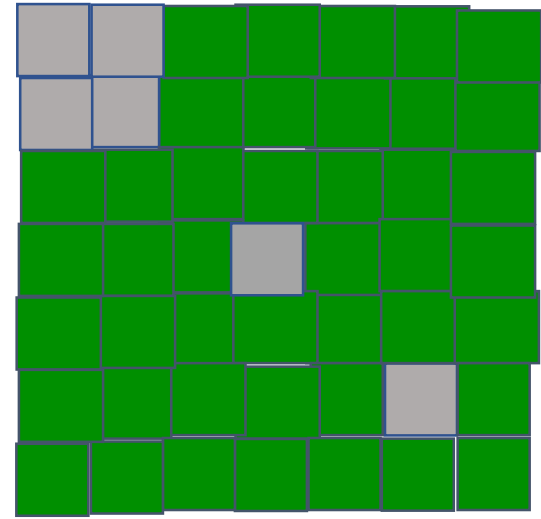
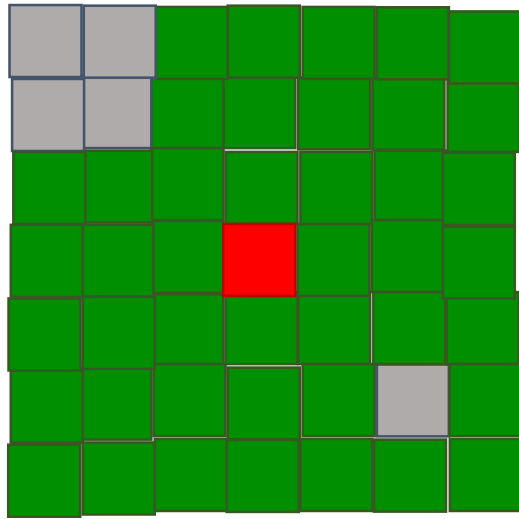
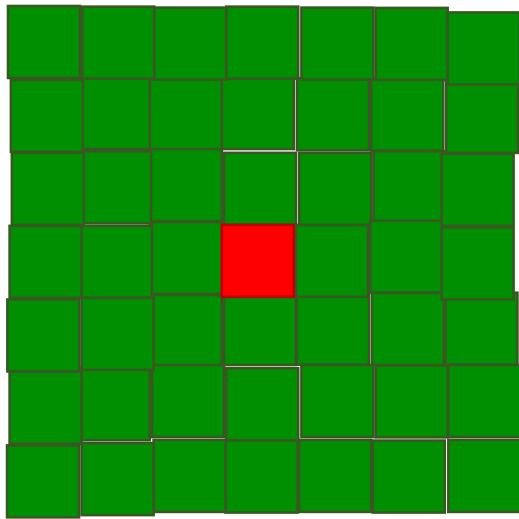
Every 10 minutes between
0000 UTC to 0610 UTC

