

Topic/Objective: Isoplethes, satellites, (Vis vs IR in cloud	Name: Hannah Daley
detection)	Class/Period: AOSC200
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Essential Question:

What is the difference between assessing surface and upper-level air? What can satellites tell us?

Questions: What are isoplethes and how to read them on a weather map?	 Notes: Isotherm: lines of constant temperature Isobars: lines of constant pressure A closed loop will indicate an area of pressure maxima (High Pressure "H") or minima (Low Pressure "L") → Tells us where wind will go: ALWAYS FROM HIGH TO LOW PRESSURE
What is the difference between a ridge and a trough?	Trough vs. Ridge Image: State of the second of the
What is Radar? How does it work and what does it tell me?	 Electromagnetic wave pulses are sent out and the instrument measures the energy that is returning. This tells use how fast things are moving AND the rough size of the objects. Can be used to detect precipitation (rain), insects, birds, weather systems. Doppler radar is very useful in measure the speed and direction of objects. Dual Polarization is useful in size and distinguishing types of precipitation (rain, hail)
What are the advantages and disadvantages to geostationary and polar orbiting satellites?	 Geostationary (parked in orbit and is always looking at the same spot Advantage: Constant streaming data Disadvantage: We do not have coverage of the poles and other side



	 of the planet Polar orbiting (laps the Earth hitting the pole each time). Advantage: gives very detailed information all over the country but at very limited times. Covers almost the whole globe. A lot of details at the poles. Disadvantage: Data is not given as frequently
Types of Satellite Imagery	 Visible (what we see) Advantage: Can see cloud thickness. The brighter the thicker they are because water is reflective Disadvantage: Can not use at night because it requires the sun to reflect off of the surface Infrared (Thermal or heat detection) Advantage: Can measure the temperature. Can infer the height of the top of the cloud based off the temperature. The colder the cloud the higher up in the atmosphere the cloud top is. Advantage: Can use at all times of the day Disadvantage:

Summary:

Today we discussed lines of constant temperature (isotherms) and pressure(isobars) as well as what they look like on a weather map. We began to talk about ridges and troughs in upper-level (aloft wind). Students should be very comfortable in understanding the meaning of these terms but there impacts will be discussed more in the future. Tim discussed the advantages and disadvantages of geostationary vs polar orbiting satellites and visible vs IR retreivals. Students should be able to easily recall these for exams.