

Event Summary

National Weather Service, Raleigh NC



August 21, 2017 Solar Eclipse

Note that this is a PDF version of the event summary and that some links, media or resources may not be available in this format.

Event Overview

On Monday, August 21, 2017, a total solar eclipse tracked across the continental United States from the Pacific to the Atlantic coasts. The [path of the total solar eclipse](#), where the moon completely covered the sun, was seen from Salem, Oregon to Charleston, South Carolina. This path included a small fraction of extreme southwestern North Carolina. Most of North Carolina experienced a partial solar eclipse where the moon covered part of the sun's disk. The maximum percentage of the sun obscured by the moon ranged from 100% in Franklin NC, to around 98% in Charlotte, 94% in Greensboro, 93% in Raleigh and 87% in Elizabeth City. The maximum obscuration occurred from around 2:35 to 2:50 PM EDT.

This GOES-16 animation below originated from the CIMMSS Satellite Blog was provided by the State Climate Office of NC. The preliminary, non-operational imagery shows the shadow of the moon moving southeast across the eastern United States.

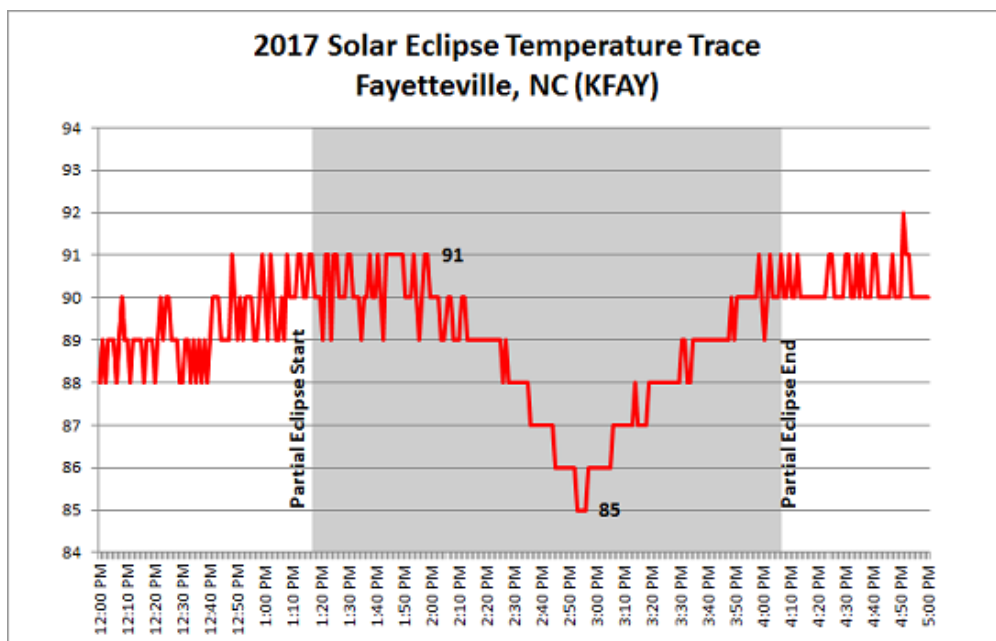
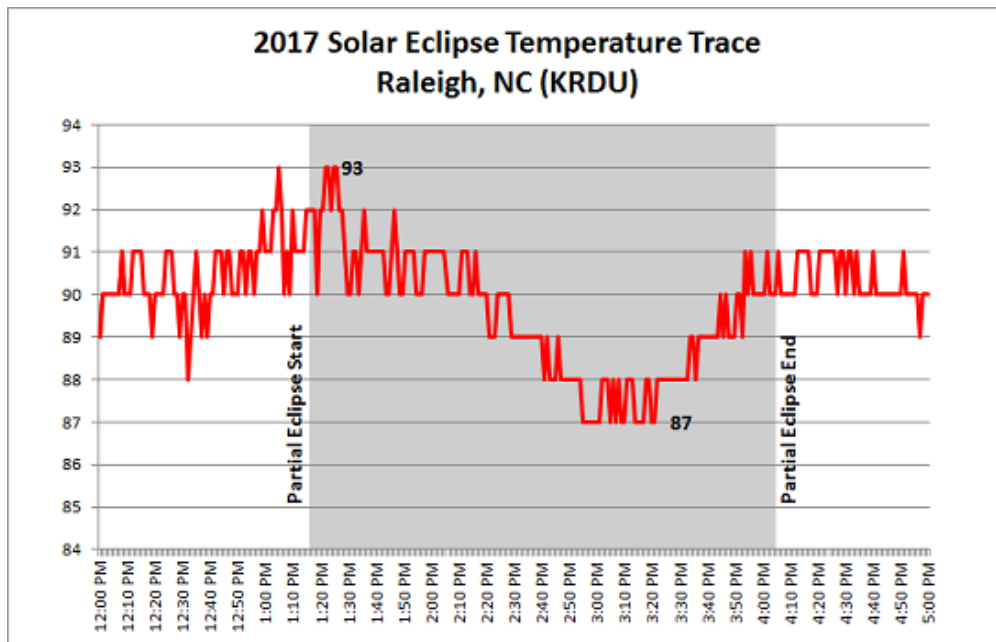


