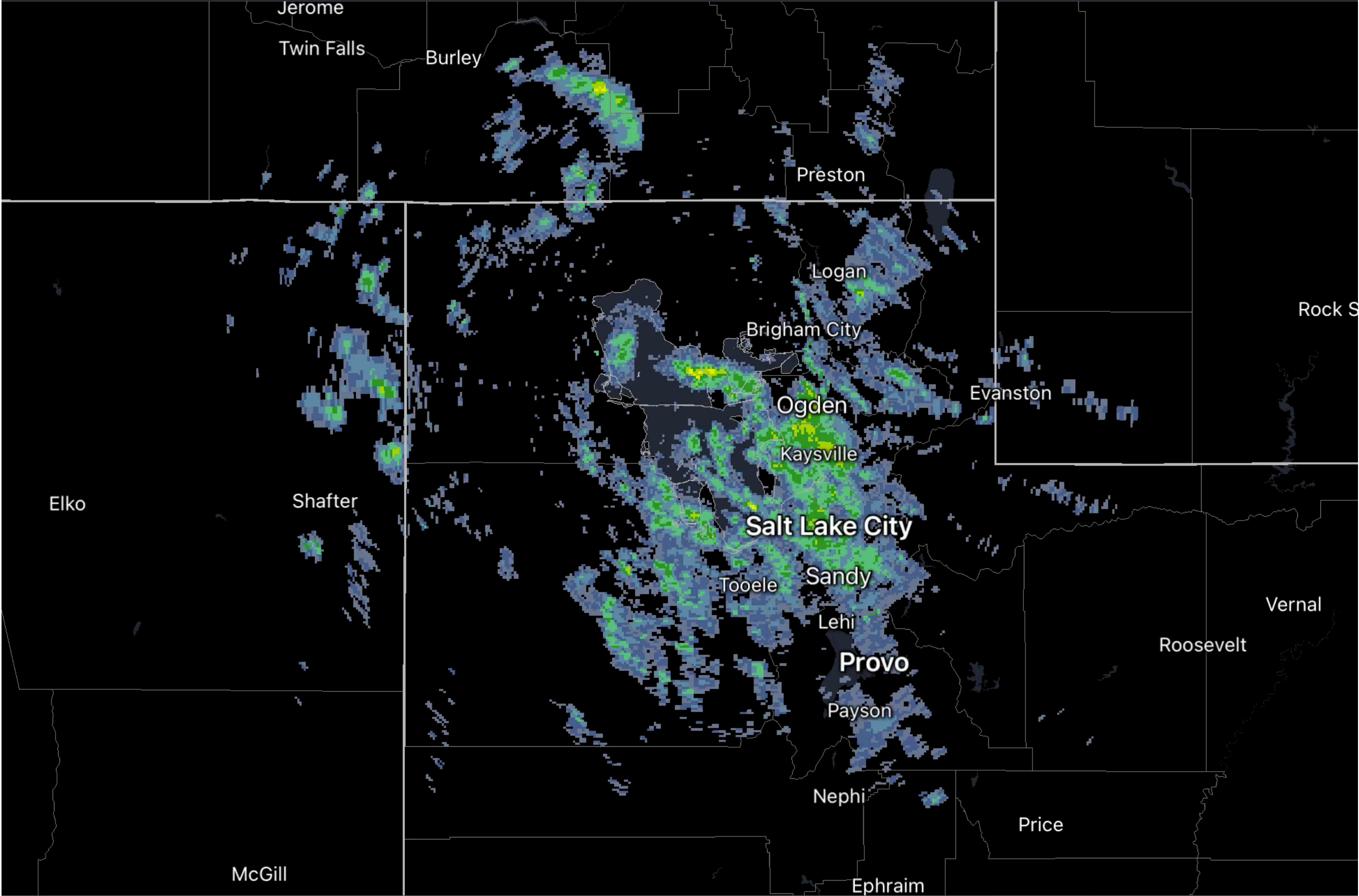