1st December 2015

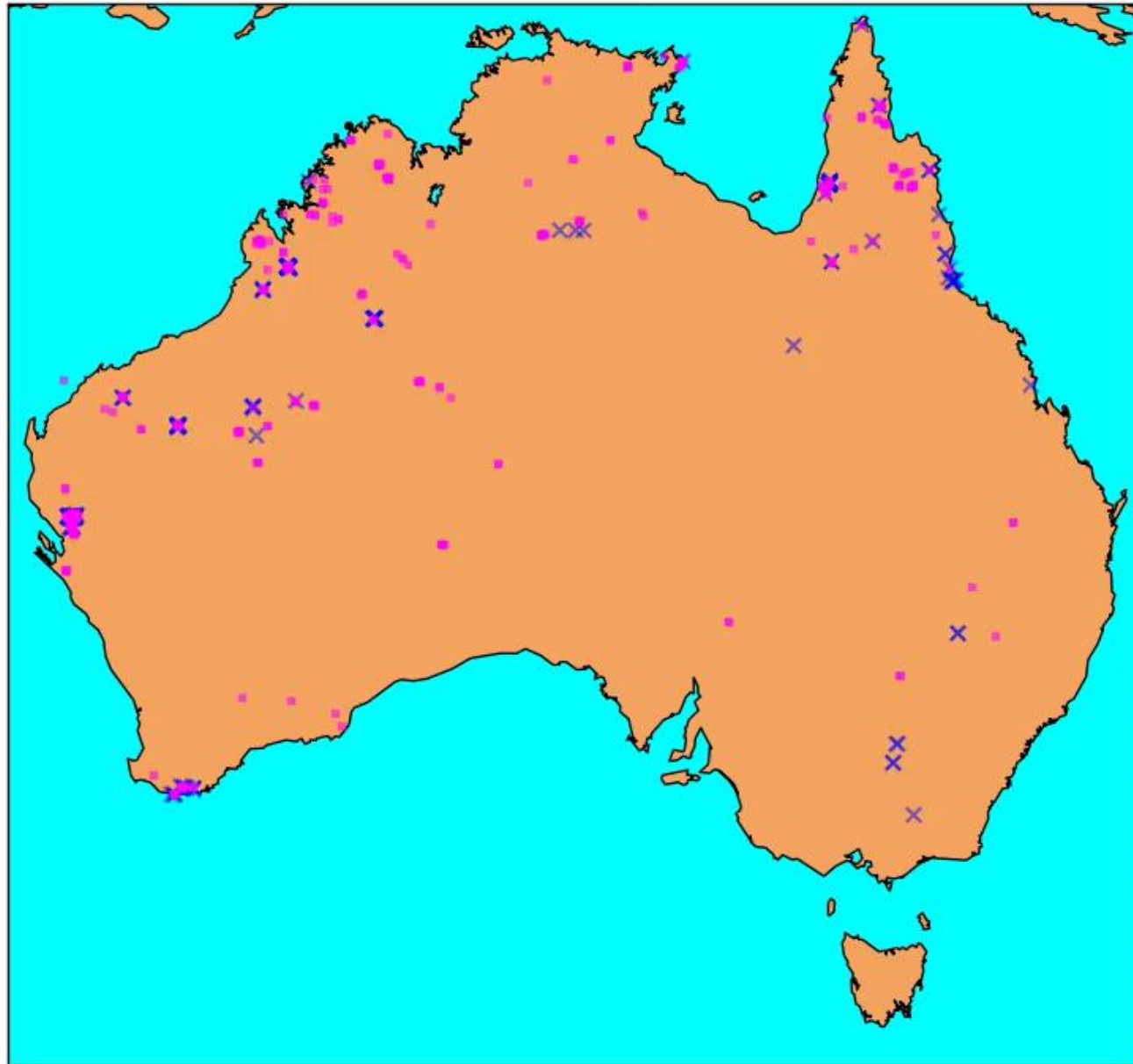
30st November 2016



8 sub-seasons



2015-12-02



Polar Orbiting

- MODIS/TERRA
- MODIS/AQUA
- VIIRS/SUOMI

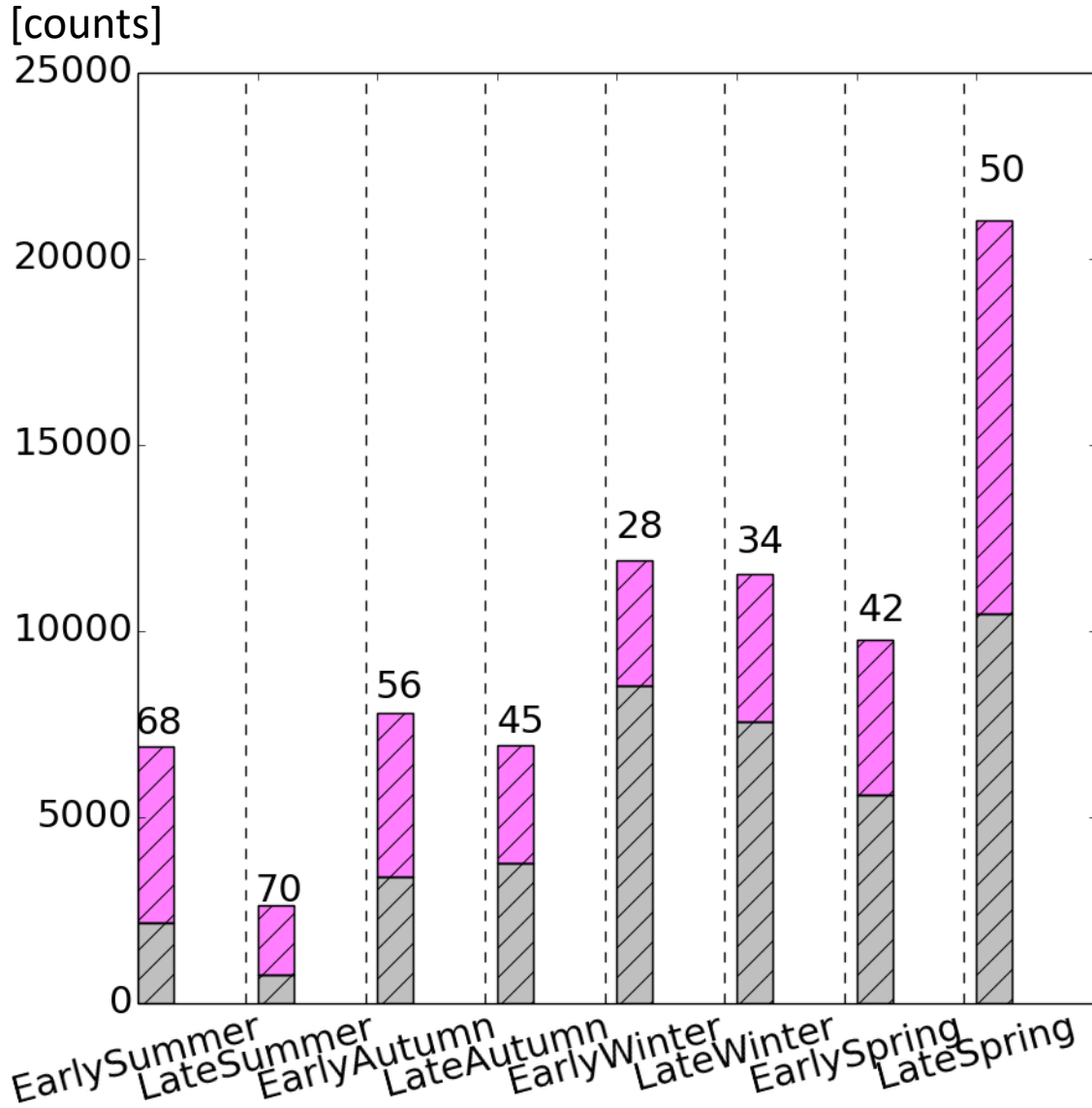
- X AHI/WFABBA
(Sentinel)

Re-projected onto
Himawari-8 grid.

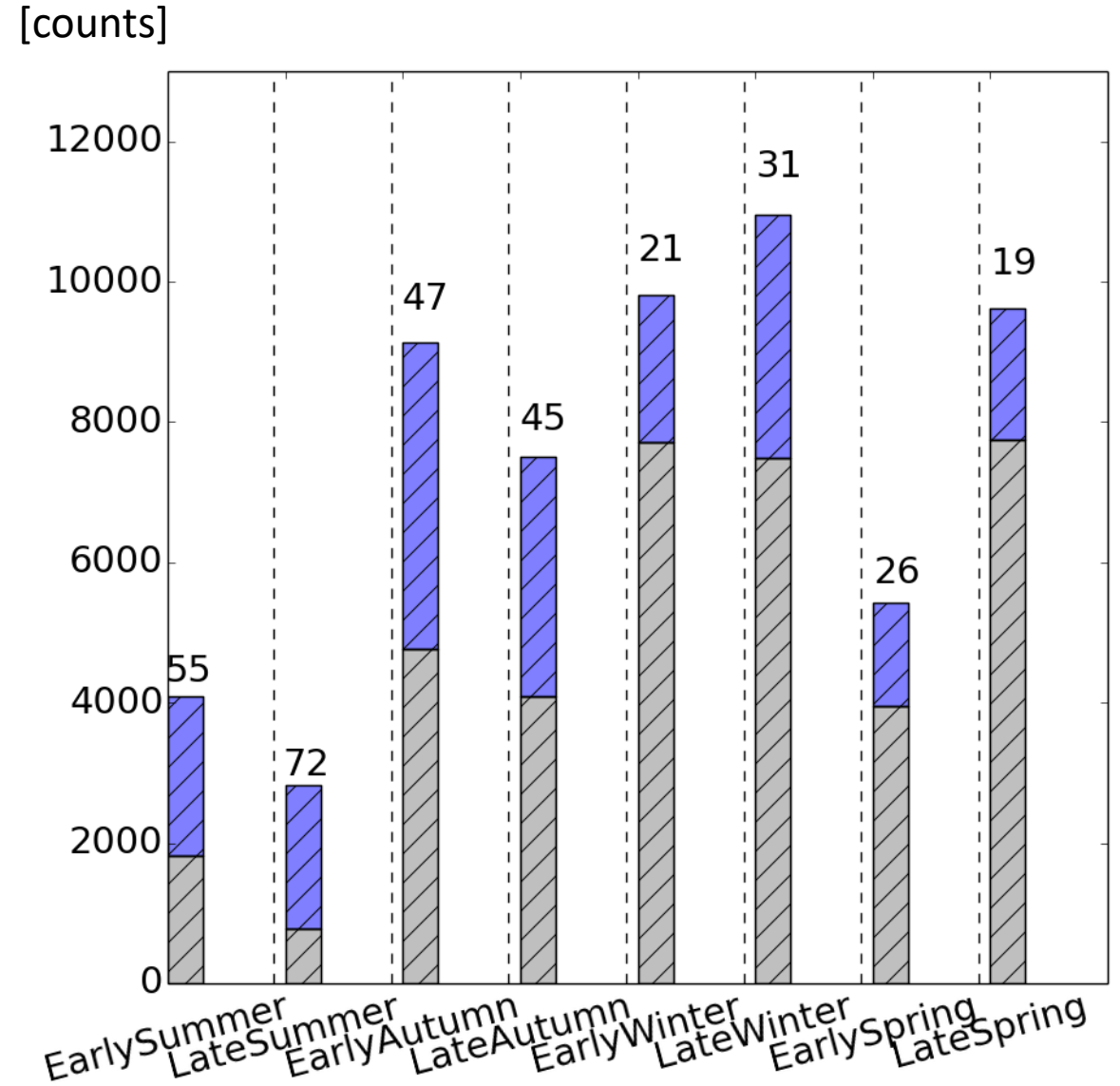
Pixel "on" if
hotspot at any time
between 0000 UTC
and 0610 UTC.



