

MoDLS Logbook

IOP #	2
Crew Members	Matthew Starke, Joshua Huggins
Arrival Time/Date (UTC)	2022 Mar 30 1340Z
Latitude	33.2336933
Longitude	-88.5707833
Heading	270
Elevation (m)	98
Fully Operational Time/Date (UTC) *List any non-operational equipment below*	2022 Mar 30 1405Z
Departure Time/Date (UTC)	2022 Mar 31 0130Z

Lidar Scan Strategies, Sounding Types & Balloon Launch Times, Observations, Equipment Issues, Notes, etc.

Time (UTC)	Observations/Notes
1405Z	Operational
1410Z	Waiting until 15Z for first launch
1410Z	Sun coming out
1418Z	A lot of low clouds nearby, but none overhead - lidar sees little
1420Z	SASSI still won't see the GPS unit - not wasting time with it
1423Z	News reporter en route to MoDLS
1424Z	Lat/lon from Google Maps
1425Z	MPR taking its time
1426Z	Lidar scan file 1 disabled earlier to try to keep a 5-minute cycle with VADs
1448Z	Setting up for sonde

1450Z	Had to click pair twice but it actually worked this time
1455Z	Surface data file not found
1500Z	Preparing sonde
1504Z	Launched
1505Z	22.4 C, 71%, 180deg, 10 m/s, 999 hPa, OVC, low clouds not full
1506Z	MPR still low quality
1510Z	Lidar is not raised per Knupp's rec
1519Z	Collect Now returned inaccessible file, but it's Y:/sfc instead of Y:/data/sfc
1524Z	Lidar focus range in 800m, PBLD is 1.5km
1536Z	Interview beginning
1539	Sonde descending from 9.5km
1602Z	Launched
1605Z	Focus range set to 500m
1606Z	Focus range set to 800m, pulse length to 48m
1614Z	Averages set to 15000 (from 5000)
1641Z	MPR data still looks horrid compared to sondes
1658Z	<p>Launch at Wed Mar 30 16:03:01 2022 from 33°14.0262N 88°34.2393W Ground height 79 m MSL. Air pressure 1009.75 hPa at MSL (calculated). Falling, highest altitude 12615 m AGL (12694 m MSL) over 33°37.1618N 87°54.4164W Peaked 90393 m away, 54 min 53 sec after launch. Mean rise speed 4.4 m/s. Mean horizontal speed 27.4 m/s Last known position 7799 m MSL at 33°39.4116N 87°44.2816W Fall speed 11.0 m/s.</p>
1701Z	2779 launched
1712Z	Wind really picked up for a bit

1723Z	Just realized box is not pointed the right way - it's roughly northeast
1728Z	Corrected box, last few minutes of surface data are are not 8m, may have partially blocked a lidar VAD
1738Z	Two people have stopped now out of curiosity
1746Z	Recently figured out how to make graphs in datalogger
1752Z	Launch at Wed Mar 30 17:03:51 2022 from 33°14.5679N 88°34.4138W Ground height 441 m MSL. Air pressure 1052.17 hPa at MSL (calculated). Ascending at altitude 12284 m AGL (12725 m MSL) over 33°41.4996N 87°52.7826W Now 81394 m away, 47 min 36 sec after launch. Mean rise speed 4.1 m/s. Mean horizontal speed 28.5 m/s
1752Z	Preparing sonde 2780
1808Z	Sounding just got radio/GPS fix at 1800m, so there is no profile below that; the T/Td/p data does still seem to be there
1817Z	Windsond thinks ground is 1758 m MSL, so the plot is probably going to be utterly useless
1825Z	Third person stopped
1838Z	Winds have picked up a bit, pole is creaking once in a while
1846Z	Changed lidar gate length to 66m, hoping to get useful velocity data
1847Z	MPR data still not good; health status shows system / RCV0 needing service
1848Z	Winds have let up a bit (11 m/s -> 7 m/s) and backed (190 deg -> 180 deg)
1855Z	Kill sonde Launch at Wed Mar 30 18:06:42 2022 from 33°18.4357N 88°34.3227W Ground height 1758 m MSL. Air pressure 1223.63 hPa at MSL (calculated). Ascending at altitude 12721 m AGL (14479 m MSL) over 33°47.3037N 87°47.3155W Now 90129 m away, 48 min 12 sec after launch. Mean rise speed 3.8 m/s. Mean horizontal speed 31.2 m/s