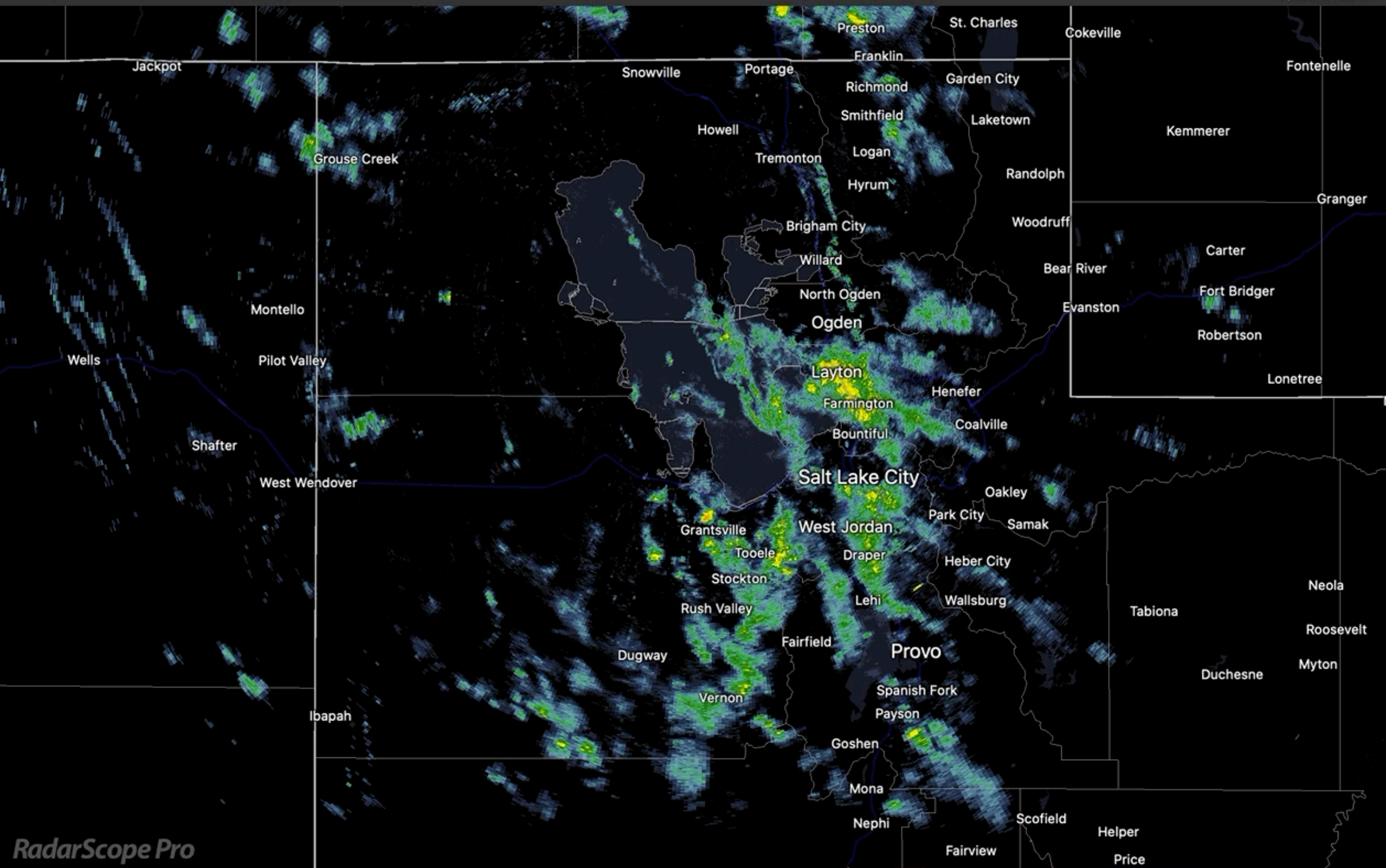
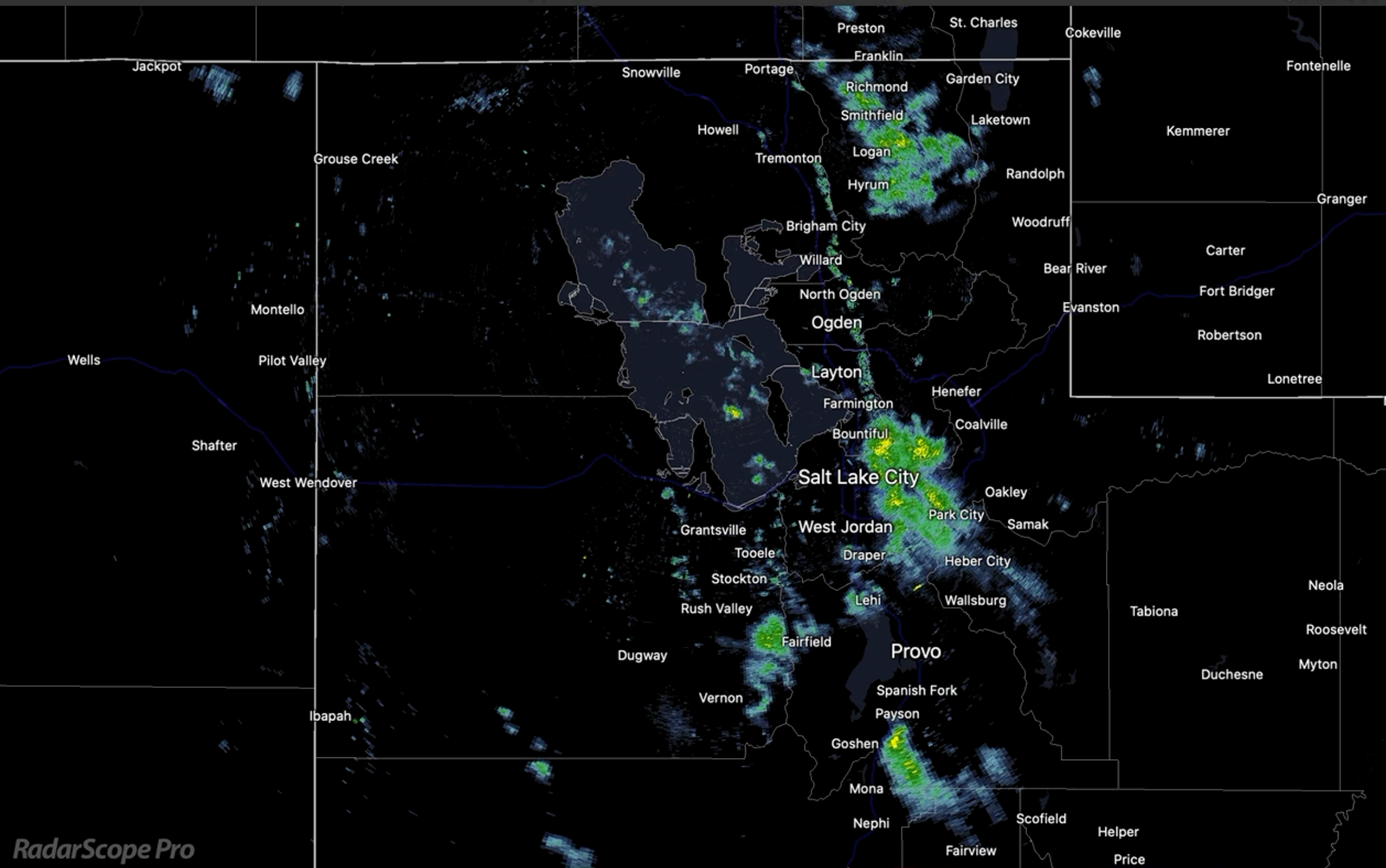
