24 October 2018

CLOUDS #1

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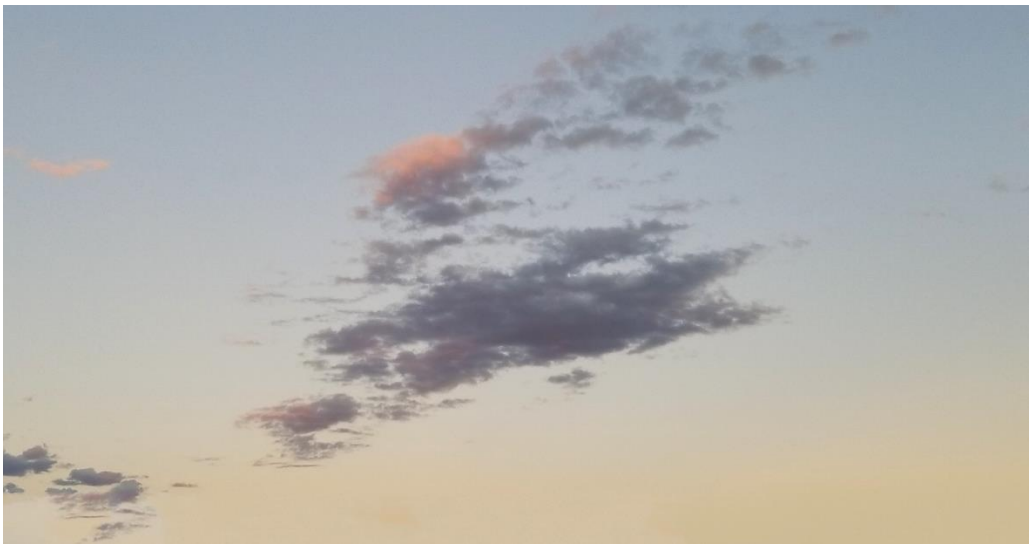
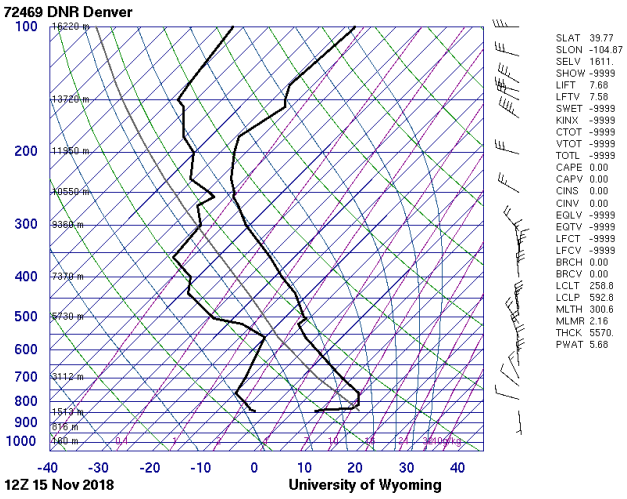
Flow Visualization: The Physics and Art of Fluid Flow
MCEN 4151/5151, FILM 4200



The students were assigned to take photographs and learn about the physics and wonders of clouds. The snapshot above was taken on October 13th, 2018 at 6:00pm mountain time and it was the night before a major snow storm.



As seen in the Skew-T Diagram, its detected that the CAPE reads 0.00 indicating these are stable cloud formations. By observing the temperature profile and the adibat starting at the top of the

boundary layer, it is noted that they begin to converge roughly around 4500m indicating that these are most likely cumulus clouds. Cumulus clouds have flat bases and are usually precursors to instable clouds indicating an incoming storm.

The camera that was used was a Samsung Galaxy S8. The camera settings could be seen below:

Camera	
Camera maker	samsung
Camera model	SM-G955U
F-stop	f/1.7
Exposure time	1/162 sec.
ISO speed	ISO-50
Exposure bias	0 step
Focal length	4 mm
Max aperture	1.53
Metering mode	Pattern

As seen in the image below, there was some post processing to just focus on the nearest clump of clouds. In the distance, one could notice the incoming unstable storm clouds.