Impact on Temperatures

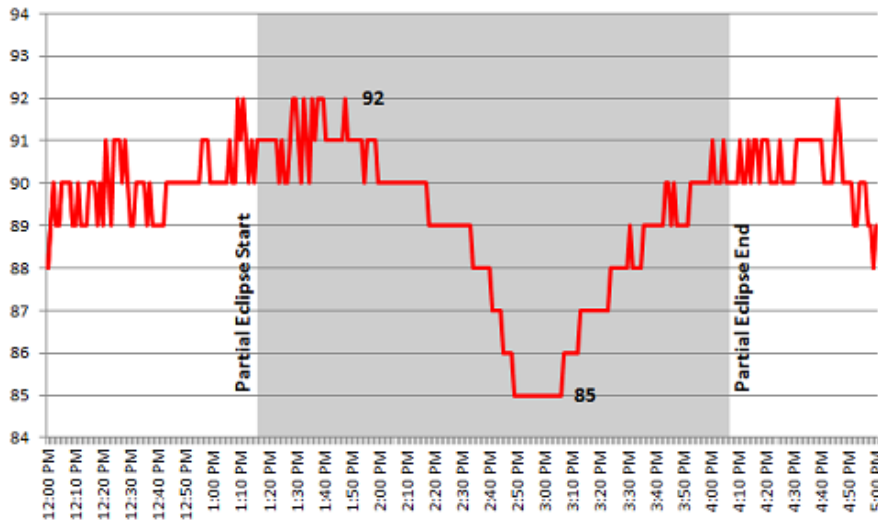
Forecasters anticipated the eclipse would result in a temperature drop during and just after the eclipse period. Some of the preparations for this were highlighted in a [post on the Collaboration for Improved Meteorology in the Mid-Atlantic and Southeast blog](#). Across central NC the temperature change ranged from around 4 to 8 degrees (note a large temperature drop in Greensboro was enhanced by a rain shower that dropped 0.15 inches of rain.) Most locations experienced the daily high temperature just prior to the eclipse.

Location	Eclipse Start	Eclipse Max	Eclipse End	Obscuration %	Temp at Start	Temp after Max	Temp Change	Daily High
Raleigh	1:16 PM	2:44 PM	4:05 PM	92.8%	93	87	6	93
Burlington	1:15 PM	2:43 PM	4:05 PM	93.3%	93	87	6	93
Greensboro	1:14 PM	2:42 PM	4:04 PM	93.9%	87	75	12*	89
Winston-Salem	1:13 PM	2:41 PM	4:03 PM	94.2%	90	82	8	90
Fayetteville	1:17 PM	2:46 PM	4:07 PM	95.6%	91	85	6	91
Lauringburg	1:16 PM	2:45 PM	4:07 PM	97.0%	92	85	7	92

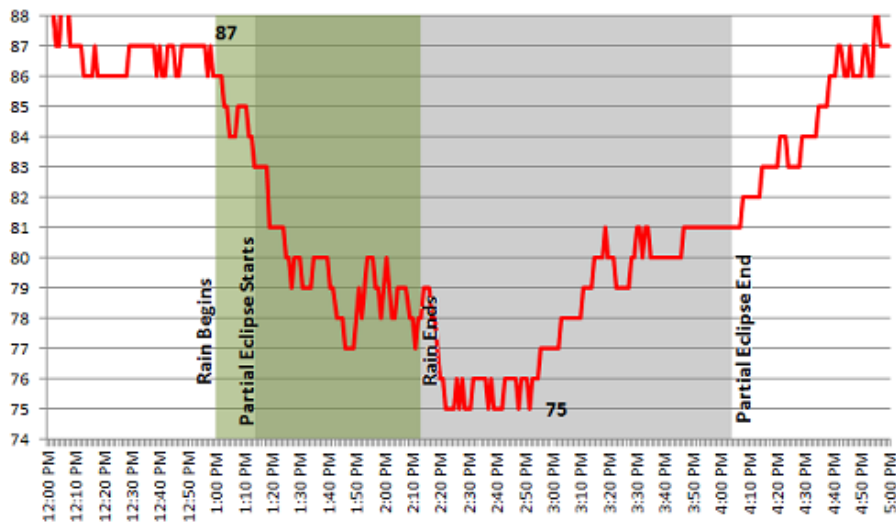
One-Minute Temperature Traces from ASOS Stations

