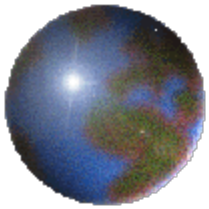
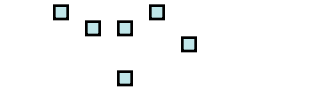
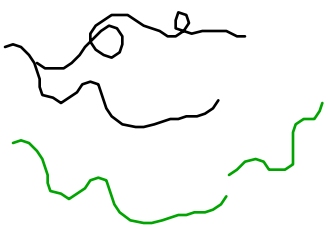


IDES GIS Workshop Day 4

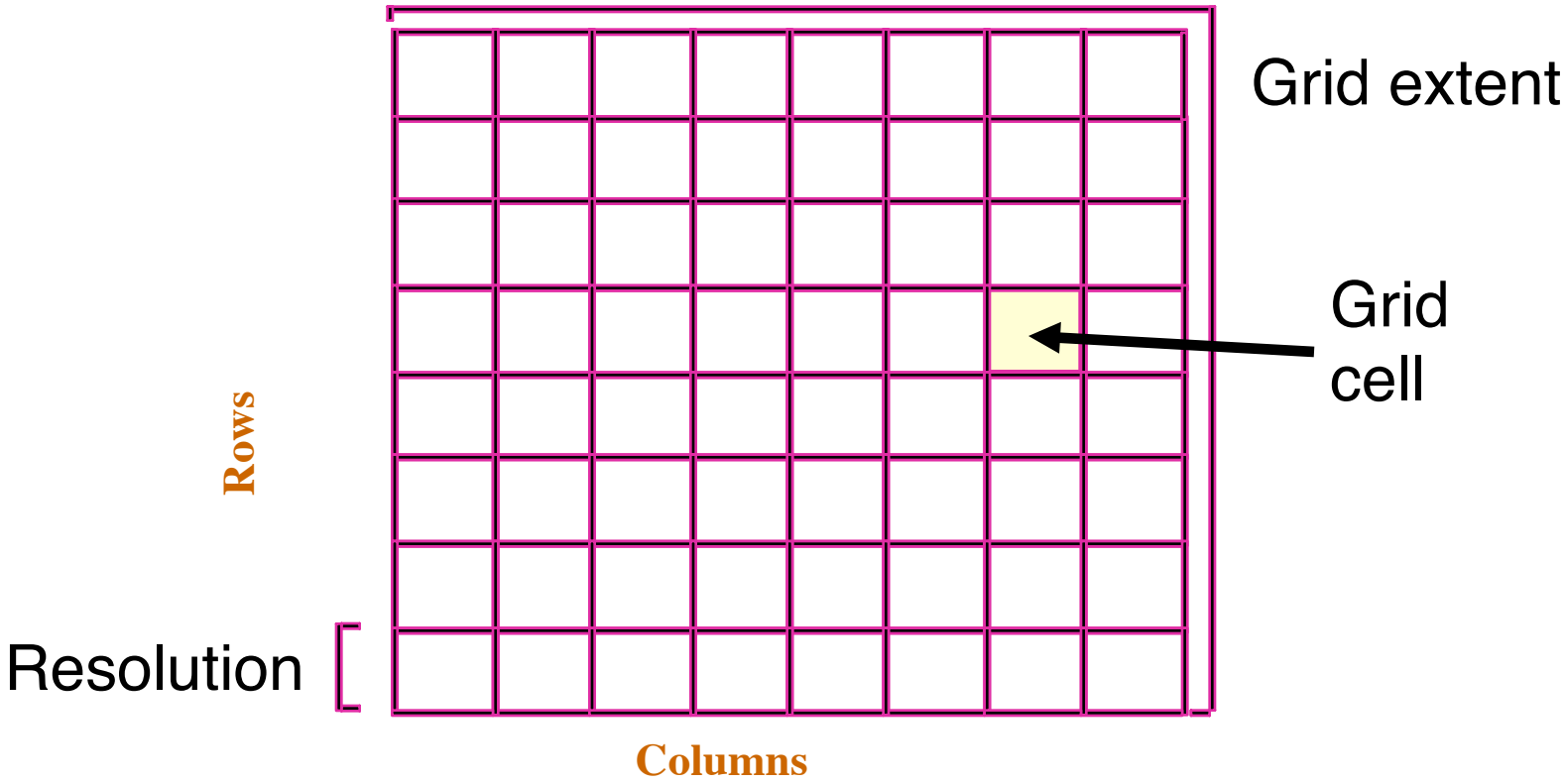
Professor Dawn Wright

Grad Assistant Lalo Guerrero

*Object/Vector **Feature** Types*

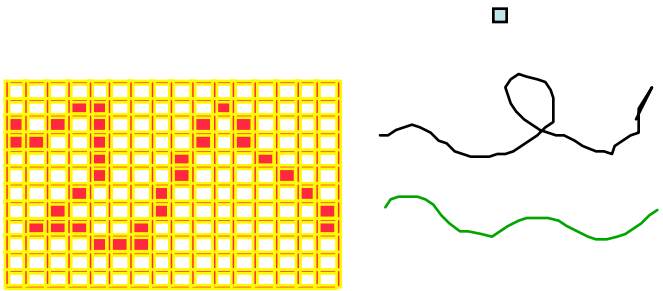
Feature Type	Single Part	Multi-Part
Point		
Line		
Area		
Annotation		

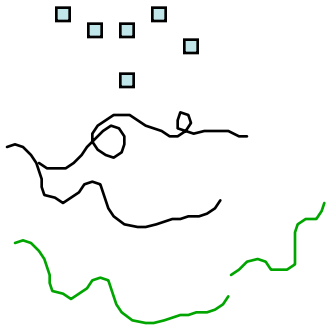
