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Clouds First

MCEN 5151

October 21, 2025

Figure 1: Final Image

Introduction

This image was the final product for my Clouds First assignment. In the Portland, OR area around this time of year, the weather is typically completely overcast or completely clear. With this in mind, I hoped to catch a rare day with some interesting looking clouds in the sky; however, I only saw a layer of overcast or rainy skies when I was outside and able to take a picture. The final chosen image was one of the more interesting looking layers of clouds that I saw during my search.

Image Circumstances

This image was taken on October 8th, 2025 at 5:39pm PST at the Pape Material Handling office building in Tigard, OR. The specific coordinates are 45.422119°N, 122.748816°W. The camera was facing West and angled upward at around 20° above the horizon. This day was one of the many overcast days that occur in the Pacific Northwest.

Cloud Identification

The clouds featured in this photo are stratus clouds. This is based on the apparent low level of the clouds as well as the fact that they cover the entire sky in a blanket of grey.

The closest sounding data came from Salem, OR. Figure 2 below shows the Skew-T plot at 00Z on October 9th, 2025 (corresponds with the evening of October 8th). The parcel path never crosses to the right of the temperature line, which means a stable atmosphere due to no LFC or CAPE value. The dewpoint and temperature lines are at nearly the exact same spot between 950 mb and 700 mb. They also converge between 500 mb and 400 mb. This indicates that lower level clouds (1000 m - 3000m) are very likely, which is seen in the final image. Based on the Skew-T plot and how dull the light from the sun is, it can be speculated that there is another layer of clouds around the 5800m to 7300m mark. If there is another layer, they would likely be altostratus clouds given their suspected altitude.

The day before the image was taken, the sky was completely clear. On the day of, the sky was completely overcast every single time I took a look outside. The following day was similarly overcast; though, the cloud layer was noticeably higher than on October 8th.

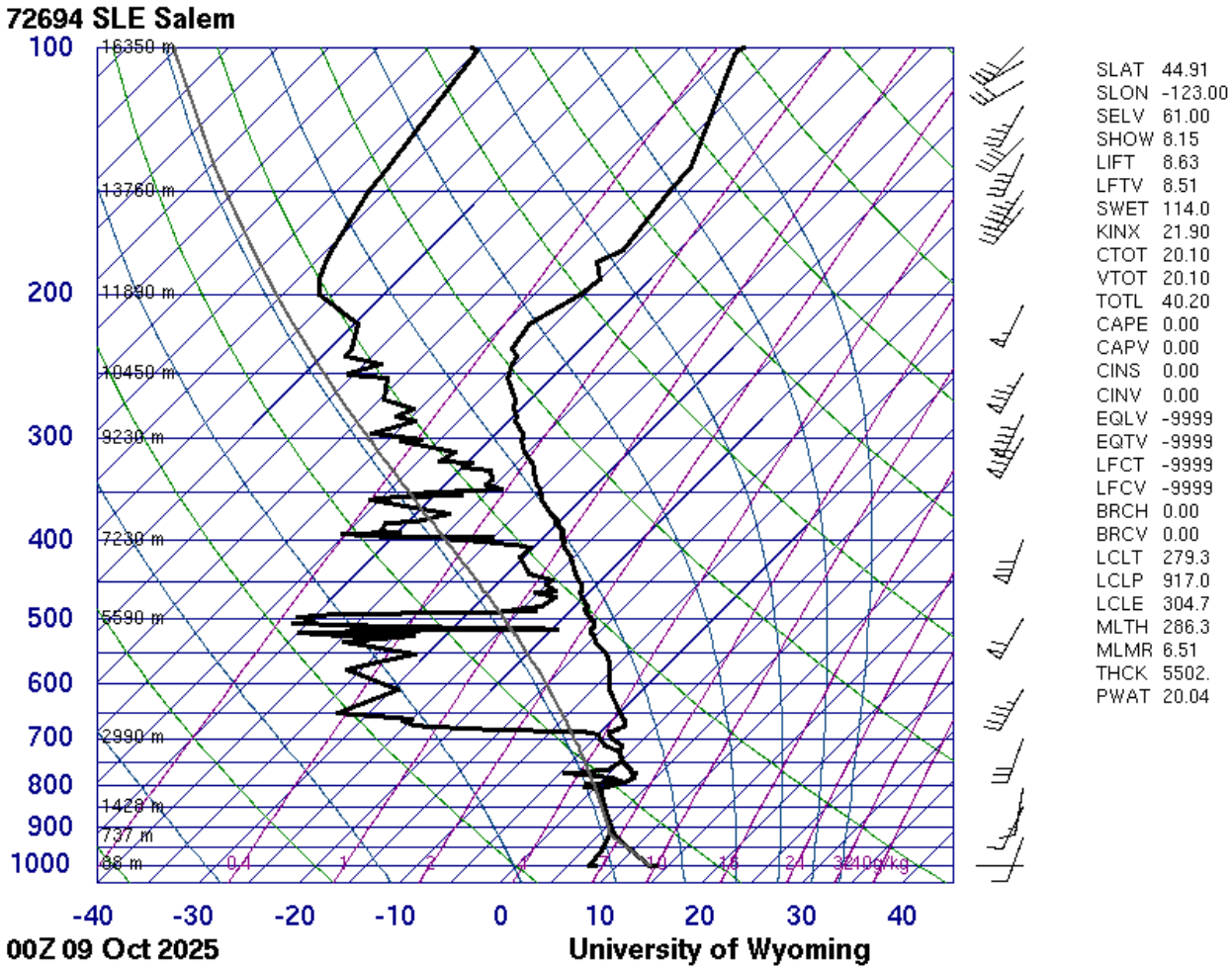

Figure 2: Skew-T Plot

Photographic Technique

The cloud was captured using a Sony ZV-1 camera. The capture settings were as follows: ISO of 125, shutter speed of 1/640, focal length of 9.4 mm, and an aperture of f/3.2. The original image had a resolution of 5496 x 3672 pixels, and the final cropped version is 5496 x 3037 pixels.

I did minimal post processing. Using darktable, I increased the contrast, lowered the exposure, used the tone equalizer to bring down the brighter parts of the image, and increased the blues slightly. This worked to bring as much contrast as possible to an otherwise monotone image. I also chose to crop the image so that the trees could frame the picture. This would serve to give the layer of clouds more context in regard to its scale. The original image can be seen below.

Figure 3: Original Image

Reflection

The final image shows the scale of an overcast sky while also having some interesting cloud shapes and outlines to look at. The post processing helped emphasize those shapes and outlines. Though I failed in my initial intent to capture a single interesting cloud, the final capture ended up being interesting in its own right. One thing I would like to dial in is my camera settings; I believe I am capable of getting a sharper image overall. In retrospect, it also may have been cool to create a timelapse of the sky, as the clouds appeared to be changing quite quickly indicating an active sky despite the overcast weather.