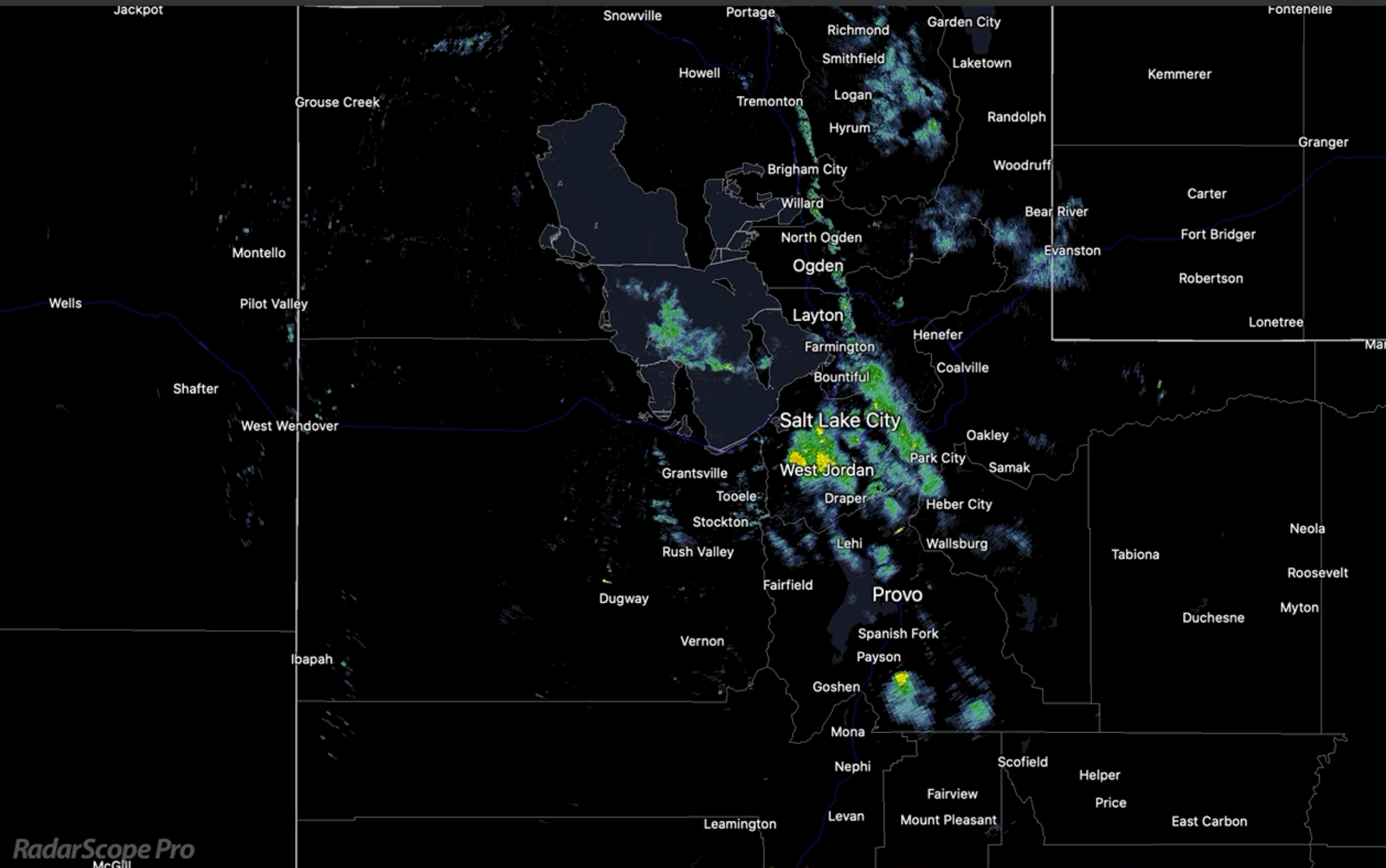