Raster or Grid Data Structure.



*Object/Vector **Feature** Types*

Feature Type	Single Part	Multi-Part
Point		
Line		
Area		
Annotation		





"Rasters tell WHAT occurs everywhere."

- natural for scanned or remotely sensed data.
- **continuous surfaces** (e.g., topography)
- spatial analytical operations are faster.
- compression is easier

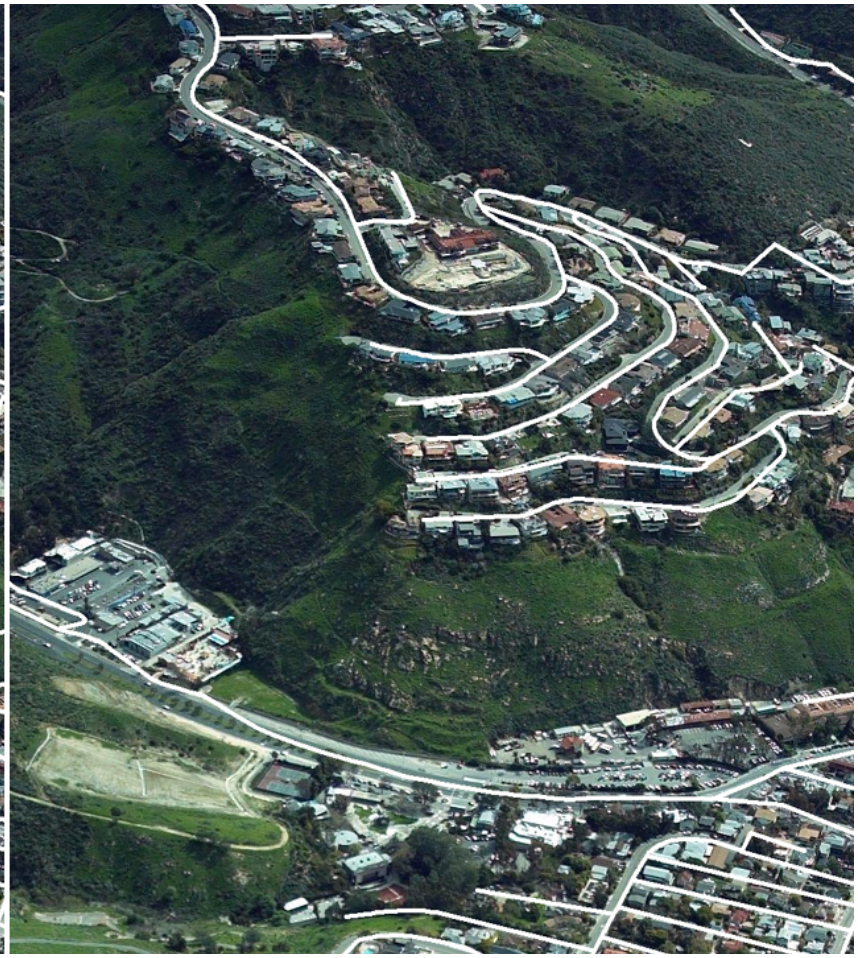
Raster

Orange County, CA

Courtesy of Russ Michel, Pictometry Intl. Inc.