Polar Orbiting into AHI/WFABBA



AHI/WFABBA into Polar Orbiting



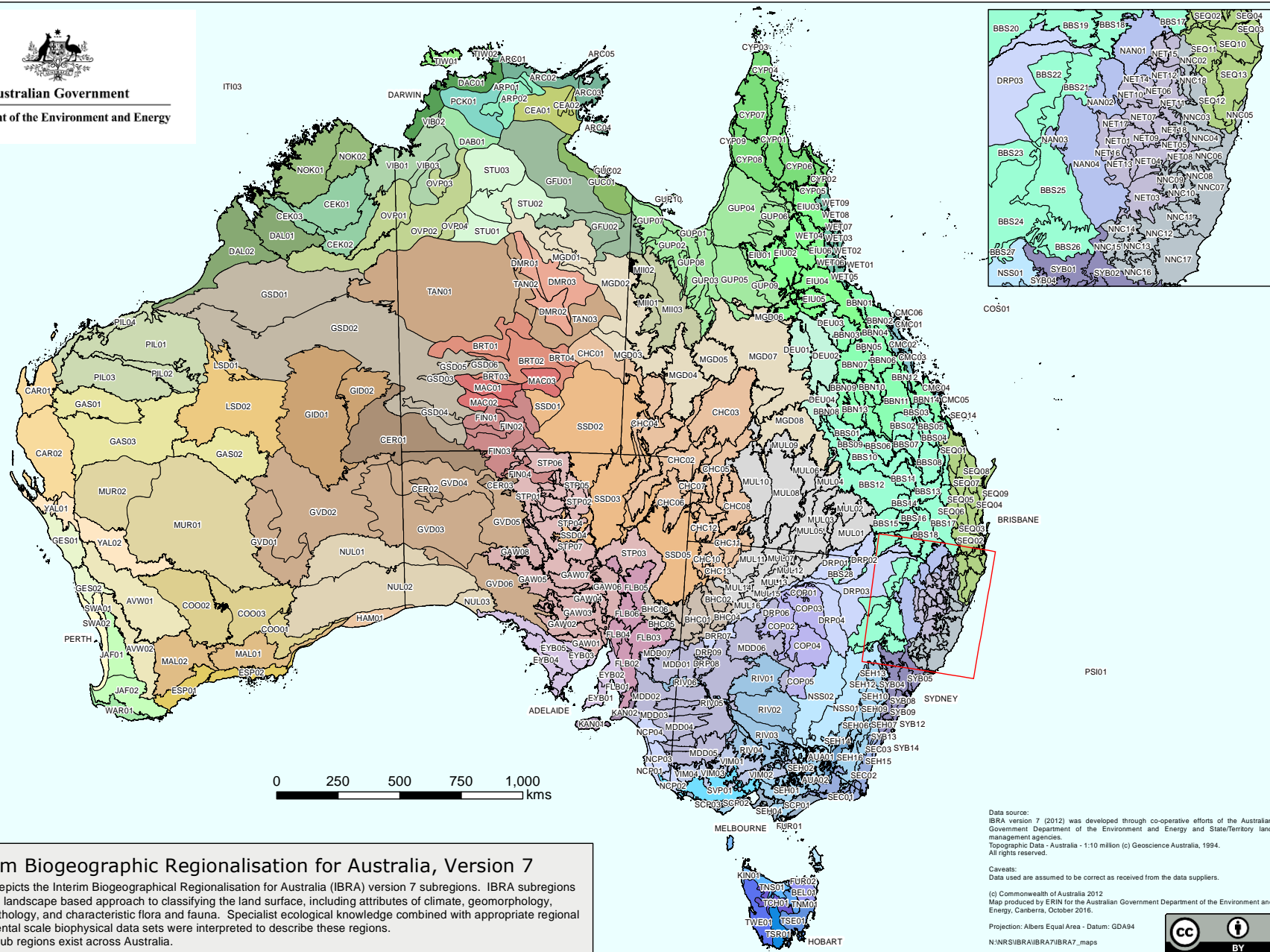


Australian Government
Department of the Environment and Energy

IBRA

Interim Biogeographic Regionalisation for Australia

419 sub-regions



Interim Biogeographic Regionalisation for Australia, Version 7
 This map depicts the Interim Biogeographical Regionalisation for Australia (IBRA) version 7 subregions. IBRA subregions represent a landscape based approach to classifying the land surface, including attributes of climate, geomorphology, landform, lithology, and characteristic flora and fauna. Specialist ecological knowledge combined with appropriate regional and continental scale biophysical data sets were interpreted to describe these regions. 419 IBRA sub regions exist across Australia.

Data source:
 IBRA version 7 (2012) was developed through co-operative efforts of the Australian Government Department of the Environment and Energy and State/Territory land management agencies.
 Topographic Data - Australia - 1:10 million (c) Geoscience Australia, 1994. All rights reserved.

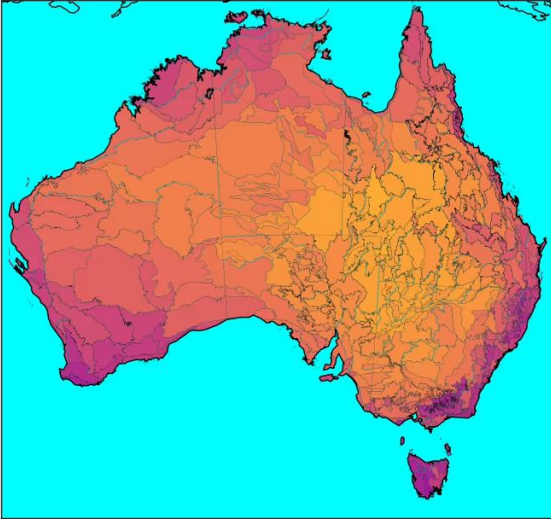
Caveats:
 Data used are assumed to be correct as received from the data suppliers.

(c) Commonwealth of Australia 2012
 Map produced by ERIN for the Australian Government Department of the Environment and Energy, Canberra, October 2016.

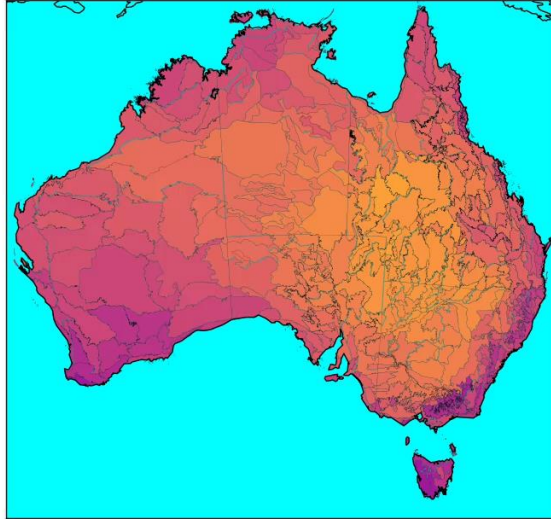
Projection: Albers Equal Area - Datum: GDA84
 N:\NR\IBRA\IBRA7\IBRA7_maps

clear-sky MIR distribution 50th percentile for each IBRA sub-region and sub-season

