GOES = Geostationary Operation Environmental Satellite (good overview [here](https://www.goes-r.gov/downloads/resources/documents/Beginners_Guide_to_GOES-R_Series_Data.pdf))

* Latest series is GOES-R
* Maybe grab data from [AWS](https://registry.opendata.aws/noaa-goes/)
* Important [datasets](https://www.goes-r.gov/products/overview.html)
  + Variable names [here](https://www.noaa.gov/organization/information-technology/list-of-big-data-program-datasets)
    - Full disk = entire view (ends in F)
    - CONUS = continental US (ends in C)
    - mesoscale = a 1,000 by 1,000 km rectangular image. GOES-16 and 17 both alternate between two different geographic regions (domains). (ends in M)
  + Fire/hot spot = ABI-L2-FDC\_
    - Clouds are an issue?
  + Lightning detection = GLM-L2-LCFA
    - Also [here](https://console.cloud.google.com/marketplace/product/noaa-public/lightning?filter=solution-type:dataset&q=NOAA&id=d18e2712-bc50-471a-bf22-a2de3d9489d9)
  + Resolution ~2 km^2 per pixel
    - THINK ABOUT PROJECTION
      * Maybe negligible area/length difference in CA (check)
        + Probably more relevant is inherent angular measurements
      * Will matter for aligning GIS data in lat-long
  + Vegetation data [description](https://earthobservatory.nasa.gov/features/MeasuringVegetation/measuring_vegetation_2.php)
* Use pyproj for projection, [here](https://makersportal.com/blog/2018/11/25/goes-r-satellite-latitude-and-longitude-grid-projection-algorithm) is good explainer
  + Pixels move in constant increments of radians

Fire data

* [GIS boundary data](https://www.mtbs.gov/direct-download)