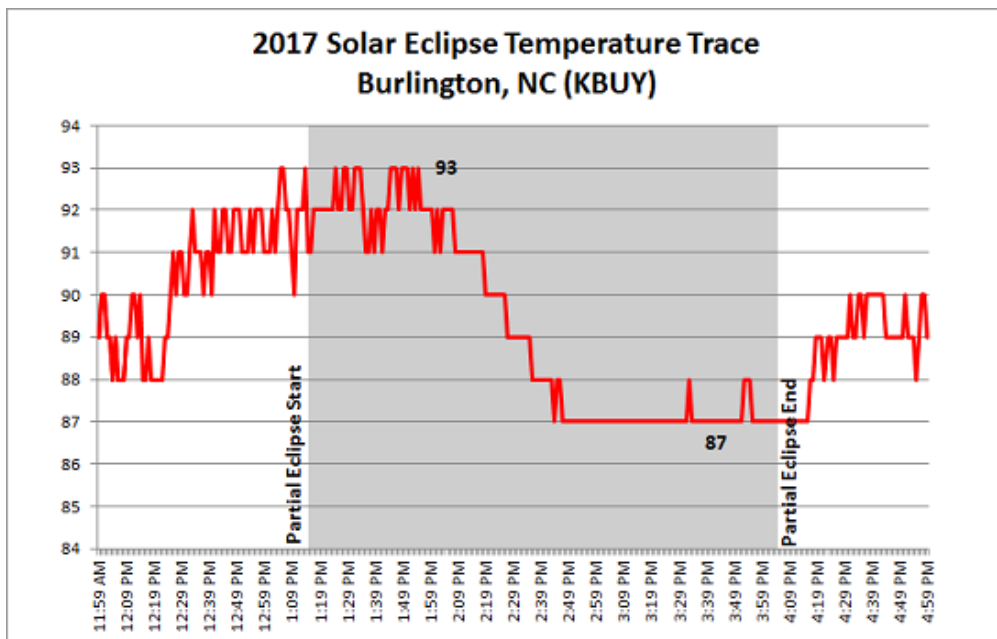
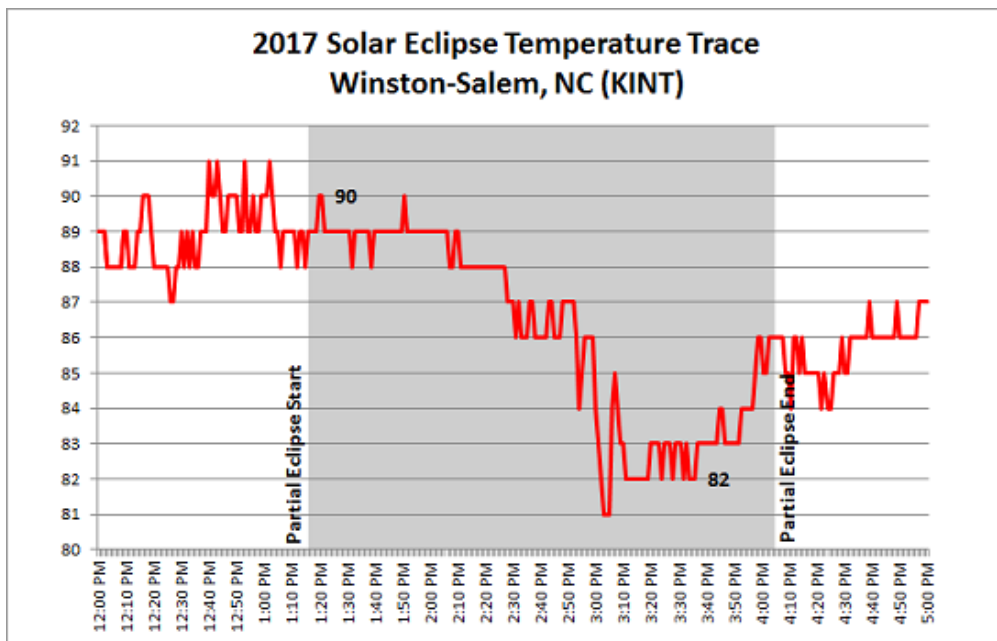