Vector

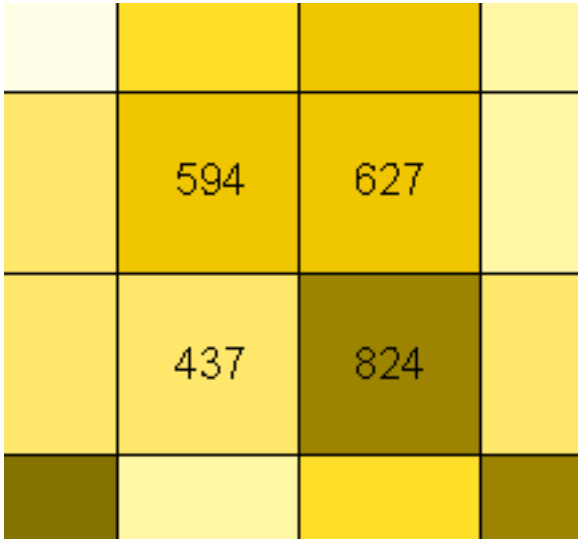
Projected with flat ground plane

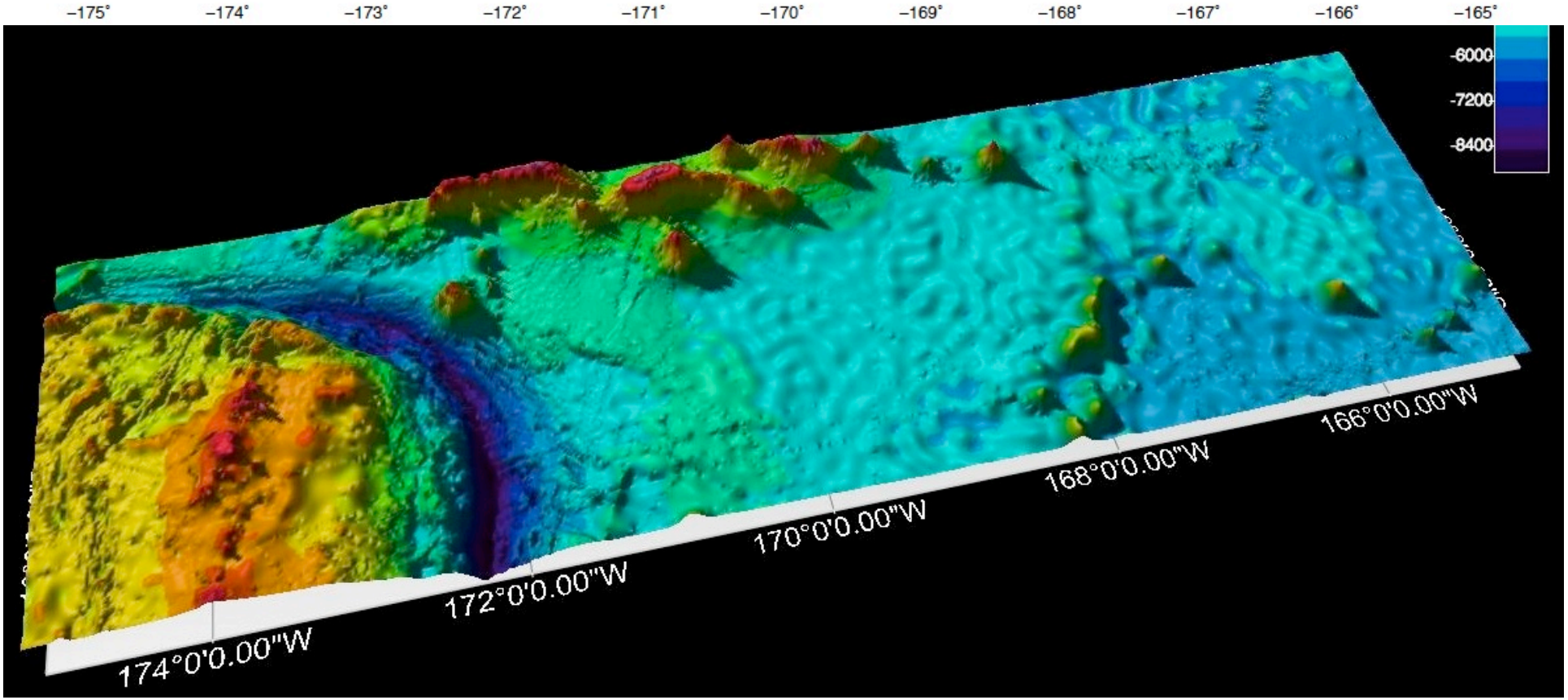