GSLE March 18, 2025

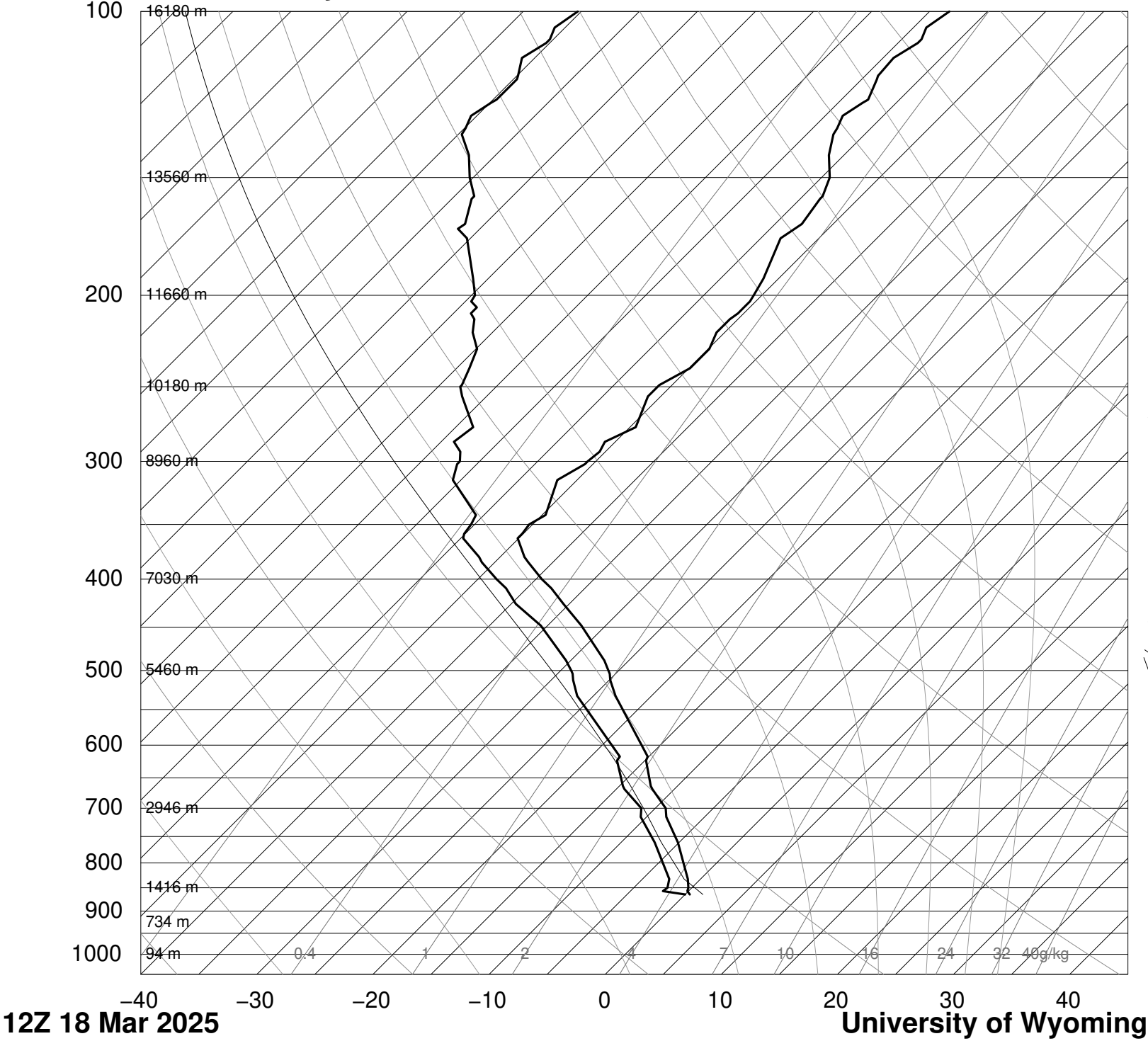






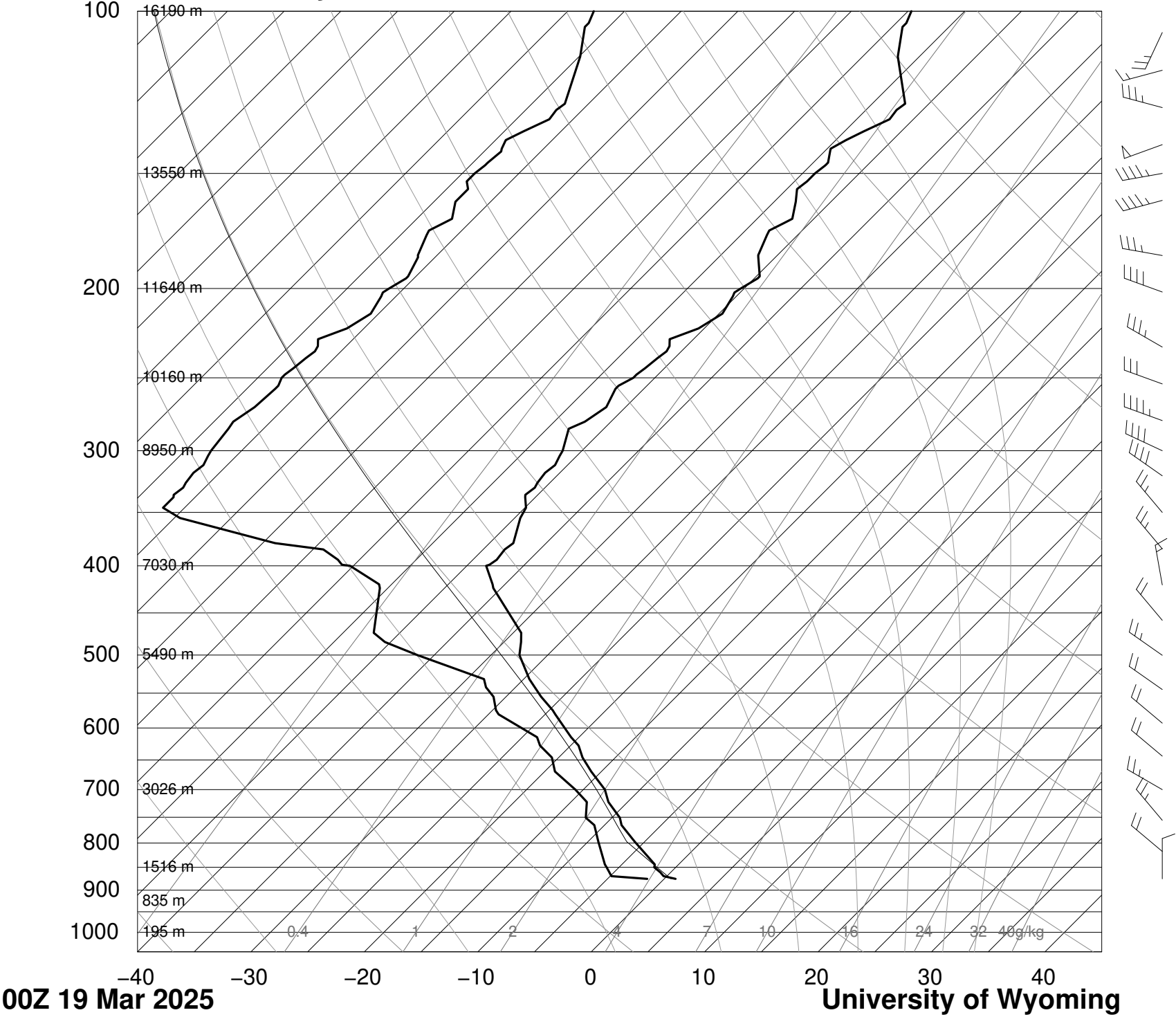


72572 SLC Salt Lake City



SLAT 40.77
SLON
SELV 1289.
SHOW 5.16
LIFT 4.88
LFTV 4.89
SWET 50.02
KINX 21.40
CTOT 23.80
VTOT 25.60
TOTL 49.40
CAPE 0.00
CAPV 0.00
CINS 0.00
CINV 0.00
EQLV -9999
EQTV -9999
LFCT -9999
LFCV -9999
BRCH 0.00
BRCV 0.00
LCLT 270.2
LCLP 816.1
LCLE 297.4
MLTH 286.4
MLMR 3.80
THCK 5366.
PWAT 8.80

72572 SLC Salt Lake City



SLAT 40.77
SLON
SELV 1289.
SHOW 1.84
LIFT 1.60
LFTV 1.57
SWET 215.0
KINX 21.90
CTOT 26.40
VTOT 30.60
TOTL 57.00
CAPE 0.00
CAPV 0.00
CINS 0.00
CINV 0.00
EQLV -9999
EQTV -9999
LFCT -9999
LFCV -9999
BRCH 0.00
BRCV 0.00
LCLT 266.2
LCLP 794.1
LCLE 292.8
MLTH 284.4
MLMR 2.90
THCK 5295.
PWAT 6.08

72572 SLC Salt Lake City Observations at 12Z 18 Mar 2025

PRES	HGHT	TEMP	DWPT	RELH	MIXR	DRCT	SKNT	THTA	THTE	THTV
hPa	m	C	C	%	g/kg	deg	knot	K	K	K
850.0	1416	-0.3	-2.1	88	3.87	305	14	285.8	297.1	286.5
838.6	1524	-0.8	-2.5	88	3.82	295	22	286.4	297.5	287.1
832.0	1587	-1.1	-2.7	89	3.78	298	22	286.7	297.8	287.4
807.0	1829	-2.5	-4.2	88	3.49	310	22	287.8	298.0	288.4