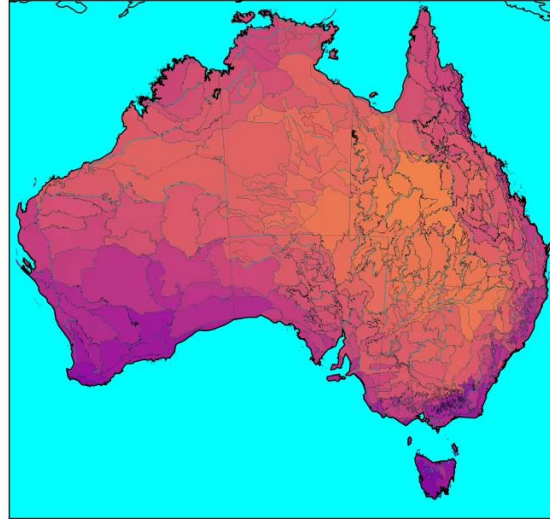
Early Summer



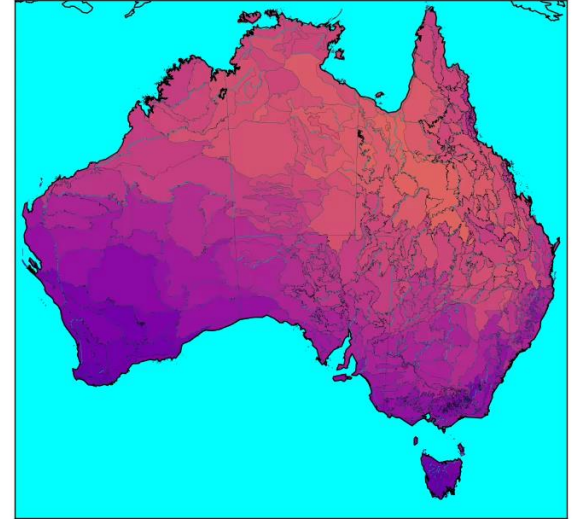
Late Summer



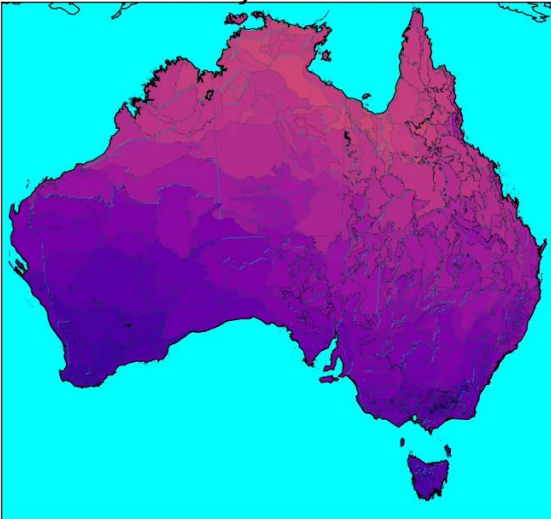
Early Autumn



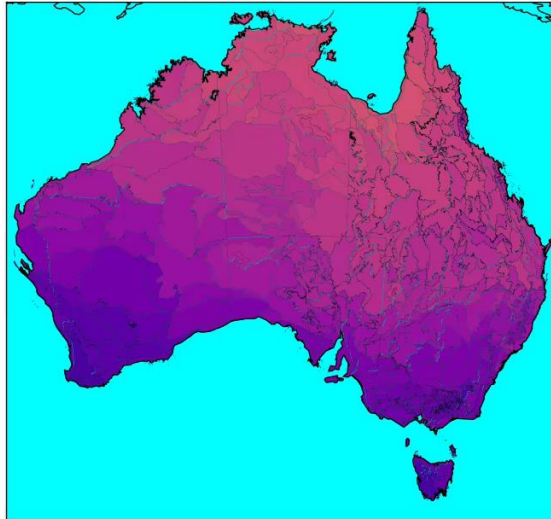
Late Autumn



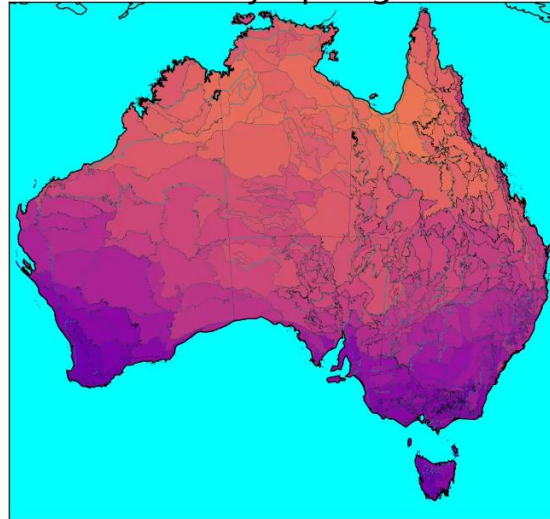
Early Winter



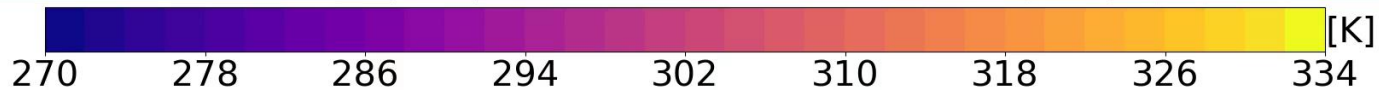
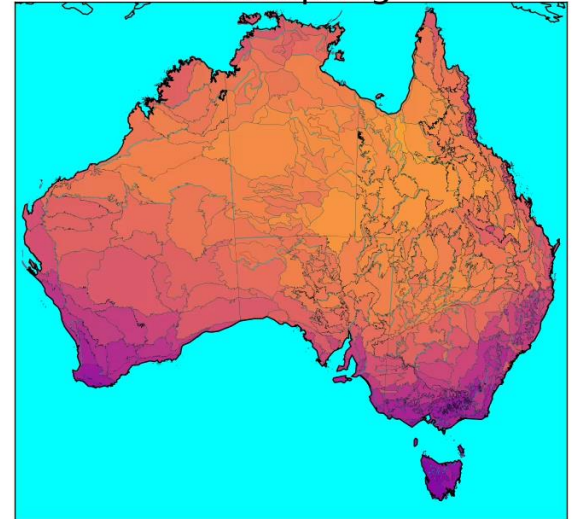
Late Winter