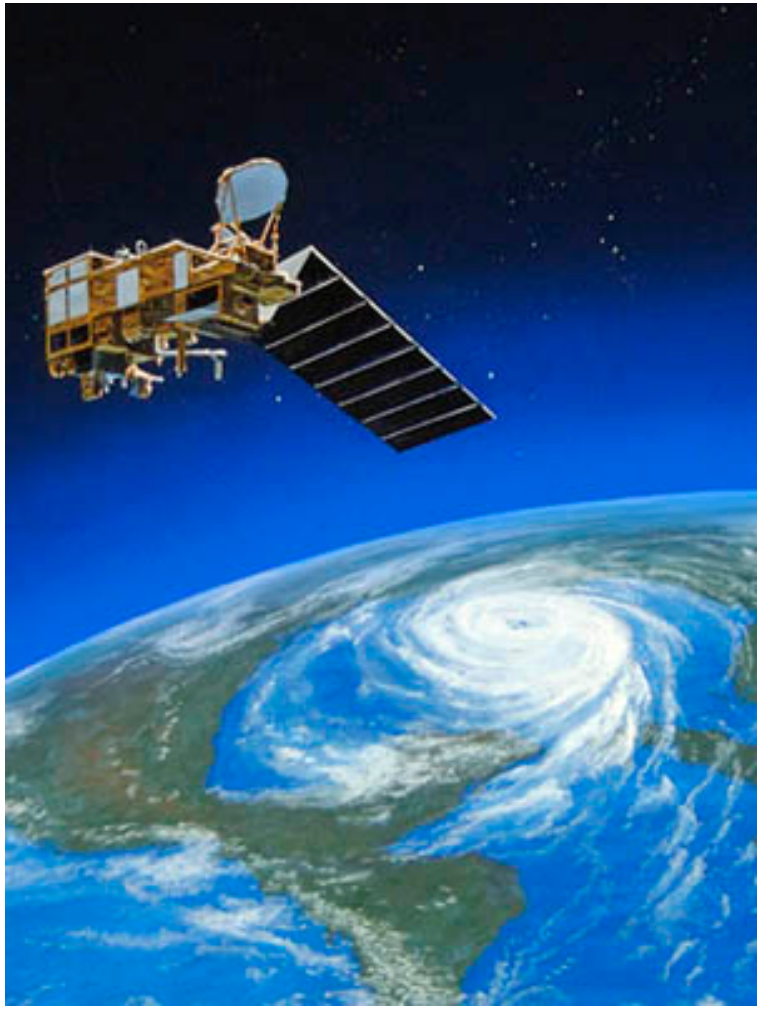
Projected with tessellated ground plane

Orange County Street Centerlines

Courtesy of Russ Michel, Pictometry Intl. Inc.


