

ARRIVAL OF THE CLOUD: REPORT

Martin Allsbrook // Clouds Second // ATLS 4151-001 (Undergrad)



Context

This is my second cloud image for flow visualization. I had been searching for potential clouds for this assignment and eventually found this beautiful cloud peaking over the flat irons. I really liked the way the cloud appears to be coming over the flatirons. It almost feels like an alien spaceship cresting the mountains before launching an attack, hence the name of this photo. The cloud's strange UFO-like shape, wispy edges, and height lead me to believe it is an altocumulus lenticular cloud.

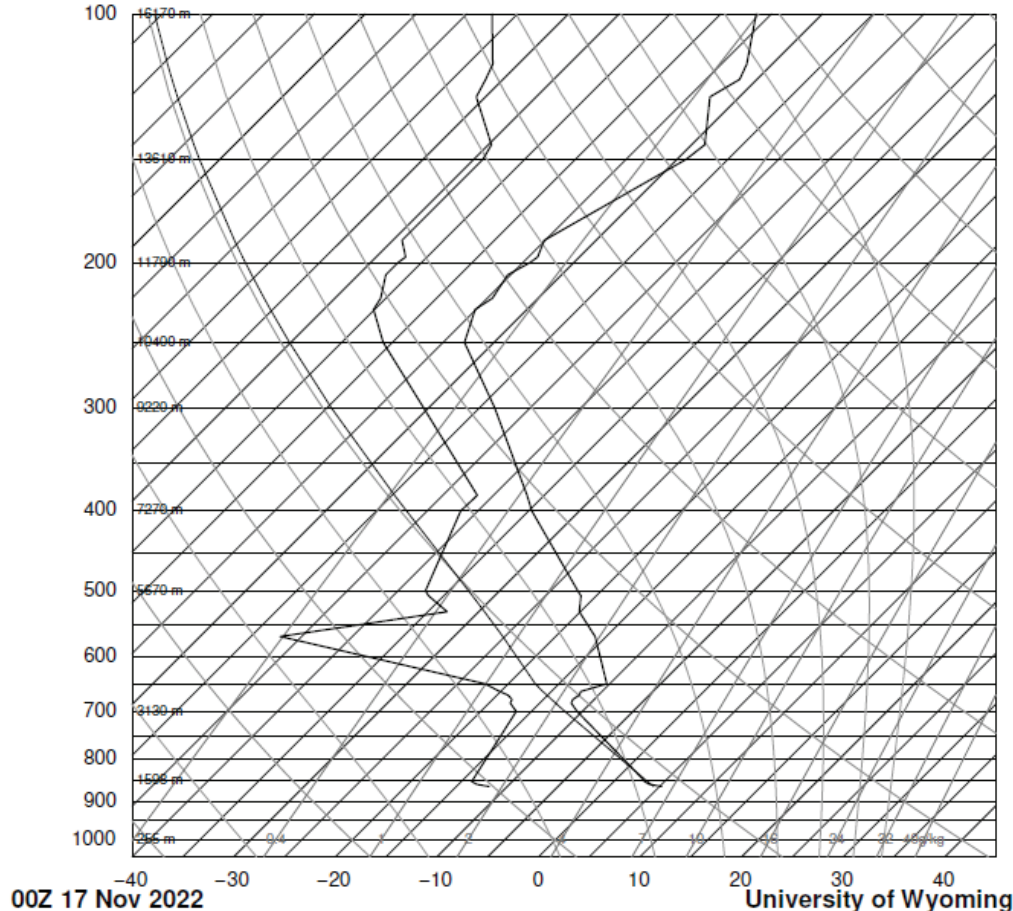
Setting

The image was taken on November 16 2022 at 5:13pm. It was taken in Boulder, Colorado at 40.016891, -105.261981, with an elevation of 5300ft. The camera was facing West by Southwest, angled about 20 deg up. Judging from the cloud type and lighting I think the clouds in the image are very high and far behind the flatirons, rather than lower and closer.

Cloud Conditions

I believe the cloud in this image is an altocumulus lenticular cloud. There are no other significant clouds in the image and the sky that day was relatively clear in general. This and the skew-t diagram lead me to believe the atmosphere was relatively stable that day. Cumulus clouds are not common in stable atmospheres but the structure of the cloud leads me to believe it is altocumulus lenticular. If this were the case I would think that the mountains created an instability that allowed the cloud to form. The circumstances and skew-t lead me to believe these clouds are on the lower end of the height range for altocumulus lenticular clouds, likely forming around 9000 ft.

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SLAT	39.11
SLOD	
SELV	1475.
SHOW	10.93
LIFT	10.74
LFTV	10.72
SWET	42.00
KINX	5.30
CTOT	8.30
VTOT	25.30
TOTL	33.60
CAPE	0.00
CAPV	0.00
CINS	0.00
CINV	0.00
EQLV	-9999
EQTV	-9999
LFCT	-9999
LFV	-9999
BRCH	0.00
BRCV	0.00
LCLT	256.0
LCLP	651.0
LCLL	294.2
MLTH	289.4
MLMR	1.55
THCK	5415.
PWAT	4.31

Photographic Technique

This image was taken with an iPhone 14 Pro. The setting for the original photo were: ISO: 640, focal length: 24mm, F stop: f / 1.78, Shutter speed: 1/40 sec. The original image was also 4032 x 3024px and the cropped version was 4032 x 1128px.

The original image contained massive amounts of distractions in the foreground that I had to remove in order to keep the cloud as the focal point of the image. These included streetlights, windows and branches. The narrow horizontal crop focused the image on the cloud, and did a lot to help with the distractions but many of the distracting elements were still visible. Most of these were removed by duplicating nearby pixels or blacking out areas of the image, like windows. I am quite happy with these edits as I feel they are not too noticeable in the final image, and they do quite a bit to enhance the image. Lastly I felt the star added to this very "Boulder" image and therefore decided to keep it.

Edited



Unedited



Reflection

I am quite pleased with this image, especially the edits made after. I feel like the original image was distraction heavy which could have been improved upon by finding a better location, but I was in a time crunch when I took it so I'm happy with what I got. I'm much happier with the final image, the editing perfectly places the focal point on the cloud while keeping things like the star that add to the aesthetic.