776.5	2134	-4.2	-6.1	87	3.13	330	20	289.1	298.4	289.7
761.0	2294	-5.1	-7.1	86	2.96	333	23	289.8	298.7	290.3
747.1	2438	-6.0	-8.1	85	2.79	335	25	290.3	298.7	290.8
718.5	2743	-8.1	-10.2	84	2.46	335	26	291.4	298.8	291.8
715.0	2782	-8.3	-10.5	84	2.42	337	25	291.5	298.9	291.9
700.0	2946	-9.1	-11.2	85	2.33	345	21	292.4	299.5	292.8

72572 SLC Salt Lake City Observations at 00Z 19 Mar 2025

PRES	HGHT	TEMP	DWPT	RELH	MIXR	DRCT	SKNT	THTA	THTE	THTV
hPa	m	C	C	%	g/kg	deg	knot	K	K	K
850.0	1516	-1.9	-6.1	73	2.86	350	14	284.1	292.5	284.6
849.1	1524	-1.9	-6.2	73	2.85	345	14	284.2	292.6	284.7
844.0	1572	-2.1	-6.5	72	2.80	339	15	284.5	292.7	285.0
817.0	1829	-4.3	-8.0	75	2.58	310	22	284.9	292.5	285.3
797.0	2024	-5.9	-9.1	78	2.42	316	23	285.1	292.3	285.6
785.9	2134	-6.8	-9.7	80	2.34	320	23	285.3	292.3	285.8
765.0	2344	-8.5	-10.9	83	2.19	320	24	285.7	292.2	286.1
755.7	2438	-9.0	-11.8	80	2.06	320	24	286.1	292.3	286.5
751.0	2487	-9.3	-12.3	79	1.99	318	24	286.3	292.4	286.7
726.4	2743	-11.3	-13.4	85	1.88	305	23	286.9	292.6	287.2
722.0	2790	-11.7	-13.6	86	1.86	304	23	286.9	292.6	287.3
700.0	3026	-13.1	-15.7	81	1.62	300	23	287.9	292.9	288.2