594
627
437
824

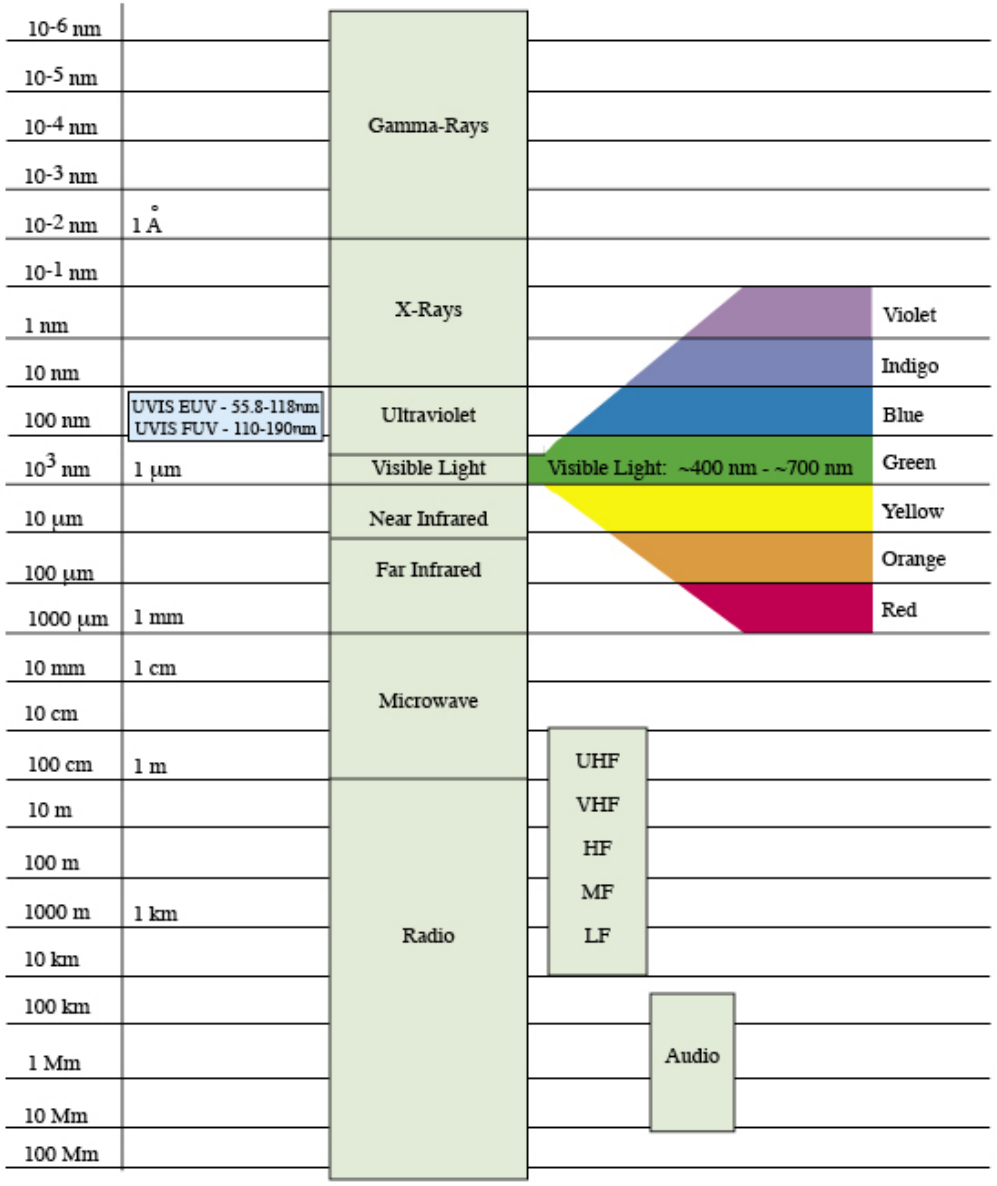

−175°
−174°
−173°
−172°
−171°
−170°
−169°
−168°
−167°
−166°
−165°
-6000
-7200
-8400
174°0'0.00"W
172°0'0.00"W
170°0'0.00"W
168°0'0.00"W
166°0'0.00"W



National Polar-orbiting Operational Environment Satellite System (NPOESS), a