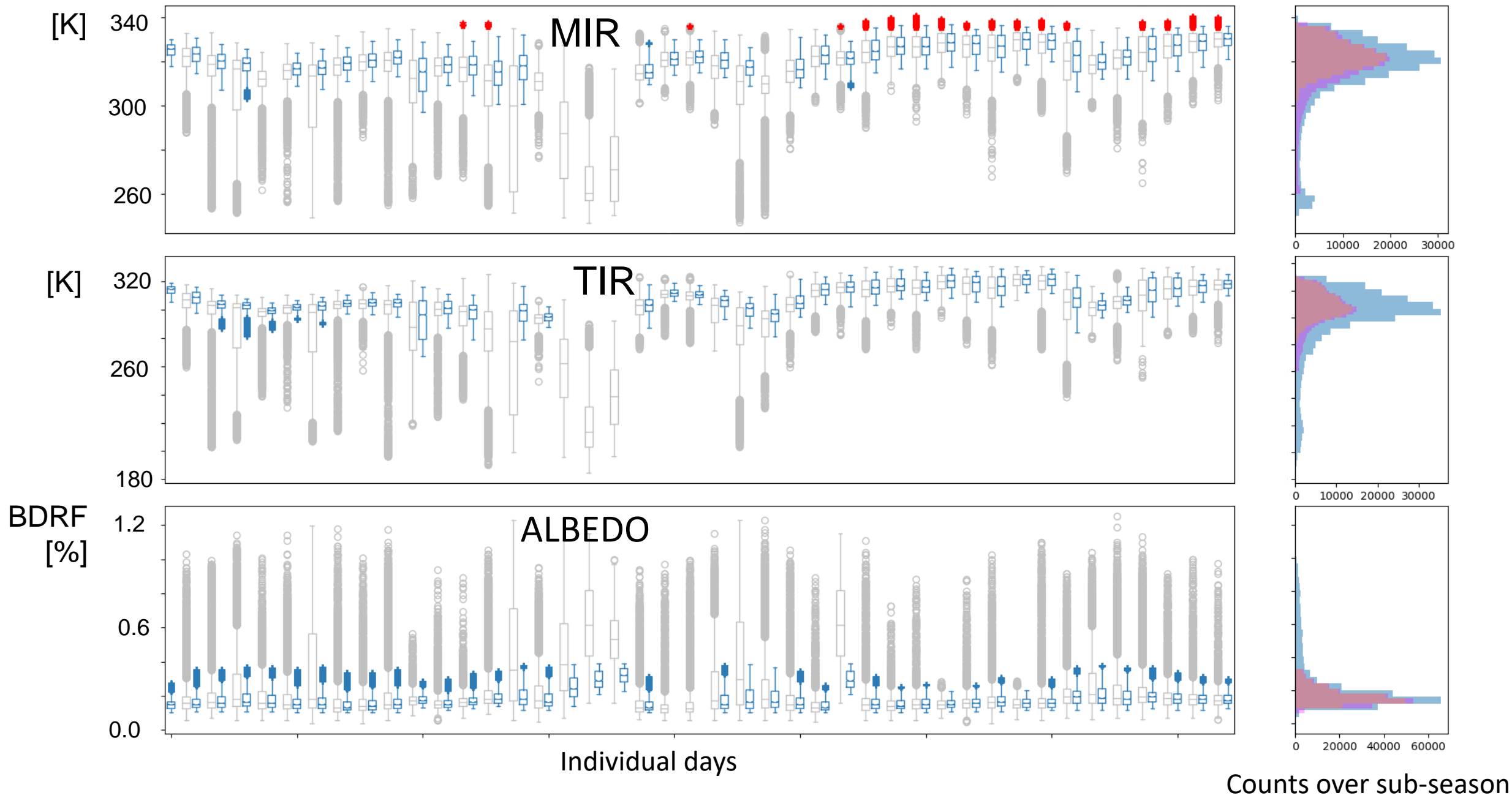


Early Spring

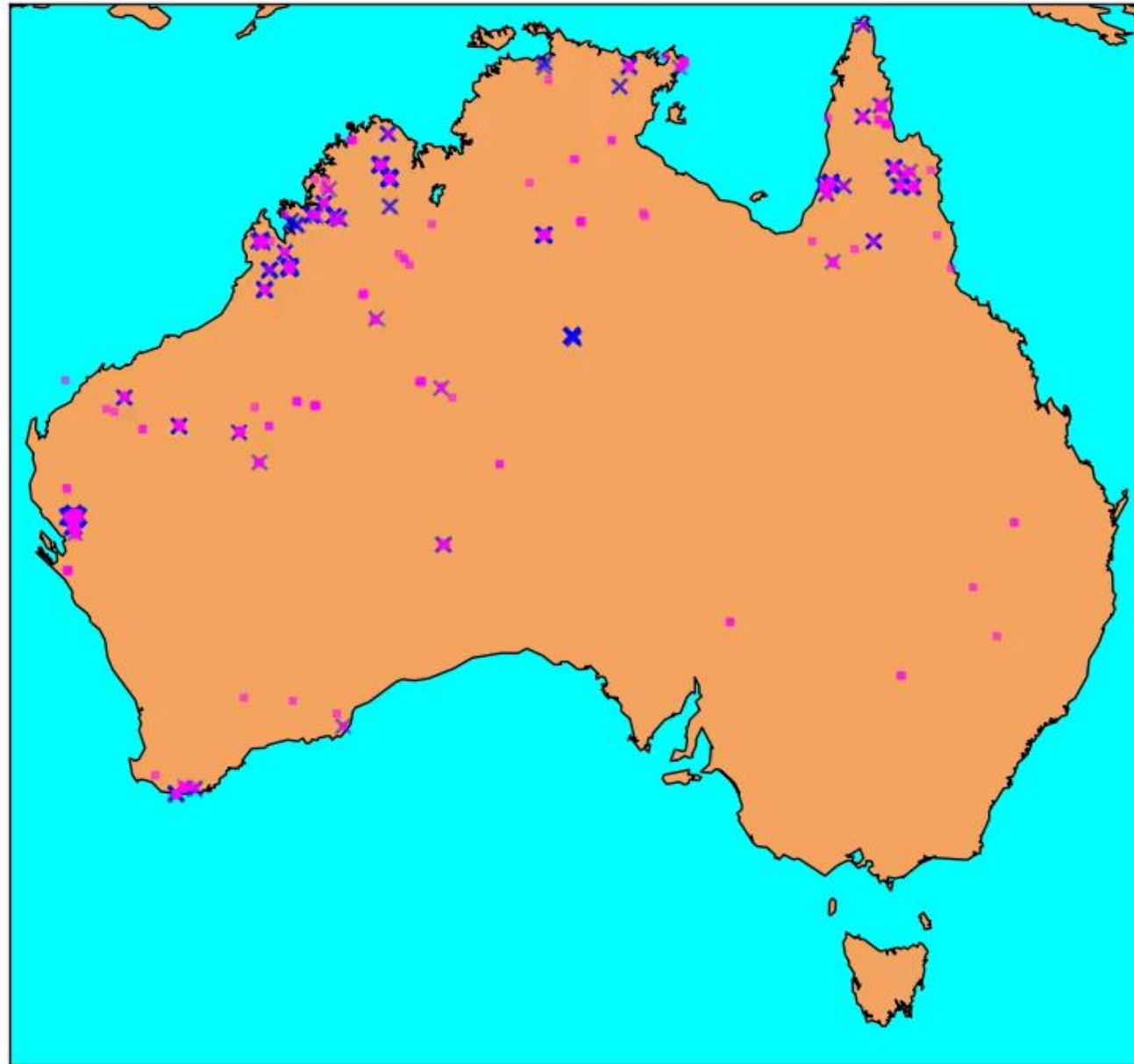


Late Spring





2015-12-02



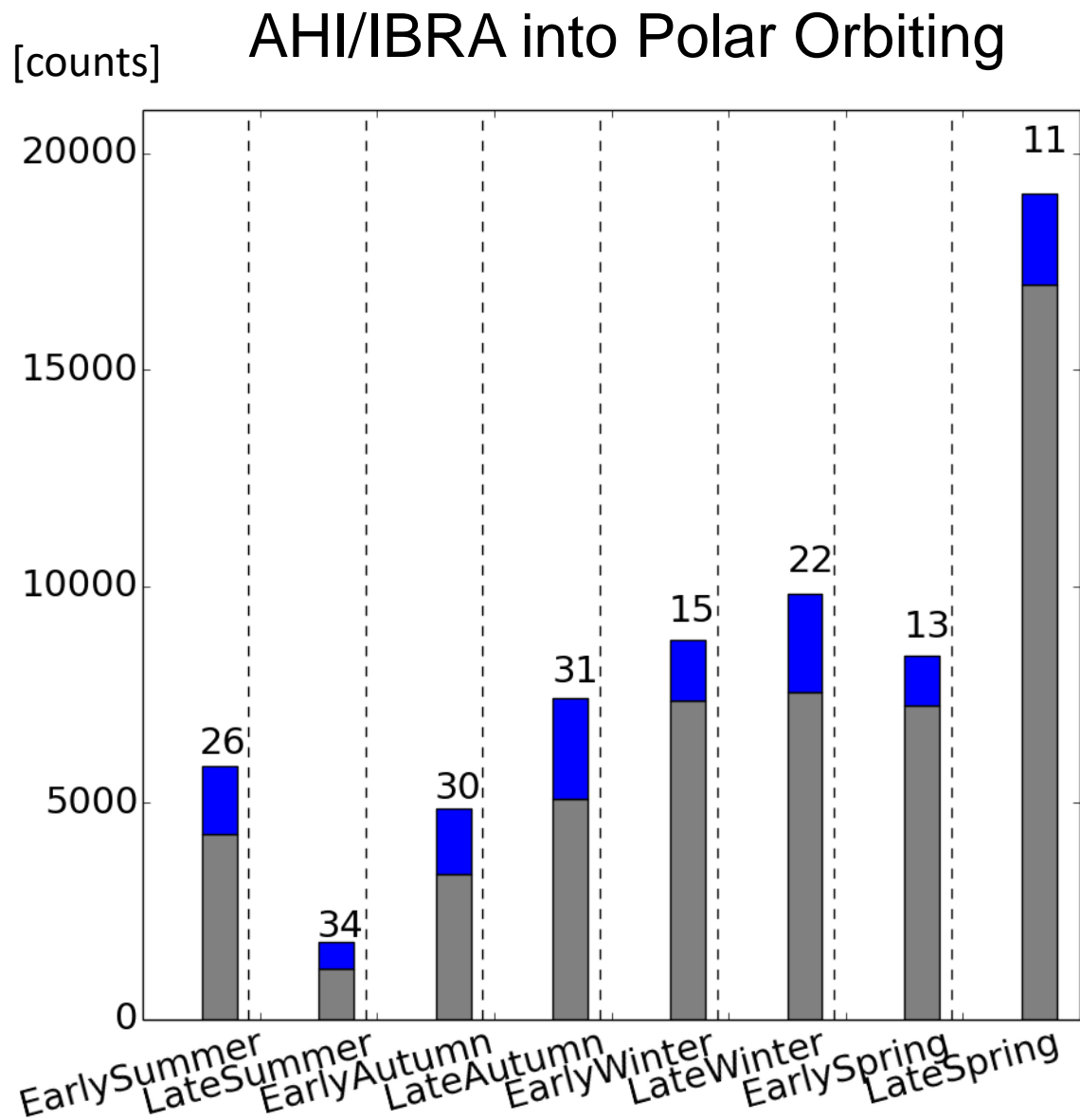
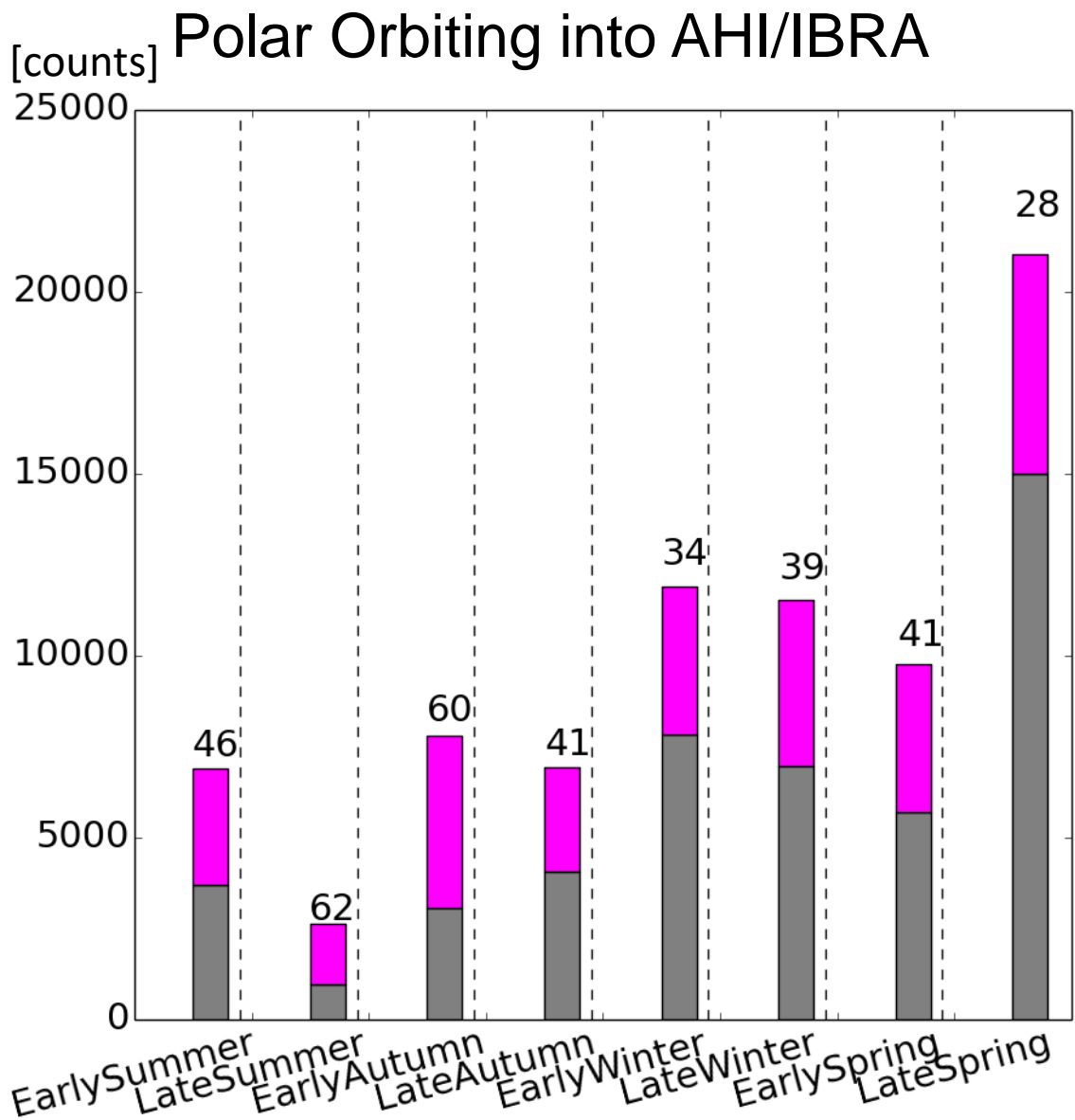
■ Polar Orbiting
MODIS/TERRA
MODIS/AQUA
VIIRS/SUOMI

