

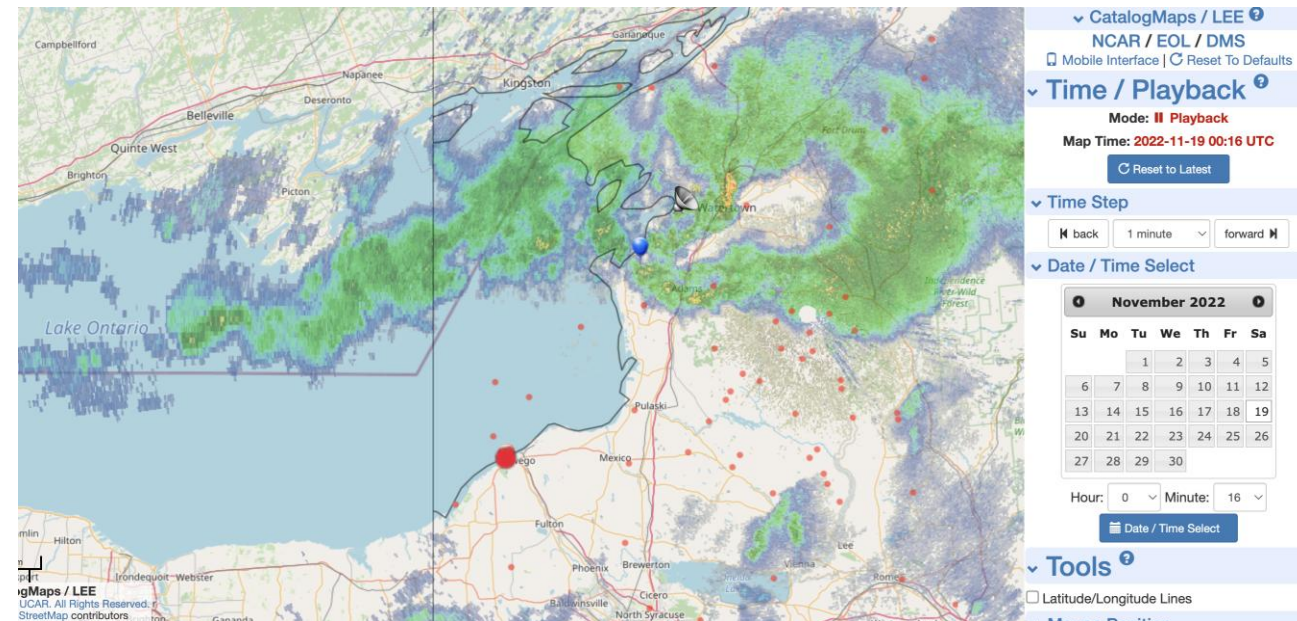
Project LEE

Environmental sounding &

Surface precipitation data collection and access

Environmental sounding data

- 28 soundings
- SUNY Oswego Shineman weather deck (107 m MSL); see next slide for picture of deck
- 25 were iMet-3050A sondes, 3 were Vaisala RS41
- 2 failed, 3 for Project IMPACTS
- Sharppy and DigiCora files (iMet) and edt files (Vaisala) in archive
- See catalog reports for details of each launch:
<http://catalog.eol.ucar.edu/lee/344061/files>



Rigging antenna in strong winds



<https://twitter.com/wxkaitlynj/status/1620857869355855873?s=20>

Sounding data cont.: Dates and times

- IOPs: 1, 2a, 2, 4, 5, 6, 7, 8, 10, 11
- 20220901-0159Z, 20220927-0903Z, 20220927-1326Z, 20220928-0148Z, 20221113-1224Z**, 20221117-0916Z*, 20221117-1533Z*, 20221118-2357Z**, 20221201-0516Z*, 20221218-0406Z*, 20221218-1258Z*, 20221219-1235Z*, 20221219-1648Z*, 20221227-1202Z*, 20230113-0504Z*#, 20230119-2326Z*#, 20230124-2012Z*, 20230126-0011Z*\$, 20230127-0617Z*, 20230128-1641Z*, 20230129-1424Z*#, 20230201-1744Z*, 20230201-2355Z*, 20230203-0156Z*, 20230319-0707Z*, 20230319-1021Z
- * KML files for 3D sonde locations available, ** Vaisala sonde (iMet system down), # IMPACTS sonde, \$ elevated convection event with lightning
- Failed launches: 20221113-1200Z**, 20230124-2000Z