next-generation platform for weather and climate.

The Electromagnetic Spectrum

Chart by LASP/University of Colorado, Boulder



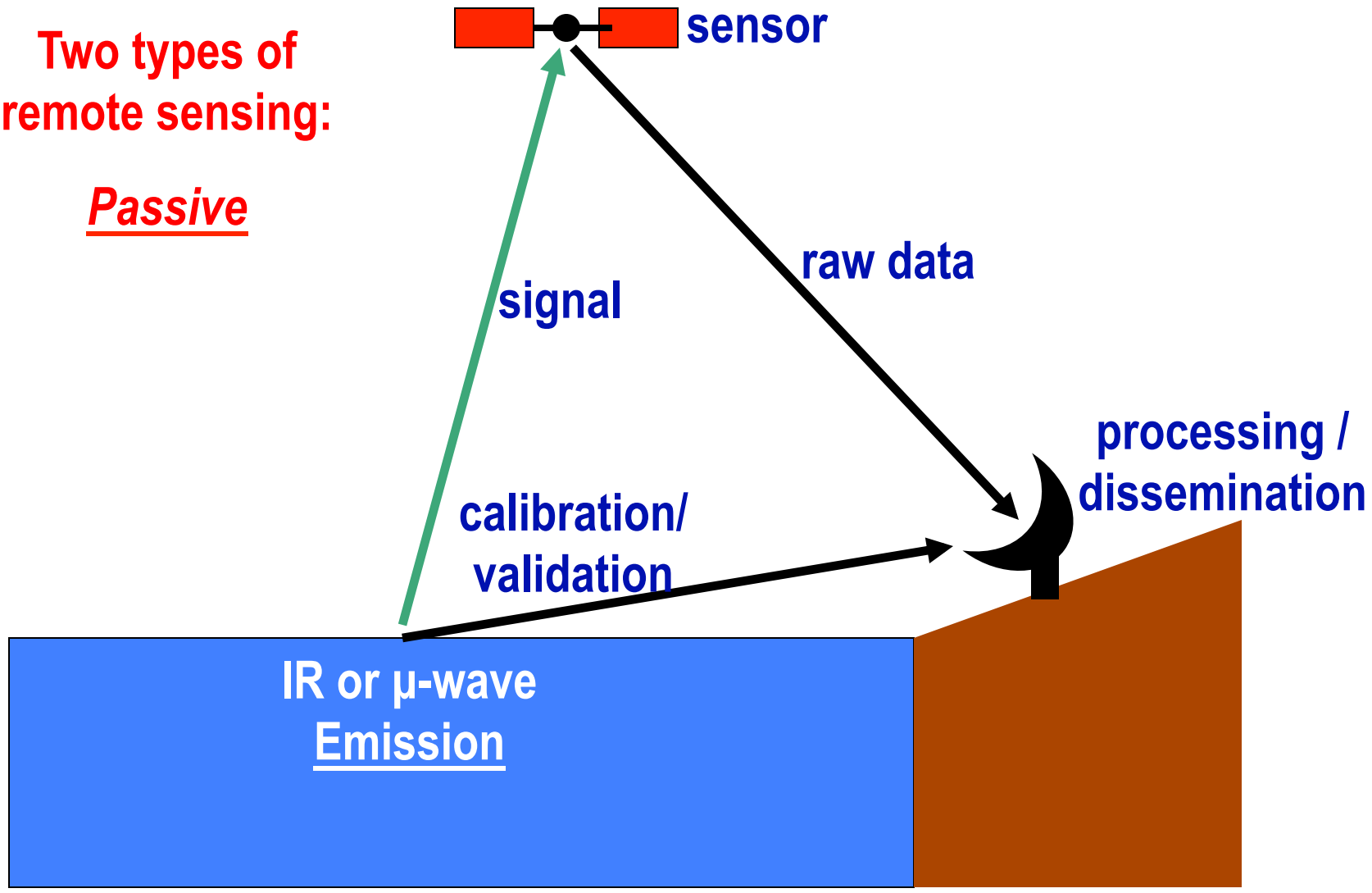
nm=nanometer, Å=angstrom, μm=micrometer, mm=millimeter,
cm=centimeter, m=meter, km=kilometer, Mm=Megameter