2017 Solar Eclipse Temperature Trace Laurinburg-Maxton, NC (KMEB)



2017 Solar Eclipse Temperature Trace Greensboro, NC (KGSO)

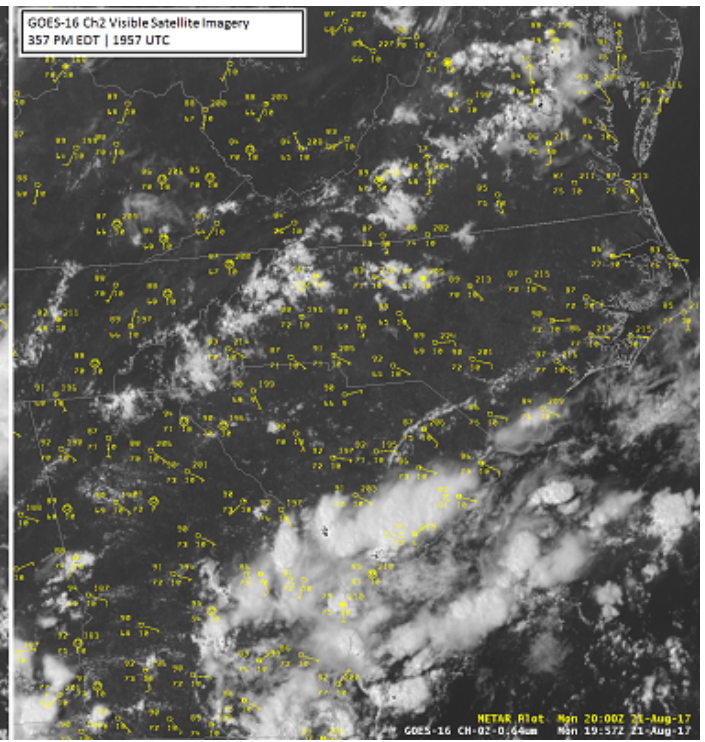
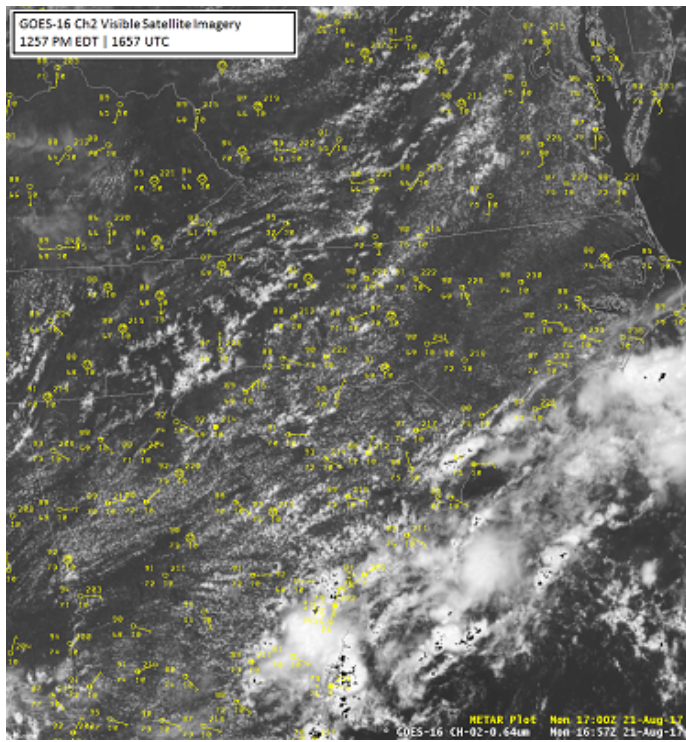




Impact on Clouds

Cumulus clouds were noted across much of the Mid-Atlantic during the afternoon of August 21, 2017. While there [were a few rain showers in Northwest Piedmont and Triad area and across the mountains of western North Carolina](#), most of the clouds in the area were shallow cumulus clouds. Satellite imagery showed that a large majority of these weakly driven clouds faded away during the eclipse and generally did not redevelop. Some of the clouds associated with the rain showers which had a stronger maintenance mechanism did persist subsequent to the eclipse.

A before and after satellite view of the Mid-Atlantic is shown in the GOES-16 visible image [preliminary, non-operational] below (click on the image to enlarge.) The image on the left is from 1257 PM EDT (1657 UTC) just prior to the eclipse while the image on the right shows clouds across the area at 357 PM EDT (1957 UTC). It can be seen, [especially in the enlarged photo](#) that most of the shallow cumulus clouds across the Carolinas have dissipated with the decreased insolation.



Other Resources

[NASA Eclipse Web Page](#)

[Explore Radiation & Temperature Data from the Eclipse](#) from the State Climate Office of NC