Sample sounding data files

OSW20230319_07Z_sharppy.txt

```
%TITLE%
0swe 230319/0707

  LEVEL      HGHT      TEMP      DWPT      WDIR      WSPD
-----
%RAW%
997.20,    103.00,    -5.00,    -12.42,    220.00,    8.70
992.71,    138.46,    -4.84,    -13.40,    222.96,    22.01
992.21,    142.44,    -4.86,    -13.41,    222.96,    22.14
991.74,    146.12,    -4.88,    -13.45,    222.32,    22.18
991.28,    149.77,    -4.91,    -13.45,    221.67,    22.24
990.83,    153.37,    -4.96,    -13.49,    221.54,    22.28
990.39,    156.84,    -4.97,    -13.55,    221.84,    22.20
989.95,    160.36,    -4.99,    -13.68,    222.27,    22.08
989.51,    163.79,    -5.02,    -13.64,    222.70,    22.03
989.08,    167.26,    -5.05,    -13.72,    222.86,    22.21
988.47,    172.08,    -5.09,    -13.74,    222.69,    22.52
988.07,    175.23,    -5.12,    -13.75,    222.67,    22.82
```

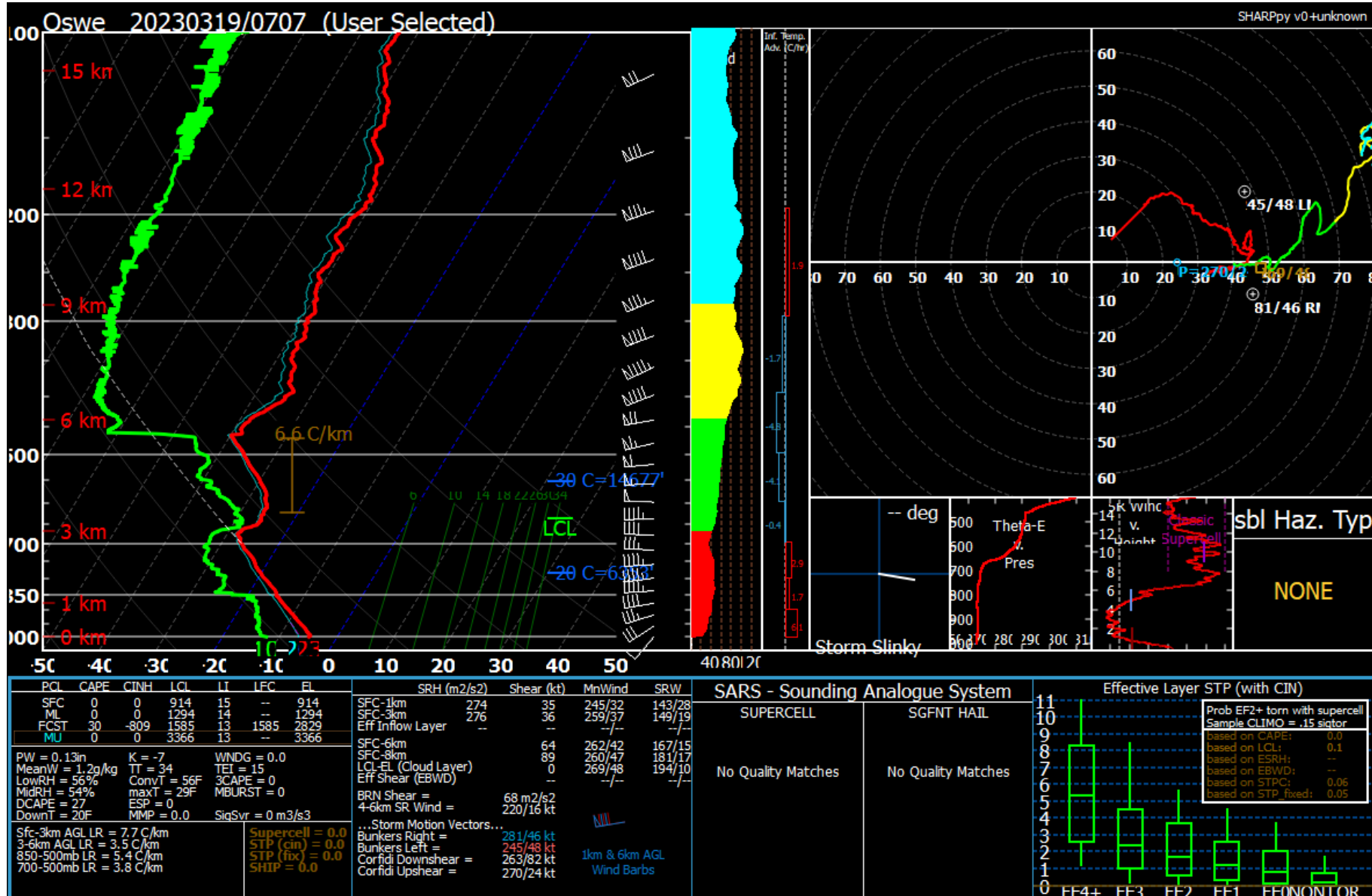
OSW20230319_07Z_DigiCora.txt

```
0 1 // /// 4346 -7654 103 23 3 19 7 7 KOSW2023031907Z
/////
0 103 997.2 -5.0 56 -12.4 220 4.5
10 164 989.5 -5.0 51 -13.6 223 11.3
20 199 985.1 -5.4 52 -13.8 222 12.1
30 235 980.5 -5.7 52 -13.9 224 13.0
40 272 975.9 -6.0 52 -14.2 225 14.1
50 316 970.5 -6.3 52 -14.5 228 15.3
60 369 963.9 -6.7 52 -15.0 234 15.9
70 430 956.4 -7.3 54 -14.9 238 16.0
80 491 948.9 -7.8 55 -15.2 240 16.7
90 551 941.6 -8.4 58 -15.3 241 16.6
100 607 934.8 -8.9 58 -15.6 244 16.5
110 658 928.7 -9.3 59 -15.9 246 17.2
120 704 923.2 -9.6 57 -16.6 249 17.6
```