	179.9mb 12877
1855Z	Prep sonde 5152
1900Z	5152 launched
1909Z	19-20 m/s gusts observed. Without other instruction, tower will be dropped to half at first 25 m/s gust.
1915Z	Lidar gate length returned to 48m
1915Z	Wind speed is varying more sinusoidally lately, especially starting 1852Z
1922Z	Showers beginning to develop just to the west of US-45
1935Z	Expecting some rain in the next 10 minutes
1940Z	Light rain
1944Z	Rain end?
1947Z	Back up to 19 m/s gusts after having been below 15 m/s for 30 minutes
1948Z	Rain should be clear for 20Z sounding
1949Z	Hearing more creaking again, not sure if it's from the tower
1957Z	Prep sonde
2000Z	Launched
2002Z	Doesnt' have radio fix again. It had 88% reception earlier and no error on radio fix.
2008Z	Manually set sonde state to rising, radio fix came back shortly after - probably a coincidence
2010Z	Very light rain
2013Z	Rain end
2031Z	Shut down lidar for restart just to see if that helps with poor backscatter
2036Z	Start lidar back up
2040Z	Start MPR back up

2041Z	Start sfc back up (or not)
2041Z	Restarting didn't make any difference for the lidar
2044Z	Start surface logging back up plus collect
2045Z	All seems well, minus quality of data
2050Z	2001Z sounding can't be plotted
2053Z	Prep sonde 5199
2056Z	Prep sonde 6956; it beeps when turned on, though the light still flashes. Will consider it defective for now since we have extras.
2115Z	Launched. Two balloons popped in the process.
2116z	Very light rain briefly
2122Z	Winds getting up to 20 m/s again
2129Z	Rain begins
2130Z	Also elevation was manually entered for this sonde, but the ascent was detected automatically
2131Z	Rain ends
2132Z	Shower to our south is looking decent with a small meso - suspect it will become a SC at state line
2133Z	Rain begins
2136Z	Heavy rain
2138Z	Rain lightened a bit, but expecting to potentially lose the sonde once rain is to our northeast
2139Z	Wind dipped below 5 m/s for the first time in who knows how long
2140Z	Rain end?
2142Z	Someone has entered the church
2148Z	Datalogger didn't pick up data for about a minute, then collected it all at once
2149Z	Receiving way more pings from the sonde than normal - one per second for 30 seconds straight

2150Z	It looks like there is some interference - it occasionally receives a ping at a different altitude than where it should be. Worth noting the battery is low too (partly because we spent so much time trying to get it in the air in the first place)
2152Z	Prep sonde 6955
2153Z	Beeped
2154Z	Prep sonde 6958
2200Z	launched
2212Z	Raining for a bit now
2212Z	Had to terminate the other sonde before this one would work, which shouldn't be the case
2212Z	Also, newer sondes just beep when ready now I guess
2219Z	Heavy rain for a bit now
2221Z	Vis < 1 mile
2224Z	Wind consistently ~15 m/s
2224Z	Rain fell off for a time, but has picked back up
2226Z	Rain let up
2227Z	Two more vehicles stopped at the church - appears the first person was a janitor, and they are most likely still inside
2228Z	Prep sonde 6955 for 2245Z launch
2229Z	Light/mdt rain again, one of the last cells before the pre-QLCS clear
2231Z	Rain end
2238Z	Prepping to launch
2245Z	Launched
2253Z	Fourth/fifth person stopped
2259Z	Wind picking up, T rising (0.5 C in 1 minute)
2306Z	Light rain; beginning of stratiform. Line is beginning to break up, but broken parts do not yet look severe

2310Z	Generated plots since there most likely isn't any more data to come in, but not terminating yet
2316Z	Winds very gradually backing
2318Z	Winds peaked at 19 m/s again
2320Z	A few more data points past the image I posted, but they're so sparse I don't think it matters (yet)
2322Z	Yet a few more points - but none of them have wind so who cares really
2327Z	Not sure if I noted it but in one of the last two launches, one balloon popped (in addition to the two-pop launch)
2333Z	Prepping sonde 6959 just in case
2335Z	About to enter the more solid leading stratiform
2342Z	Lightning observed - tower lowered, sonde turned off
2355Z	CG
0019Z	Lightning increasing in frequency rapidly, but not too close
0020Z	Circulation that was heading here is still very broad and a bit weaker than 30 minutes ago
0049Z	Seventh person stops
0102Z	A lot of standing water - some concern for drivability on the low-lying road that leads to the church from the highway