Courtesy of Ted Strub, OSU CIOSS

Components of a passive remote sensing system
Example with infrared or microwave wavelengths

Two types of remote sensing:

Passive



Courtesy of Ted Strub, OSU CIOSS

LandSat is an example of a passive remote sensing system (spaceborne satellite)

Old MSS – Multispectral Scanner

Current ETM – Enhanced Thematic Mapper

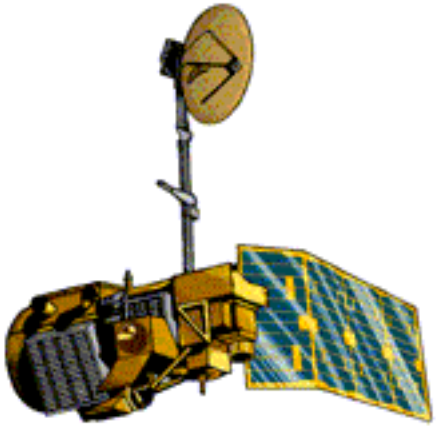
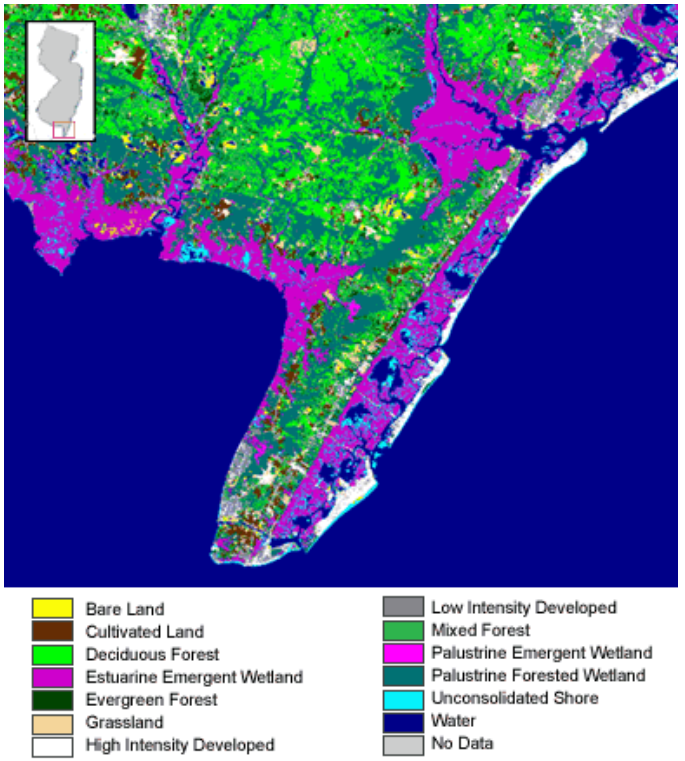
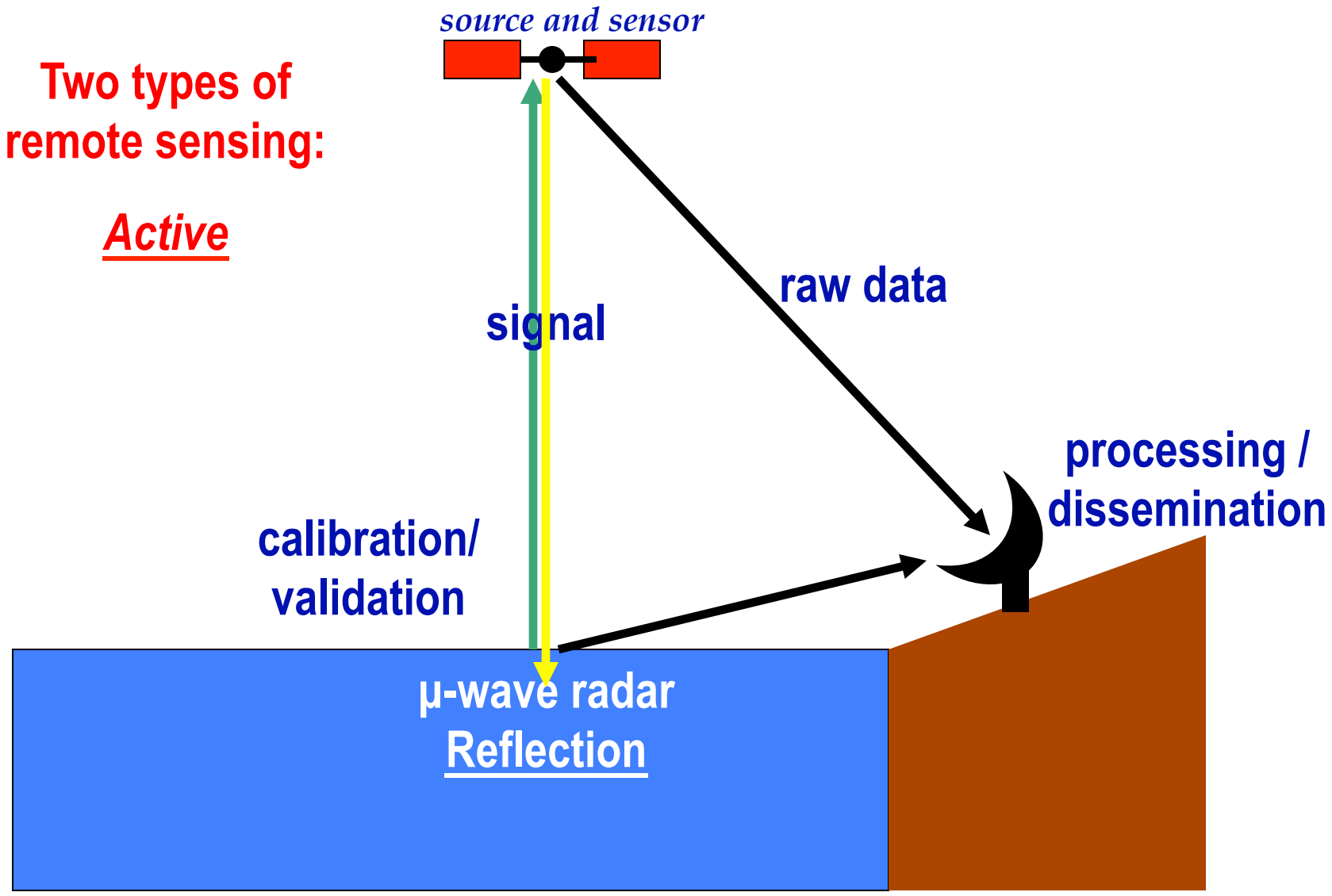