edt_20221118_2357.txt

0	110	1001.0	0.0	67	220	3.00	0	43.455	-76.539
1	121	999.7	0.3	66	215	4.29	11	43.455	-76.539
2	126	999.0	0.3	66	214	4.90	16	43.455	-76.539
3	132	998.3	0.2	65	214	5.37	22	43.455	-76.539
4	136	997.7	0.2	65	214	5.75	29	43.456	-76.539
5	142	997.0	0.1	65	214	6.08	37	43.456	-76.539
6	150	996.2	0.1	65	215	6.36	43	43.456	-76.539
7	155	995.5	0.0	65	215	6.64	48	43.456	-76.539
8	160	994.8	0.0	65	215	6.98	55	43.456	-76.539
9	166	994.1	-0.1	66	215	7.37	63	43.456	-76.539
0	173	993.4	-0.2	66	216	7.76	74	43.456	-76.538
1	178	992.7	-0.2	66	216	8.14	85	43.456	-76.538
2	181	992.1	-0.2	65	216	8.49	97	43.456	-76.538
3	187	991.4	-0.2	65	217	8.77	108	43.456	-76.538
4	192	990.7	-0.3	65	217	9.01	120	43.456	-76.538
5	198	990.1	-0.3	65	217	9.23	132	43.456	-76.538
6	202	989.4	-0.3	66	218	9.44	144	43.456	-76.538
7	209	988.8	-0.4	66	218	9.66	156	43.456	-76.538
	216	988.1	-0.5	66	219	9.89	168	43.457	-76.538
	219	987.5	-0.5	66	219	10.15	180	43.457	-76.538
	223	986.9	-0.6	66	220	10.41	191	43.457	-76.538
	229	986.3	-0.6	66	220	10.67	202	43.457	-76.537
	233	985.7	-0.6	66	221	10.91	212	43.457	-76.537
	238	985.1	-0.7	66	222	11.13	224	43.457	-76.537
	243	984.5	-0.7	67	223	11.33	236	43.457	-76.537
	248	983.9	-0.7	67	223	11.51	248	43.457	-76.537
	255	983.3	-0.8	67	224	11.68	261	43.457	-76.537
	258	982.7	-0.9	67	225	11.83	273	43.457	-76.537
	262	982.0	-0.9	67	226	11.97	283	43.457	-76.537
	267	981.4	-0.9	67	226	12.10	294	43.457	-76.537
	273	980.8	-0.9	68	227	12.21	305	43.458	-76.537
	278	980.1	-1.0	68	228	12.32	317	43.458	-76.537
	285	979.5	-1.0	68	229	12.41	331	43.458	-76.536
	290	978.9	-1.0	67	230	12.50	345	43.458	-76.536
	295	978.2	-1.0	67	230	12.58	360	43.458	-76.536
	299	977.6	-1.0	66	231	12.65	374	43.458	-76.536
	302	977.0	-1.0	66	232	12.72	389	43.458	-76.536
	309	976.4	-1.0	66	233	12.78	403	43.458	-76.536
	314	975.7	-1.1	66	233	12.83	417	43.458	-76.535
	319	975.1	-1.1	65	234	12.89	430	43.458	-76.535
	325	974.4	-1.0	65	235	12.94	442	43.458	-76.535
	331	973.8	-1.0	65	235	12.99	453	43.458	-76.535
	336	973.1	-1.1	65	236	13.03	464	43.458	-76.535
	341	972.5	-1.1	66	237	13.07	474	43.458	-76.535
	347	971.8	-1.2	66	237	13.11	486	43.458	-76.535
	351	971.2	-1.3	66	238	13.15	497	43.459	-76.535
	357	970.5	-1.3	66	238	13.18	510	43.459	-76.534
	363	969.9	-1.3	66	239	13.22	523	43.459	-76.534
	368	969.2	-1.3	66	240	13.25	537	43.459	-76.534
	374	968.6	-1.4	66	240	13.29	551	43.459	-76.534