X AHI/IBRA
(New
Australia
Specific)

Re-projected onto
Himawari-8 grid.

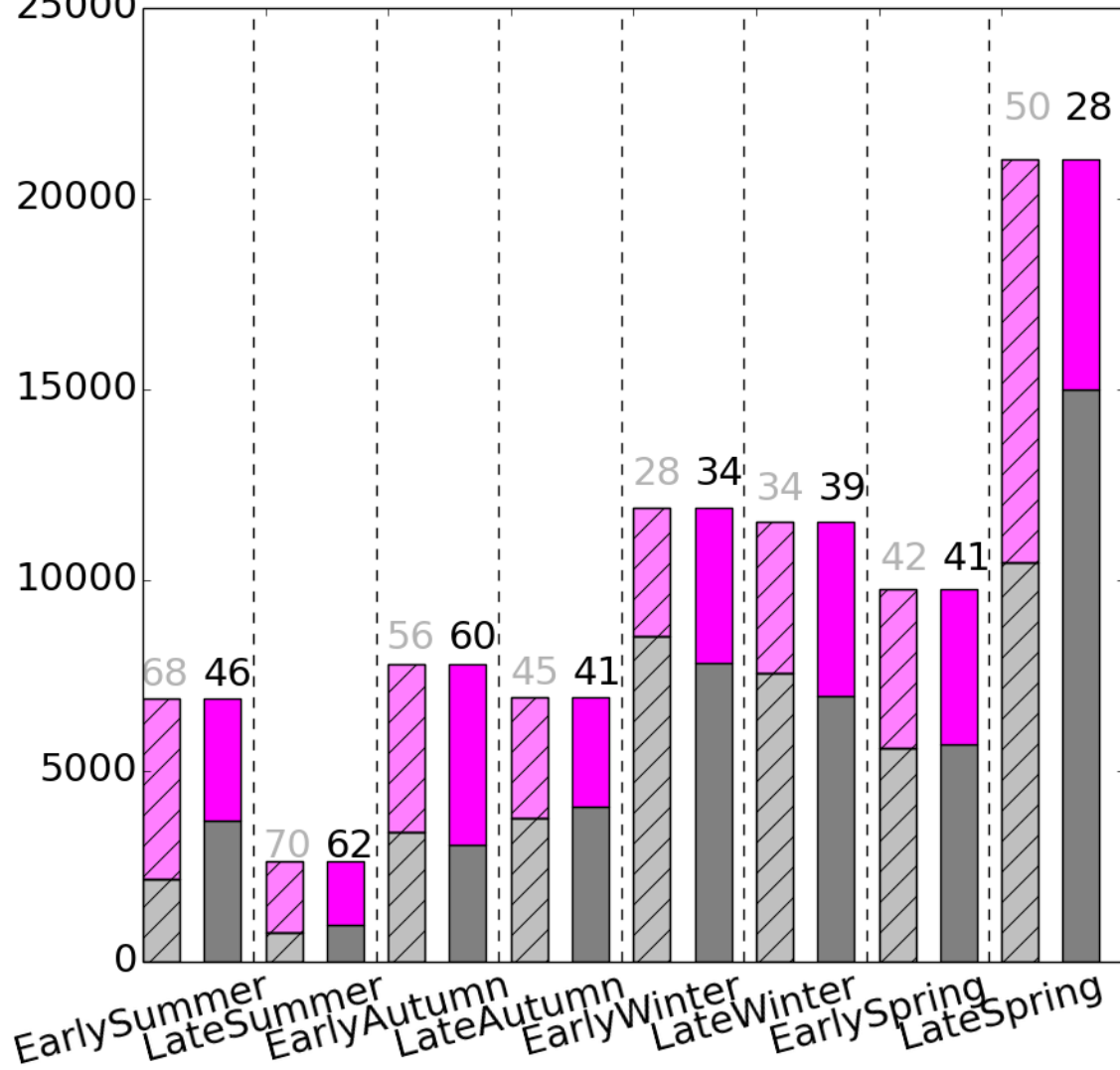
Pixel "on" if
hotspot at any time
between 0000 UTC
and 0610 UTC.