Image provided by USGS

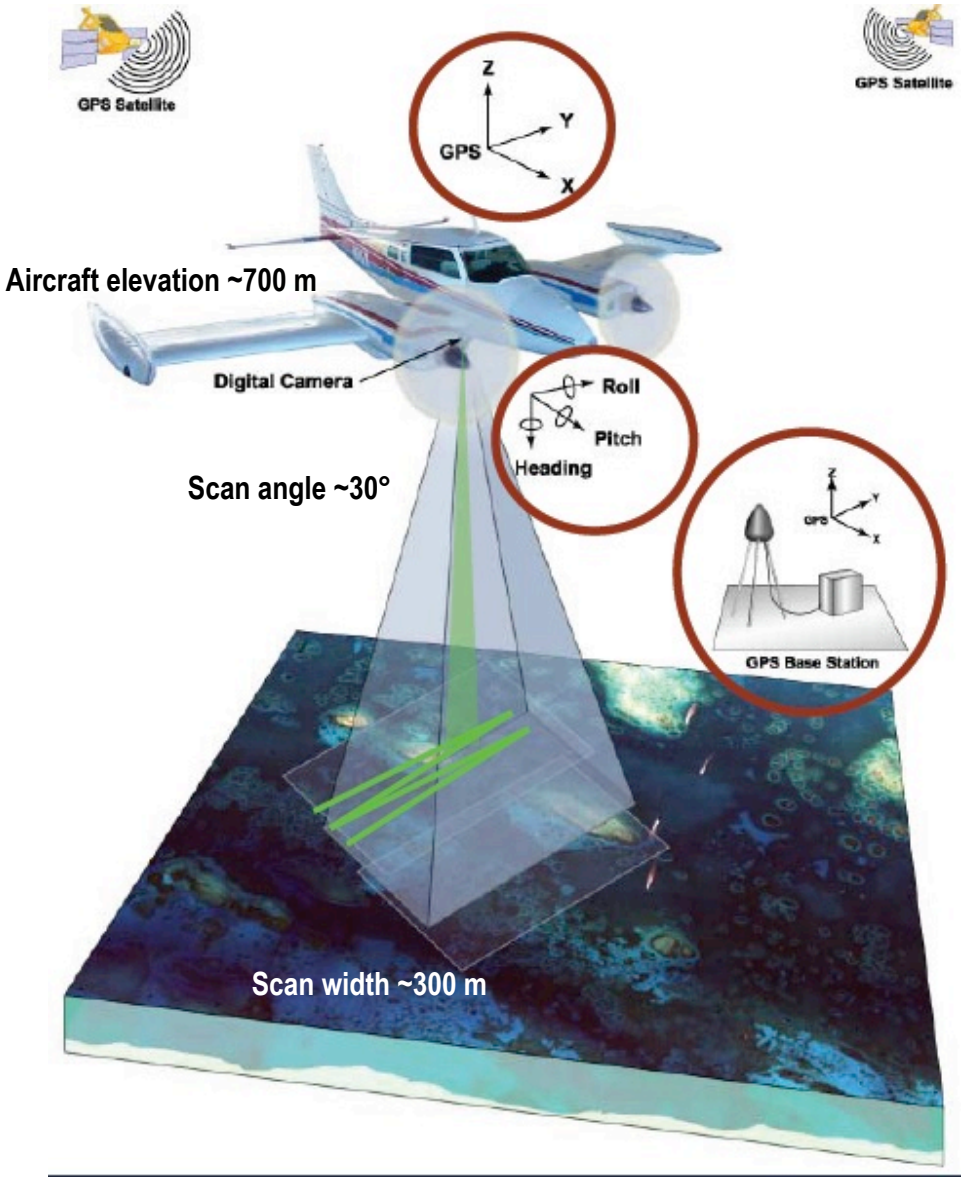


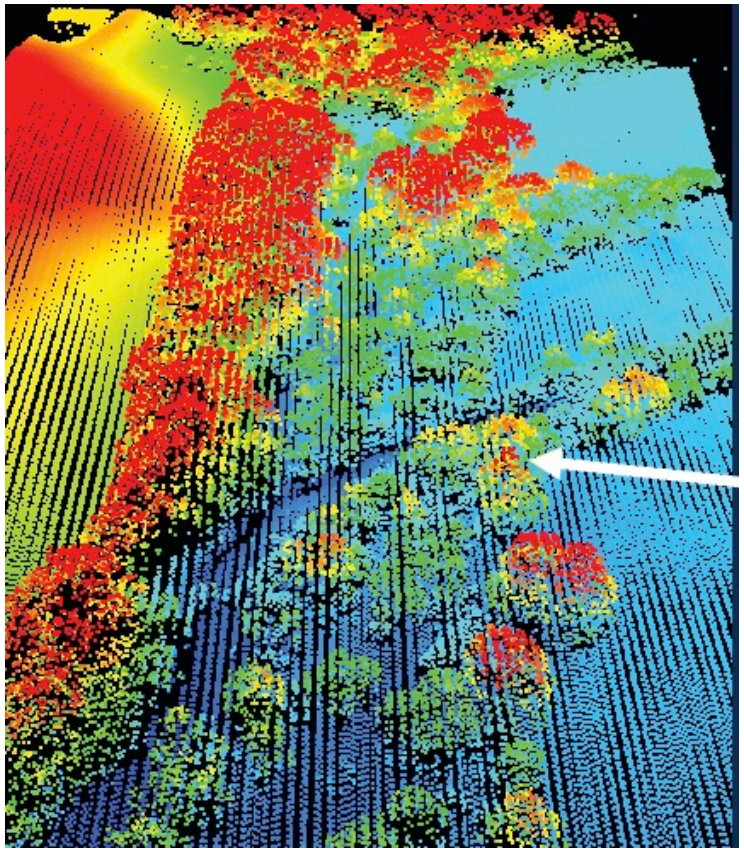
Components of an active remote sensing system
Transmit at nadir (directly beneath satellite)



Courtesy of Ted Strub, OSU CIOSS

LIDAR is an example of an active remote sensing system (airborne)





A. Nayegandhi, USGS