

CLOUD IMAGE 2

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Flow Visualization - CINE 4200

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I. INTRODUCTION

This report will talk in detail about the second cloud submission of the Flow visualization course at the university of Colorado boulder. It will discuss the artistic intent, the setting the submission picture was taken in, and finally the scientific analysis of the could behavior observed.

II. BACKGROUND

The image was chosen for submission due to the beautiful filled sky and the big range of highlights and shadows that was observed, and the composition of the sky and ocean below it. It was taken approximately at 7:00 AM on December 28th 2019 from one of the many untouched isolated beach along the cost of my country Oman facing the Indian ocean. The exact longitude and latitude are: $22^{\circ}27'19.4''N$ & $59^{\circ}49'45.2''E$. The cloud direction was east filling most of the sky.



Figure 1: Clouds Second submission - Edited

Looking at the atmospheric observation on that day, we see that there was low wind with a recorded max of 14 mph. No perception was recorded during that day or the days before it. The temperature was also steady during that period of days with highs around 77 Fahrenheit and lows around 63 Fahrenheit.¹

III. ANALYSIS

A more detail analysis could be obtained using a Skew-T plot. Since there was not a plot readily available for that Area, the closest point, Abu Dhabi international airport, data was used to obtain the plot. The shown plot is for December the 28th 2019, 12Z which resembles sunrise time (~6:00AM). The plot indicates a stable atmosphere with CAPE of 0.² The clouds in the picture are believed to be altocumulus due to their unique spread shape. However, I suspect that there are also a cirrus clouds in the picture because of the different lighting on some of them which indicate they are high in altitude.

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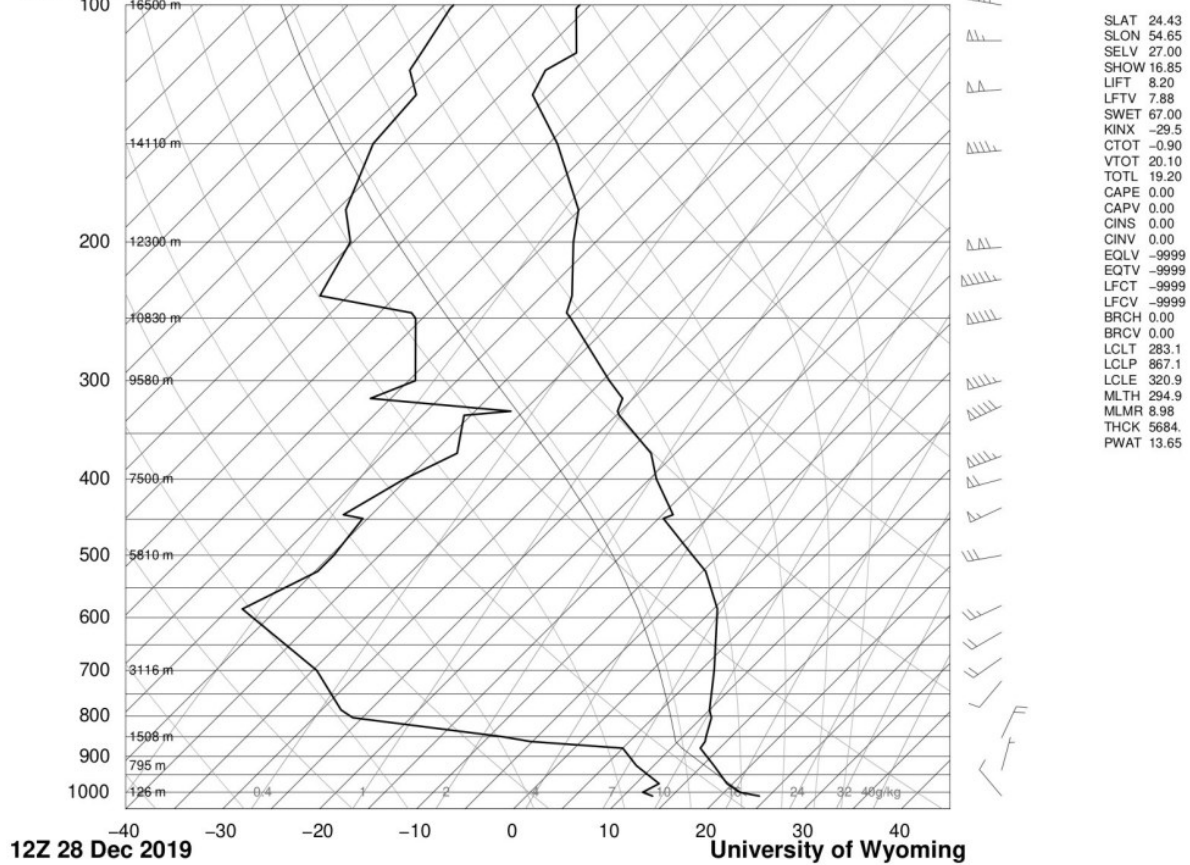


Figure 2: Skew-T plot showing the data for the image day-specific weather

The cloud image in this submission was taken using an iPhone 11 Camera with a normal lens setting on. The final image has a size of 2208×1122px and a focal length of 1.54 with ISO of 190. The F number was f/2.4 and shutter speed was 1/120. The image was not post-processed at all because I felt that the colors and composition were balanced enough and didn't need any adjustment.

IV. CONCLUSION

The image has a really special place in my heart because of the context behind it. The clouds in there really added to the beauty of it. I loved the long range of colors it gave especially with the sun slowly rising with that crimson red horizon. I am very satisfied with the end result. Maybe if I had my DSLR camera at the time I would have taken a better-quality image but I still found it aesthetic enough to be shown as a submission here.

References:

- 1- "Denver, CO Weather History." Weather Underground, TWC Product and Technology LLC,
<https://www.wunderground.com/history/daily/om/seeb/OOMS/date/2019-12-28>
- 2- Atmospheric Soundings, University of Wyoming Department of Atmospheric Science,
Oct. 2020, <https://www.weather.uwyo.edu/upperair/sounding.html>