GSL Temperature

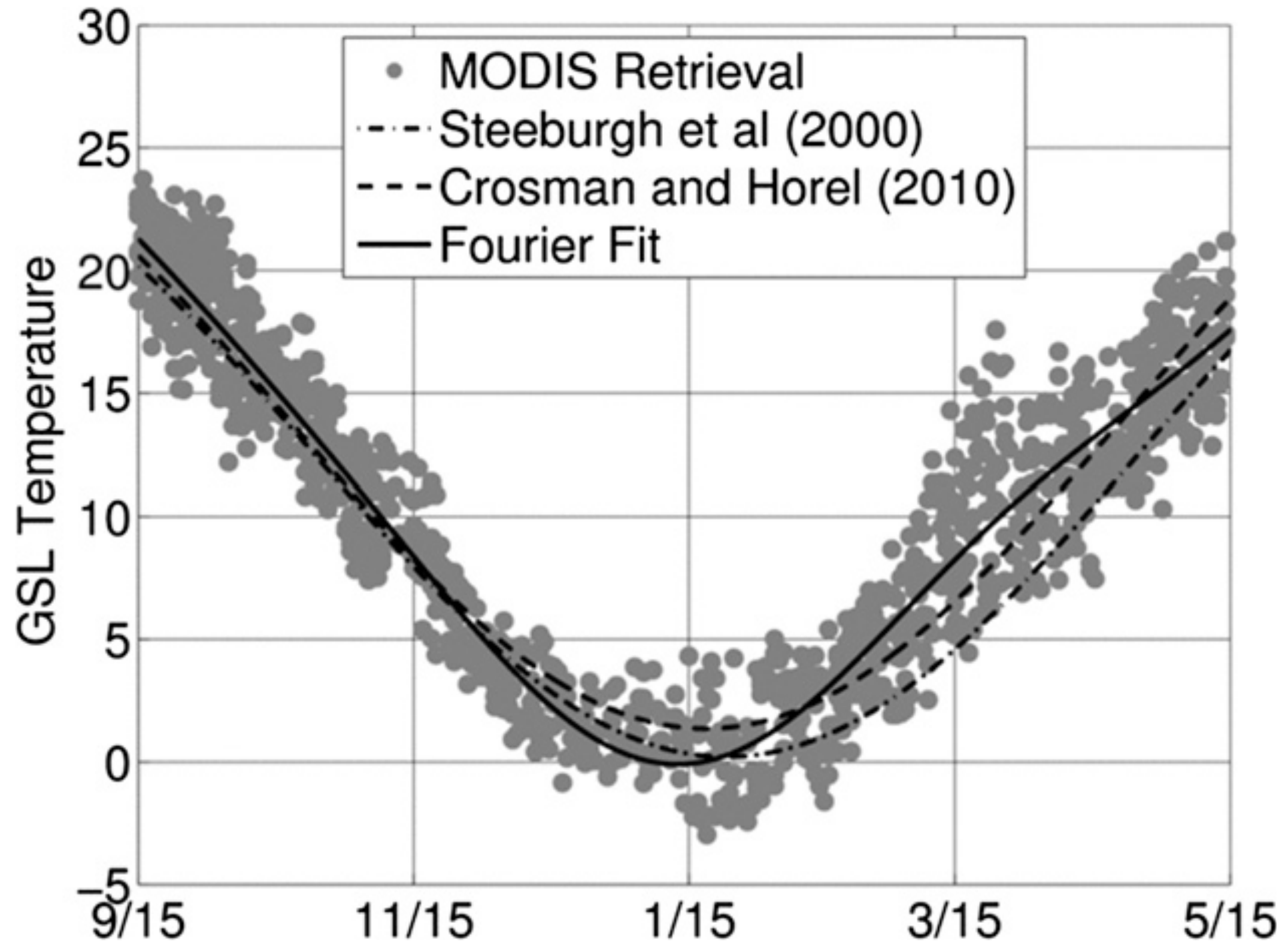
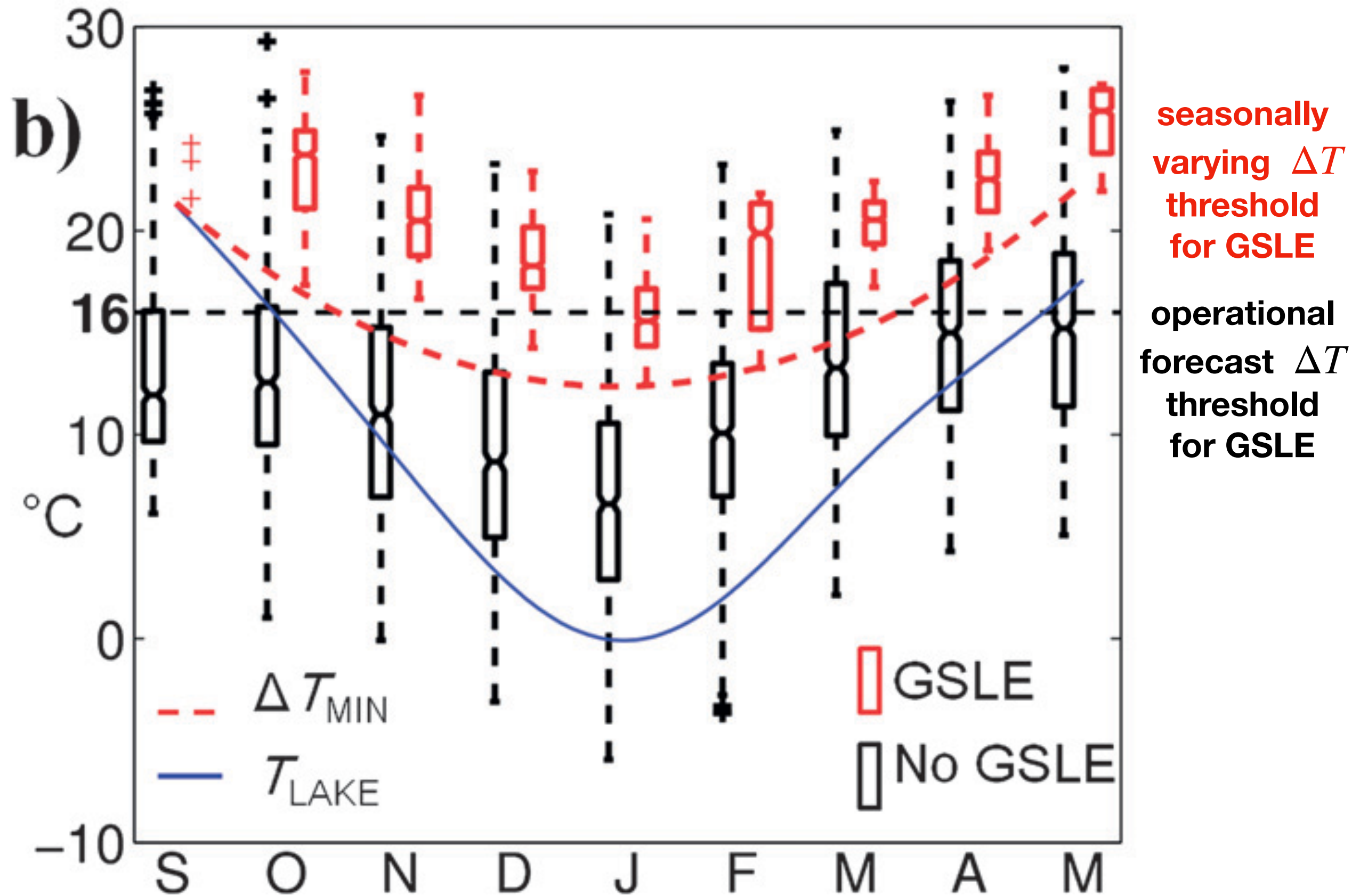