	380	967.9	-1.4	66	241	13.32	565	43.459	-76.534
	384	967.2	-1.5	65	241	13.36	579	43.459	-76.534

Sample sounding plot (using sharpypy file)



Environmental soundings cont.

- Sounding data time resolution 1-10 s depending on file (see ReadMe)
- Technical data sheets available on UCAR EOL webpage
<https://data.eol.ucar.edu/dataset/622.004>
- TTAA/BB format files also available upon request
- Questions???

Surface observational data (SUNY Oswego teams)

- 1-3 “snow” teams collected data during each IOP.
- Usually with EFM and/or DOW location (not in March).
- Recorded p-type at ground, snowfall, liquid equivalent, snow depth, crystal photographs (embedded in Excel files – start date and time and location in filenames), and notes
- Variable time intervals (e.g., when p-type changed, tried to do hourly snowfall)
- See Readme for more details (e.g., dates and locations – exact location data can be obtained from EFM sonde/DOW Readmes)
- Used NWS COOP rules for measuring snowfall, Snowmetrics weighing gauge for liquid equivalent
- Photographs from smartphone and on black cloth with stitched-in squares (1.75” side length – see pic in 2 slides)

Surface precipitation – sample file

202211181940utc_DOW_KART

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Open recovered workbooks? Your recent changes were saved. Do you want to continue working where you left off? Yes No

G12

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Location: KART												
2	Observers: Michael Pagnanelli, Thomas White												
3													
4		Time (UTC)	Precipitation Type	Precipitation Amount (Inches of Liquid)	Snowfall (In)	Snowdepth (In)							
5		1940-2040	Dendrites	X	0.80	X							
6		2040-2140	Dendrites	X	0.20	X							
7		2140-2240	Graupel	X	0.20	16.00							
8		2240-2340	Graupel	X	0.40	X							
9		2340-0040	Graupel	X	0.40	17.00							
10		0040-0140	Dendrites	X	0.20	X							
11	6hr Obs	1940-0140	X	0.28	2.20	X	*measured hourly by taking difference at hourly intervals, cleared board every 6 hrs						
12		0140-0240	Dendrites	X	0.30	X							
13		0240-0340	Dendrites	X	0.70	X							
14		0340-0440	Dendrites	X	1.50	22.00							
15		0440-0540	Dendrites	X	1.50	X							
16		0540-0640	Dendrites	X	1.00	X							
17	6hr Obs	0140-640	X	0.55	5.00	X							
18													
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Sheet1

Ready Accessibility: Good to go 100%

Sample precipitation data file cont.

