

Jobsheet

UW/CIMSS Cloud Top Cooling Rate Products

ANSWER KEY

Question 1: 1825 UTC is the first time Storm #1 is identified by the UW-CTC algorithm. What is the maximum cooling rate at this time?

~ -16K/15min

Question 2: What is the maximum composite reflectivity at this time?

>28dBZ

Question 3: If Storm #1 falls into the strong UW-CTC rate category (< -20 K /15 min), what is the first time this occurs?

1832 UTC

Question 4: Assuming Storm #1 falls into the strong UW-CTC rate category, what is the composite reflectivity at 1841 UTC?

35 to 40 dBZ

Question 5: What time does Storm #1 first achieve 0.25"+ MESH?

1856 UTC

Question 6: What time does Storm #1 first achieve 1.00"+ MESH?

1902 UTC

Question 7: What is the maximum composite reflectivity achieved for Storm #1, and at what time?

65 to 70 dBZ first achieved at 1902 UTC

Question 8: What is the maximum MESH achieved for Storm 1, and at what time?

2.25" at 1946 UTC

Question 9: 1832 UTC is the first (and only) time Storm #2 was identified by the UW-CTC algorithm. What is the maximum cooling rate at this time?

~ -24K/15min

Question 10: What is the maximum composite reflectivity at 1841 UTC?

40 to 45 dBZ

Question 11: What time does Storm #2 first achieve 0.25"+ MESH?

1910 UTC

Question 12: What time does Storm #2 first achieve 1.00"+ MESH?

1916 UTC

Question 13: What is the maximum composite reflectivity achieved for Storm #2, and at what time?

65 to 70 dBZ first achieved at 1915 UTC

Question 14: What is the maximum MESH achieved for Storm #2, and at what time?

1.36" at 1916 UTC

Question 15: Looping from 1815 – 1902 UTC, does the UW-CTC algorithm detect anything on this Greer County Storm?

No. Recall that the UW-CTC algorithm was designed to be conservative; we strive to get the most significant convection and strive for a low false alarm ratio. We want a forecaster to trust that when they see a UW-CTC signal, it will occur. In this case the proximity of Storm 3 to the storm in Jackson County likely eliminated it from being identified.

For this limited case study, that makes the POD 67% for the initial convective development. The take home point is while the UW-CTC algorithm may have missed one storm during this initial period, there is a lack of false detections as well.

Question 16: 1910 UTC is the first (and only) time Storm #4 was identified by the UW-CTC algorithm. What is the maximum cooling rate at this time?

~ -12K/15min

Question 17: What is the maximum composite reflectivity at this time?

35 to 40 dBZ

Question 18: What time does Storm #4 first achieve 0.25"+ MESH?

1926 UTC

Question 19: What time does Storm #4 first achieve 1.00"+ MESH?

1932 UTC

Question 20: What is the maximum composite reflectivity achieved for Storm #4, and at what time?

60 to 65 dBZ first achieved at 1933 UTC

Question 21: What is the maximum MESH achieved for Storm #4, and at what time?

1.32" at 1940 UTC