Polar Orbiting into AHI

[counts]
25000



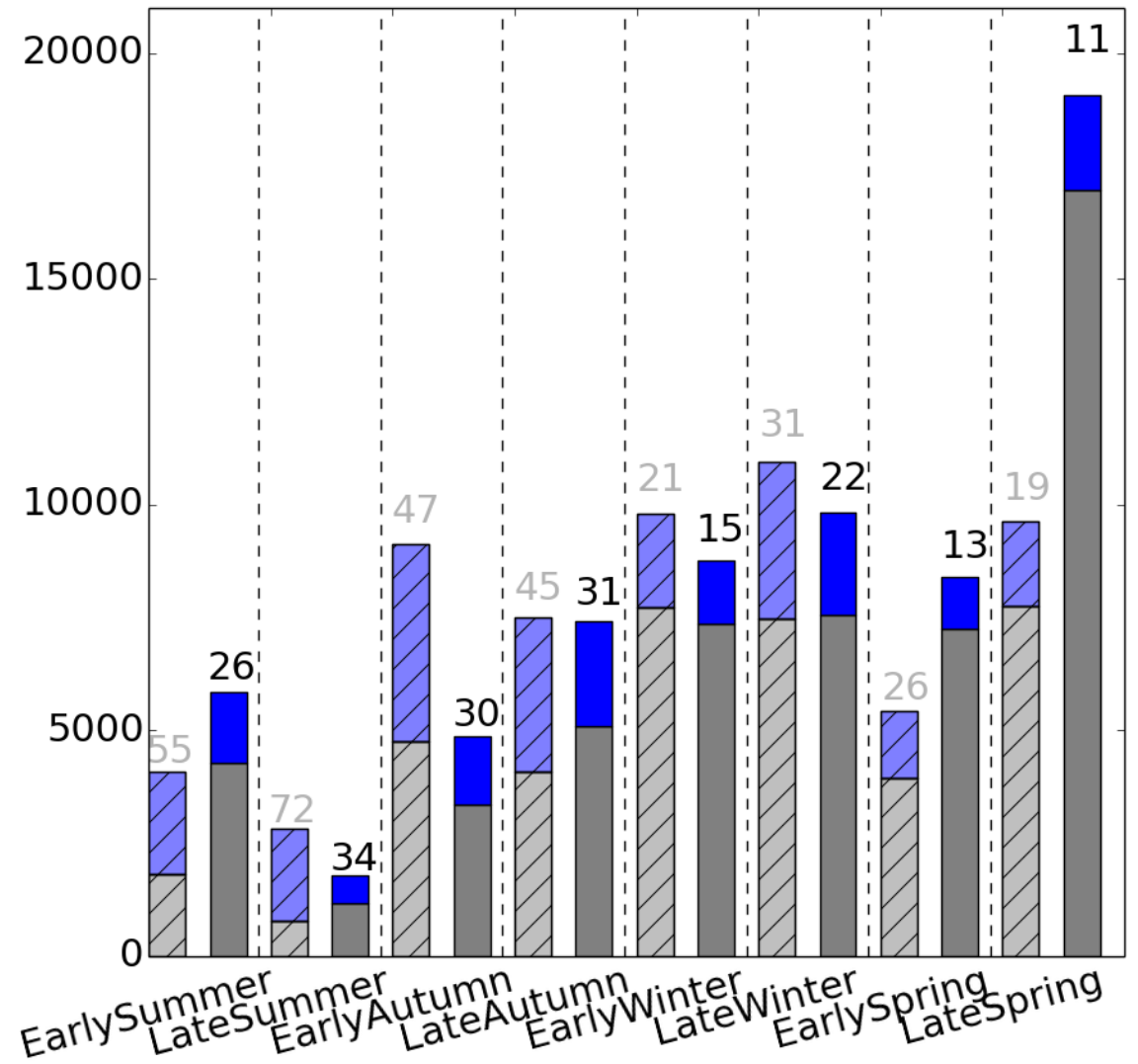
AHI/WFABBA



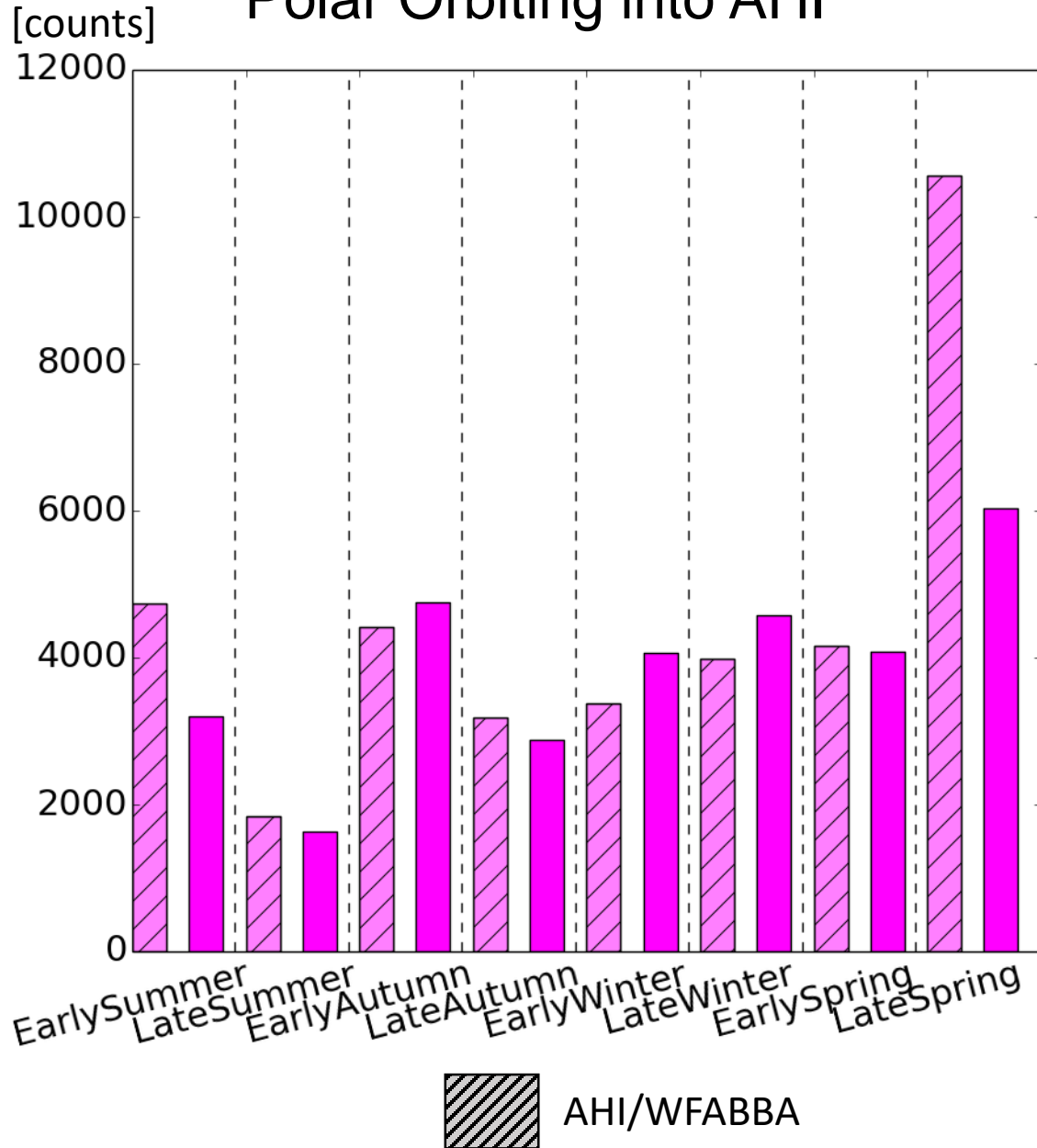
AHI/IBRA

AHI into Polar Orbiting

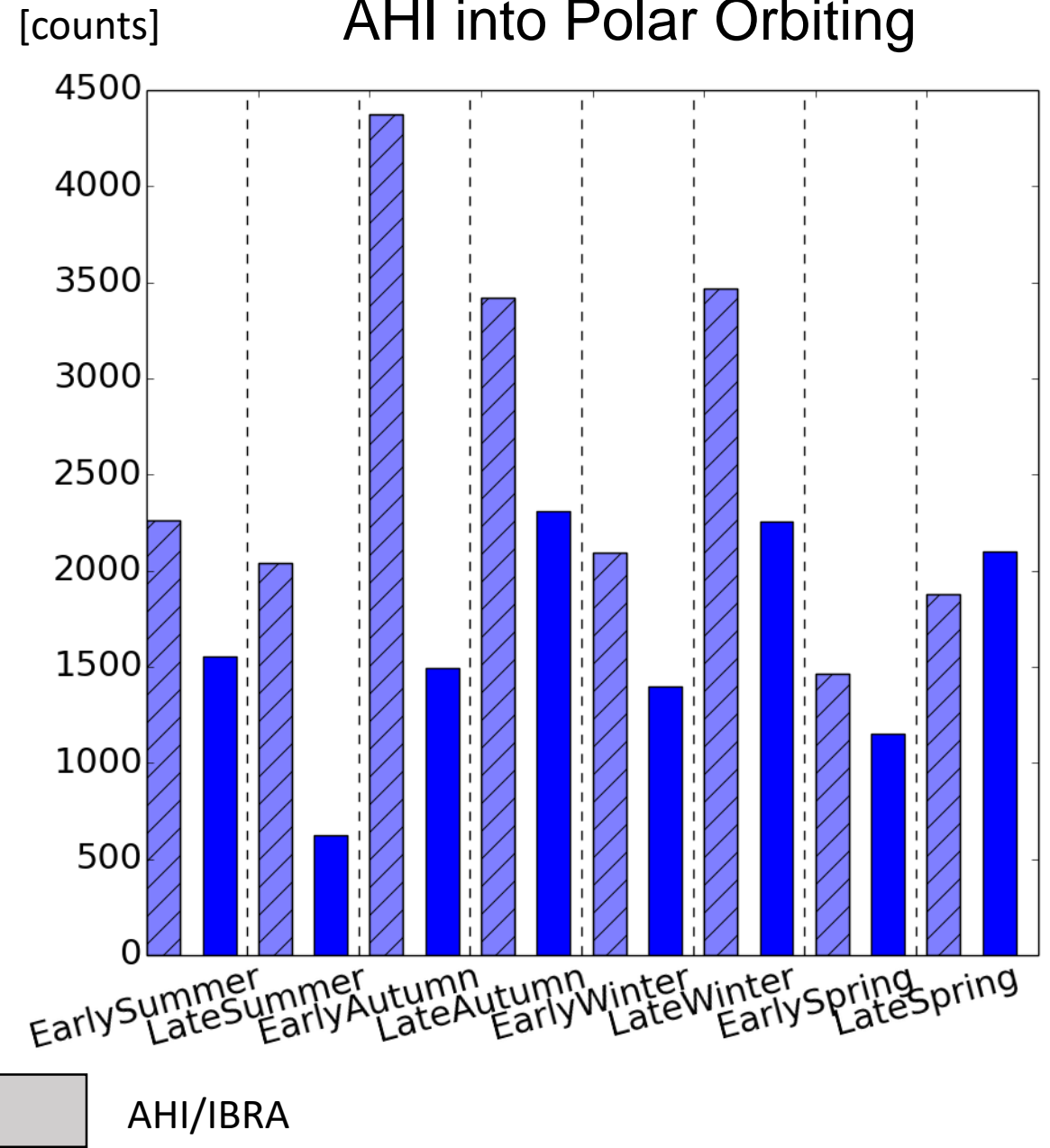
[counts]