FIG. 4. MODIS GSL temperature vs three climatological curve fits.

box & whisker: lake-700 mb temperature difference, ΔT



```

% calculate parameters for GSLE for March 18, 2025 (12 Z 18 and 00Z 19)

% https://stateparks.utah.gov/parks/great-salt-lake/current-conditions/
T_lake = 6.7 % C

d = 184 % number of days since Sept 15

dT_min = 0.0006425 * d^2 - 0.152 * d + 21.35 % C
% 15.1

% 72572 SLC Salt Lake City Observations at 12Z 18 Mar 2025

T_700 = -9.1
RELH = 86.4
dT = T_lake - T_700
% 15.8
dT_excess = dT - dT_min
% 0.7
wd_700 = 345

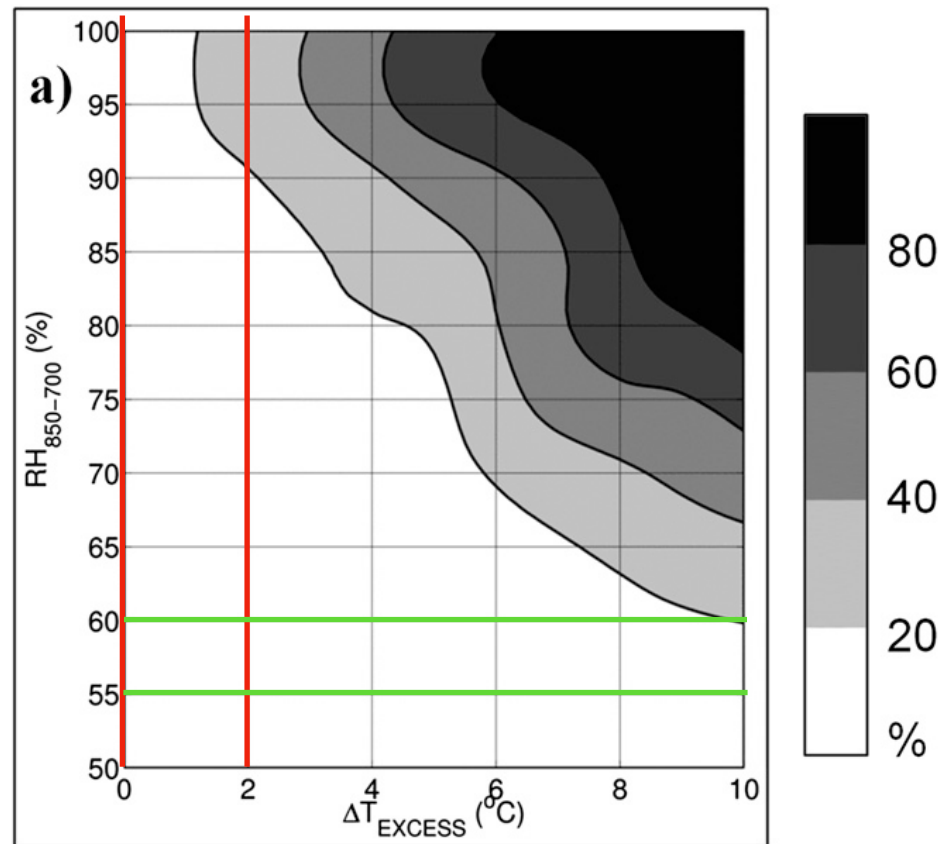
% 72572 SLC Salt Lake City Observations at 00Z 19 Mar 2025

T_700 = -13.1
RELH = 78.75
dT = T_lake - T_700
% 19.8
dT_excess = dT - dT_min
% 4.7
wd_700 = 300

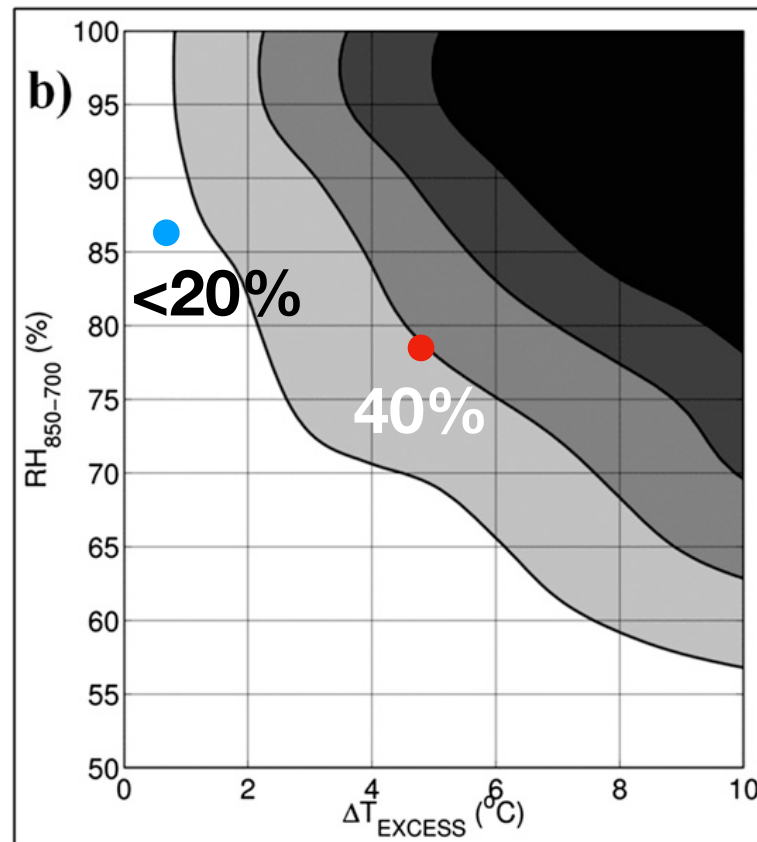
```


