Altocumulus Sunset

Clouds Second

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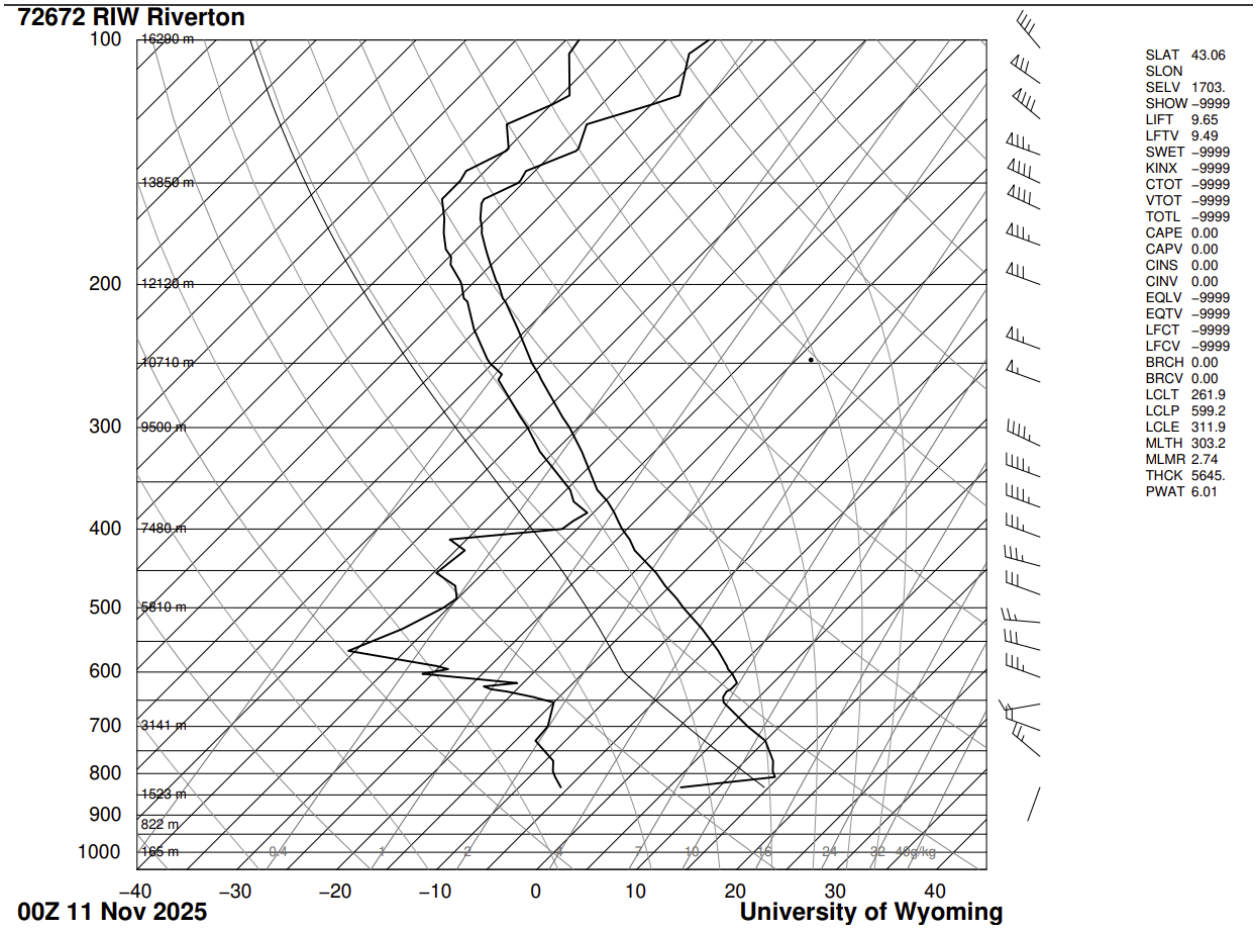
Taken on: Nov 10th 2025 at 5pm

Taken at: Boulder Colorado facing west

This image was taken for the second clouds assignment in Flow Visualization. The intent of the photo was to capture an interesting sunset with some cool atmospheric phenomenon. I was hoping to capture the really pretty sunset as well as the mountain wave formations.

The photograph was taken at the Bear Creek Apartments in Boulder Colorado. The phone camera was pointed west toward the mountains at around a 30 degree angle. The image was captured on November 10th at around 5pm. I noticed the cloud formation on my way down from a motorcycle ride in the mountains. The lighting from the sunset helped emphasize the wave structure within the clouds, providing the contrast needed to see the shape of the crests.



Skew T from RIW Riverton station [1]

These clouds would probably be classified as Altocumulus. From the skew-T above we can see that the atmosphere's temperature and dewpoint traces come close together, which is ripe for cloud formation at about 7.5k meters which is the elevation for Altocumulus. We can also see from the skew-T that the atmosphere is stable from the CAPE

value being 0. Winds from above the mountains flowing up, cooling and condensing and down warming and evaporating over them, causing this wave like pattern to appear on the bottom of the cloud formation.

The photo was taken with my I phone 16's .5x camera. Most of the settings were automatic but I adjusted the exposure down. In darktable I increased the detail setting, decreased the highlights, and increased the shadows, this helped bring out the detail in the waves in the bottom of the cloud formation. In addition I also raised the temperature setting to bring out the red of the sunset a bit more.

This image reveals the elegant wave patterns that form when stable atmospheric layers are changed by the mountainous terrain below. I really like how the vibrant sunset highlighted the crests of the waves, which made the formation more visible and striking. The image successfully captures the fluid physics I intended to find, clearly showing some mountain wave dynamics. Some limitations with the photo are that it was taken on a phone camera, and that the photo was taken with lots of buildings in the frame. From a rooftop with a nice digital camera this image would be even more amazing. Overall this photograph meets my intent and will forever keep me looking up at the amazing clouds around me.

Appendix

[1] Skew-T Diagram from the University of Wyoming Atmospheric Science Radiosonde Archive at https://weather.uwyo.edu/upperair/sounding.shtml

Unedited Image