Polar Orbiting into AHI



AHI into Polar Orbiting

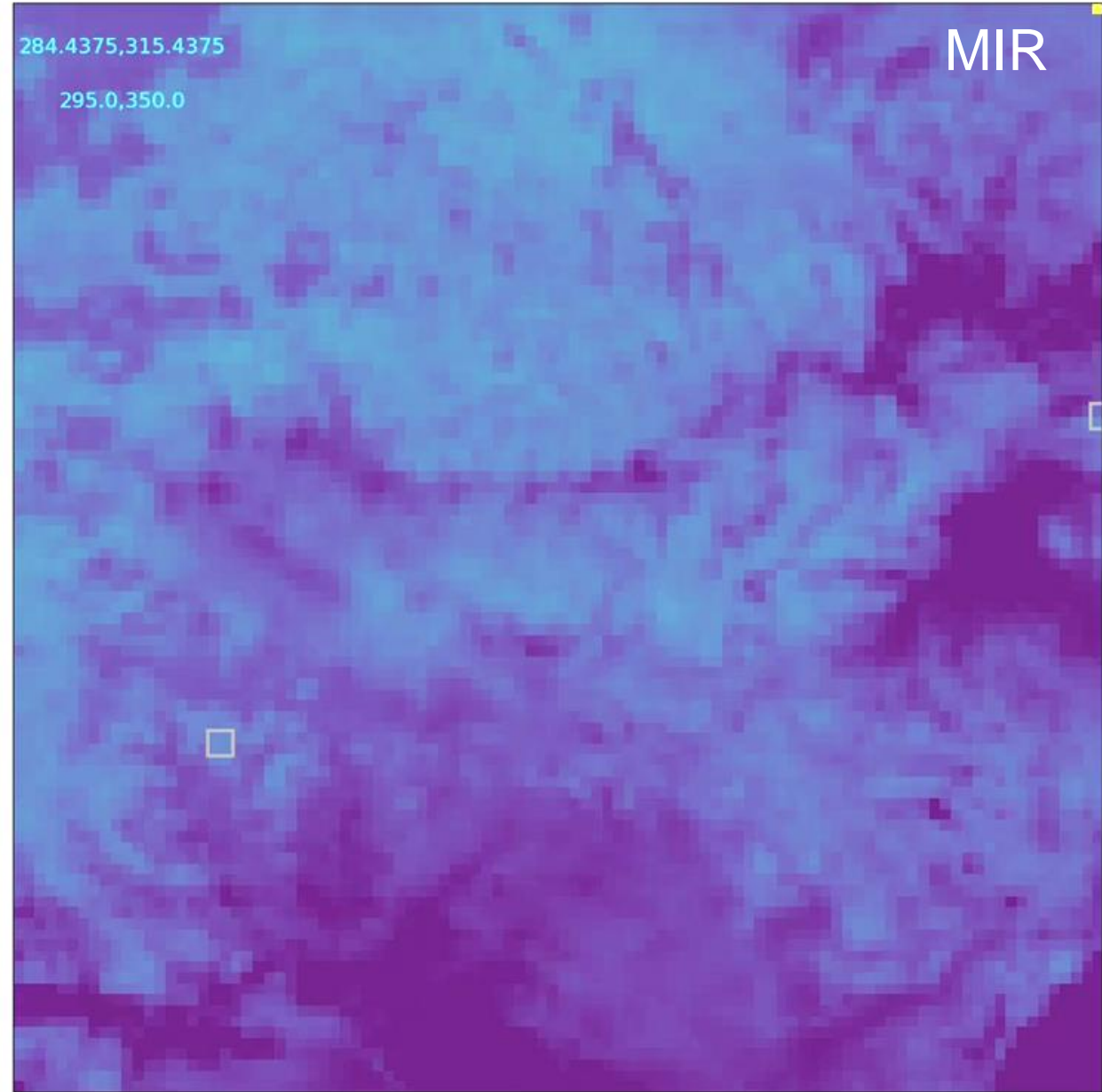
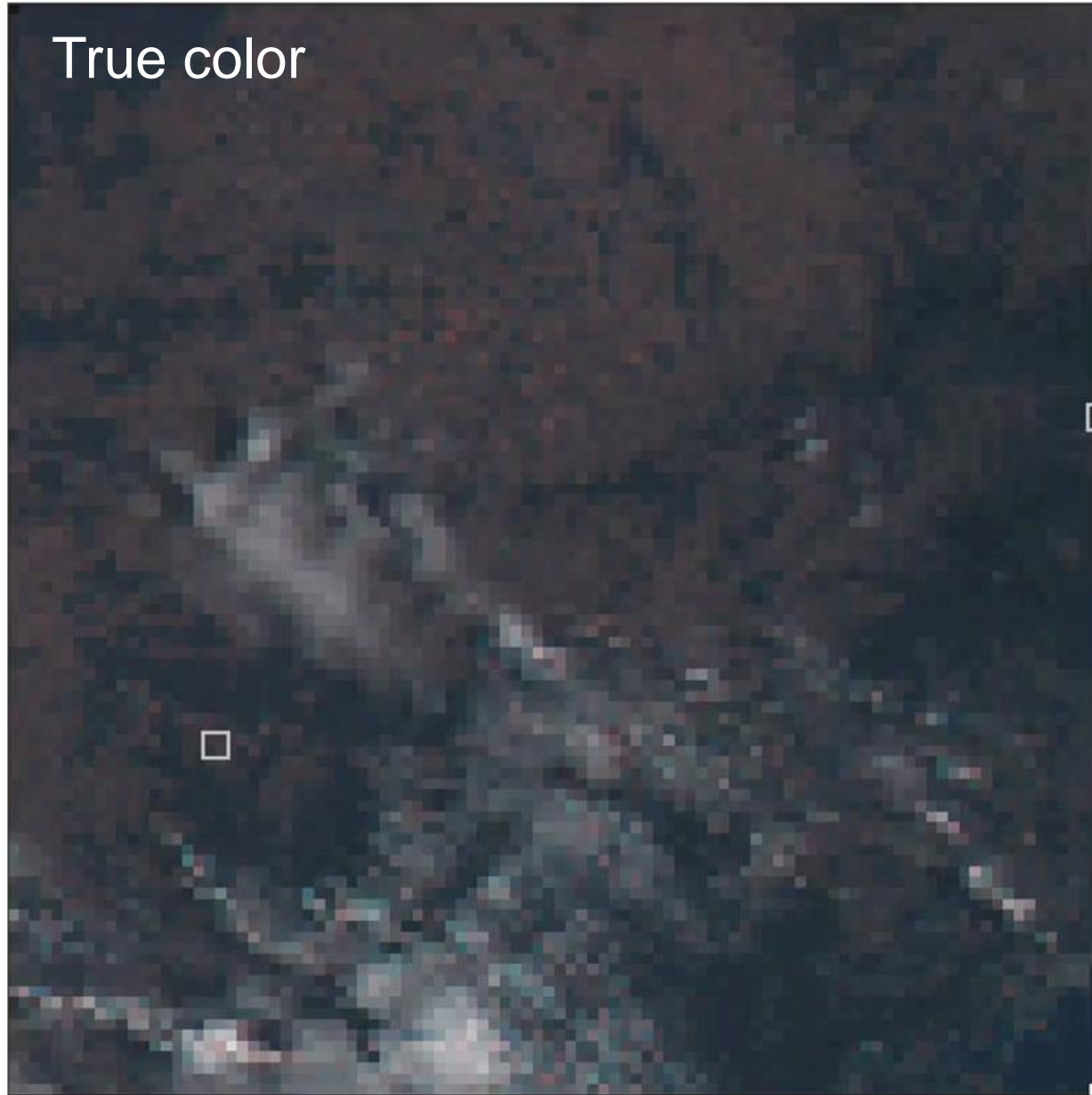


■ FRP > 40 MW

■ FRP > 20 MW

□ FRP > 10 MW

True color



Himawari-8, 100 x 100 pixels

QUESTIONS ?

