Features and Advancements in Polar2Grid and Geo2Grid Image Creation Software

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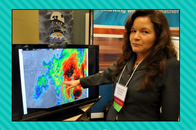

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Polar2Grid - Supporting Polar Orbiter Satellites

CSPP LEO - http://cimss.ssec.wisc.edu/cspp/

Geo2Grid - Supporting Geostationary Satellites

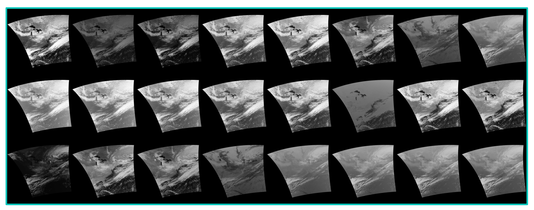
CSPP Geo - http://cimss.ssec.wisc.edu/csppgeo/

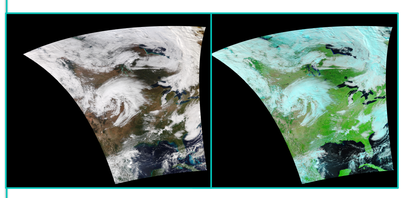
Introduction: A common requirement for anyone who works with satellite data is the need to create high quality images. Polar2grid and Geo2Grid address this problem by providing an easy interface for reprojecting polar and geostationary meteorological satellite data into commonly used formats.

- **Polar Level 1 Products Supported**
  - VIIRS - S-NPP and NOAA-20 | MODIS - Aqua and Terra
  - AVHRR - NOAA-18, 19 Metop-A,B,C | ATMS – NOAA-20 and S-NPP
  - AMSR-2 – GCOMW-1 | FY3-D MERSI-2 and FY3-B VIIR
- **Polar CSPP Science Products Supported**
  - ACSPO SSTs from VIIRS, MODIS, AVHRR
  - MIRS Microwave Retrievals from ATMS, AMSU, and MHS
  - CLAVRx Cloud Retrievals from VIIRS, MODIS and AVHRR
  - CSPP Active Fire overlays

* Simple Bash Shell Script interface to Python (Satpy Library)

```
polar2grid.sh viirs gtiff –f /path_to_data
```





* Easy to Select Specific Bands/RGBs

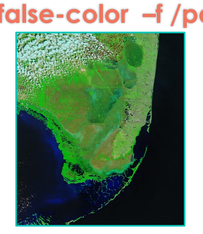
True and False Color VIIRS/MODIS Image Creation includes Atmospheric Correction

```
polar2grid.sh crefll gtiff –p –-true-color –-false-color –f /path
```

* Easy to Reproject to User Defined Grid

User Grid: Miami Lambert Conic Conformal grid 300m spatial resolution

```
polar2grid.sh crefl gtiff --false-color --grid-configs grid.conf -g miami -f /path
```



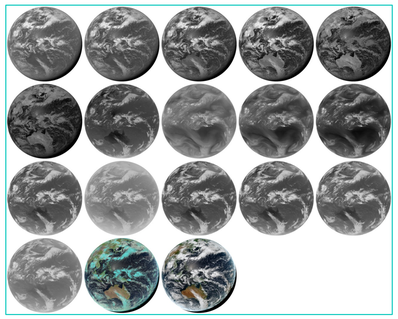
Other Polar2Grid Features

- Output Format options
  - GeoTIFF, HDF5, Binary, KMZ, AWIPS, NinJo
- Map, Grid overlays
- Many predefined grids

Coming Enhancements

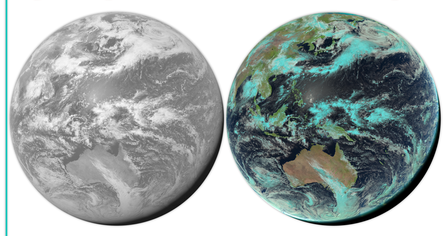
- Adding support for more products
  - CSPP VIIRS EDRs
  - Polar2Grid 3.0!
    - Improved optimization
    - Consistent interface to Geo2Grid

- **Geostationary Level 1 Products Supported**
  - GOES-16 and 17 ABI, All Bands and All Modes
    True and Natural Color RGBs
    Airmass, Ash, Dust, Fog, Night Microphysics RGBs
  - Himawari -8 AHI All Bands
    True and Natural Color RGBs
  - Himawari-9 AHI All Bands
    True and Natural Color RGBs



* Simple Bash Shell Script interface to Python (SatPy Library)

```
geo2grid.sh –r ahi_abi –w gtiff –f /path_to_data
```

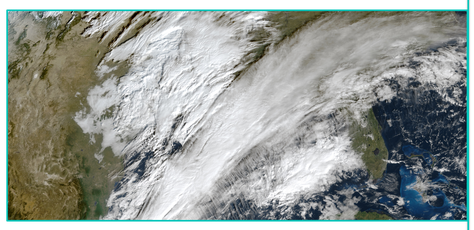


* Easy to Select Specific Bands/RGBs

```
geo2grid.sh –r ahi_hsd –w gtiff –p C03 false_color –f /path
```

* Easy to Create Areal Subset Images

```
geo2grid.sh -r abi_l1b -w geotiff --ll-bbox -105 23 -75 37 \
--num-workers 8 -p true_color –f /path
```



Other Geo2Grid Features

- Script for creating animations
- Efficient Processing
  - Dask Parallel Processing with xarray
- Map, Grid overlays

Coming Enhancements

- Adding support for more products
  - AMI Imager
- Expanded support for RGBs

Realtime Geo2Grid ABI website: https://geosphere.ssec.wisc.edu