202211182008utc_Sonde_HendersonHarbor

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General

Conditional Formatting Insert Delete Format

Format as Table Cell Styles Sort & Filter Find & Select

Create and Share Adobe PDF


Open recovered workbooks? Your recent changes were saved. Do you want to continue working where you left off? Yes No

A17

	A	B	C	D	E	F	G	H	I	J
1	Henderson Harbor, NY (North 4)									
2	Observers		Times (UTC)	Precipitation Type	Precipitation Amount (liquid)	Snowfall	Snowdepth			
3	Aidan Alwang		2008	Graupel	no obs	no obs	12"			
4	Zoe Bush		2039	Large Dendrites	no obs	1"	no obs			
5	Ezekiel Caldon		2252	Graupel	no obs	no obs	no obs			
6	Thomas Cerra		0034	Flurries	no obs	no obs	no obs			
7	Max Gallo		0130	Graupel	no obs	no obs	no obs			
8	Sarah Gryskewicz		0219	Large Graupel	no obs	2.6"	16"			
9	Shaun Laurinaitis									
10	Kayla Lewis	Precipitation Type	Snow			Snow				
11	Kaitlyn Jesmonth	Pictures	20221118_2039UTC			20221118_2124UTC				Graupel 20221118_0157UTC
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Some minor errors still (e.g., date here)

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Sheet1

Ready Accessibility: Investigate 110%


Sample precipitation file cont.

202211201700utc_Sonde_OswegoHome2Suites

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Open recovered workbooks? Your recent changes were saved. Do you want to continue working where you left off?

A29 Following photos were taken at launch site.

	A	B	C	D	E	F	G	H
1	IOP 3 - 11/20/22							
2	Location	Observer	Obs. Time (UT	P Type	P Amt	Snowfall	Snow Depth	Notes
3	Oswego, NY (Home2 Suites)	Statum	1148	None	0	None	Not taken	Snow band was located north of the launch site at this time. Snow depth was not measured, but
4	Oswego, NY (Home2 Suites)	Statum	1403	-SN	Not taken	Not taken	Not taken	Light snow with some graupel mixed in on the edge of the band. LE band was choppy with pre
5	Oswego, NY (Home2 Suites)	Statum	1611	SN/BLSN, graupel	Not taken	Not taken	Not taken	Failed sonde launch around 1600 UTC, possibly as a result of graupel and strong winds.
6	Oswego, NY (Home2 Suites)	Statum	1614	Heavy graupel/BLSN	Not taken	Not taken	Not taken	Strong sustained winds. Not an official obs, but winds were probably sustained at 30 mph or gr
7	Oswego, NY (Home2 Suites)	Statum	1641	Heavy graupel/BLSN	Not taken	Not taken	Not taken	Very large graupel pellets observed.
8	Oswego, NY (Home2 Suites)	Statum	1716	Heavy graupel/BLSN	Not taken	Not taken	Not taken	Very large, hail-like graupel pellets continue. Pics from students show some larger than 1/2" in
9	Oswego, NY (SUNY Oswego Campus)	Statum	1744	Heavy graupel/BLSN	Not taken	Not taken	Not taken	Returned from launch site after 1740 UTC. Whiteout conditions with heavy graupel.
10								
11								
12	Photos (1st one was taken at SUNY Oswego Campus- Shineman Science Center after the launch.)							
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Sheet1

Ready Accessibility: Good to go 100%

Surface data cont.

- Please see <http://catalog.eol.ucar.edu/lee/344063/files> for more good details from snow teams for each IOP.
- Questions???