Probabilistic Forecasting

all 700-mb
wind directions



700-mb wind
direction
290-360 deg



700-mb wind
direction
1-289 deg

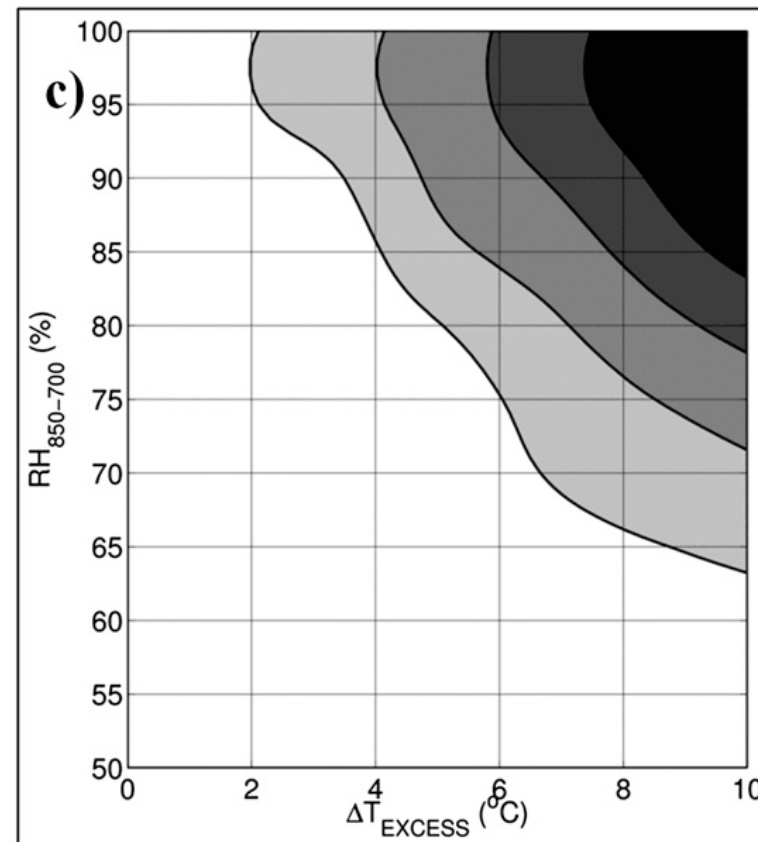


FIG. 15. (a) Fraction of soundings with GSLE (% , shaded according to scale at right) as a function of ΔT_{excess} ($^{\circ}\text{C}$) and $\text{RH}_{850-700}$ (%). (b) As in (a), but for 700-hPa wind directions 290° – 360° . (c) As in (a), but for 700-hPa wind directions 1° – 289° .

[Area Forecast Discussion](#)

National Weather Service Salt Lake City UT
334 PM MDT Mon Mar 17 2025

The next question is about lake effect/lake enhancement Tuesday night into Wednesday morning. Current expectation is around a 75% chance of snow showers developing south and east of the Great Salt Lake Tuesday evening into Tuesday night.

[Area Forecast Discussion](#)

National Weather Service Salt Lake City UT
527 AM MDT Tue Mar 18 2025

Showers are expected to largely wind down this evening. However, there is another threat of [lake effect snow](#) tonight. Local guidance suggests a 60% of occurrence, and this is also depicted in [Hi](#)-res models, although there is no real consistency on timing and which part of the Salt Lake Valley will be most impacted.

[Area Forecast Discussion](#)

National Weather Service Salt Lake City UT
401 PM MDT Tue Mar 18 2025

[Lake effect snow](#) is still looking [likely](#), but transient for Salt Lake County, the adjacent mountains and northern Utah County. Expect the initial band to develop along the east side of Salt Lake County this evening and gradually shift to the west side of the Salt Lake Valley after 10 PM...ending as the back edge of the trailing [shortwave trough](#) shifts east of the area.

