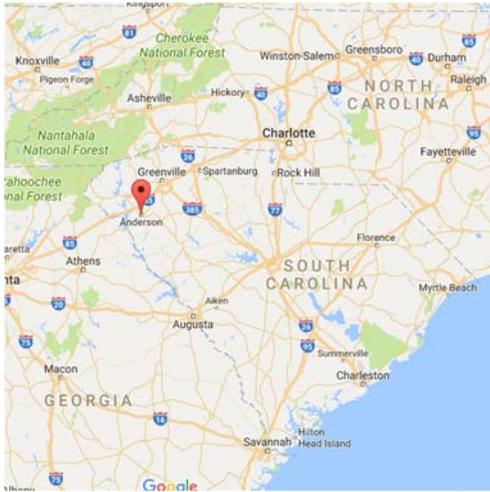


“Coulda Shoulda Woulda” Total Solar Eclipse of 2017 by Peter Dorofy



On the morning of Sunday, August 21, I began my 14 hour drive to Anderson, South Carolina. It was back in May, that I booked two nights at the Baymont Inn just a couple miles northwest of Anderson in preparation for what turned out to be one of the most stunning total solar eclipses of all time in the Continental U.S! At the time of the booking, hotel rates were low. By July, the price of hotel rooms had skyrocketed and by the beginning of August, the hotel I was staying at and the surrounding hotels were completely booked.

During the 14 hour drive, I noticed a number of variable-message signs (VMS) along the roadways informing drivers of the eclipse and to not stop or park on the shoulder during the event.

A day before the eclipse, the NOAA cloud cover forecast model for that afternoon showed partly cloudy conditions across much of the western state, with slightly higher cloud coverage forecasted for north and northwest from where I was located. Based on this forecast, I decided to stay in Anderson; it seemed that observers across the region would share the same odds. On the morning of the day of the eclipse, the skies were completely clear as expected. By around noon, clouds were well into forming, but still scattered. I went to grab a bite to eat nearby and all the while continued to monitor the skies. Clouds were building up, but they were still quite scattered. After eating, I walked back to my observing location, the hotel swimming pool. At the pool, I was joined by about a dozen people, all hoping the sky would remain favorable.

Just a few minutes after 1 pm, I put on my solar eclipse glasses and I could see a sliver of the moon covering the edge of the sun, the partial eclipse had begun but alas, that is all I would see of this glorious event in the sky! Clouds quickly formed above me. I looked around the sky and could see openings in all directions; north, south, east, and west. I knew I still had over an hour before the beginning of totality, and that I still had some time to ditch this observing site and go somewhere else. I was getting nervous and asking myself: Should I stay put? Or should I drive off to clearer “pastures”? I now wish I chose the latter; but instead, I decided to stay put. I “coulda” drove off.

I decided to stay put for two reasons: 1) I was hoping that the clouds above me would move off, for fear that if I drove off, those friendly clouds would follow; 2) I did not want to get stuck in traffic along the way, especially during eclipse totality since I knew [I remembered the VMS] it would be illegal to stop or park along the shoulder during that time.

As the eclipse progressed, those clouds loomed over and just persisted. In fact, along with providing “unwanted” shade [normally shade is a welcome blessing in a hot sunny day] those generous clouds also gave us a nice cool shower. It rained on myself and my pool companions for about 10 min. Though the rain stopped, it became evident that those clouds were just about motionless. Time was quickly approaching eclipse totality. I could still see some openings to the west and north of us, but it was too late to do anything about it. I “woulda” drove off.

As the eclipse approached totality, the sky darkened; I could hear the sound of crickets. The temperature suddenly dropped. It felt like a fast approaching thunderstorm. I had the opportunity to take some pictures. Figure 1 shows the changing lighting conditions just a couple minutes before the beginning of

totality (left) and during totality (right). Totality lasted for about two minutes. During that time, it was as dark as twilight. Soon after totality ended, daylight resumed.



Figure 1: Partly cloudy skies about 3 miles northwest of Anderson; (left) Just 2 min before the beginning of totality; (right) During totality at 2:39 pm local EST

Even though I did not get to see the eclipse in all of its glory it was still cool to witness the changing sky and landscape. When I came back to work after spending a couple more days in South Carolina, I decided to look at satellite imagery for that region during the eclipse to make sense of what was happening with the clouds (looking at satellite imagery is my job, it's what I do). Figure 2 is a sequence of images from the GOES-16 satellite. The images are at local time. The yellow circle encapsulates my location at the time of the event. On the morning of the day of the eclipse (9:02 am), the skies were completely clear as expected. By around 11:00 am, as forecasted, clouds were well into forming.

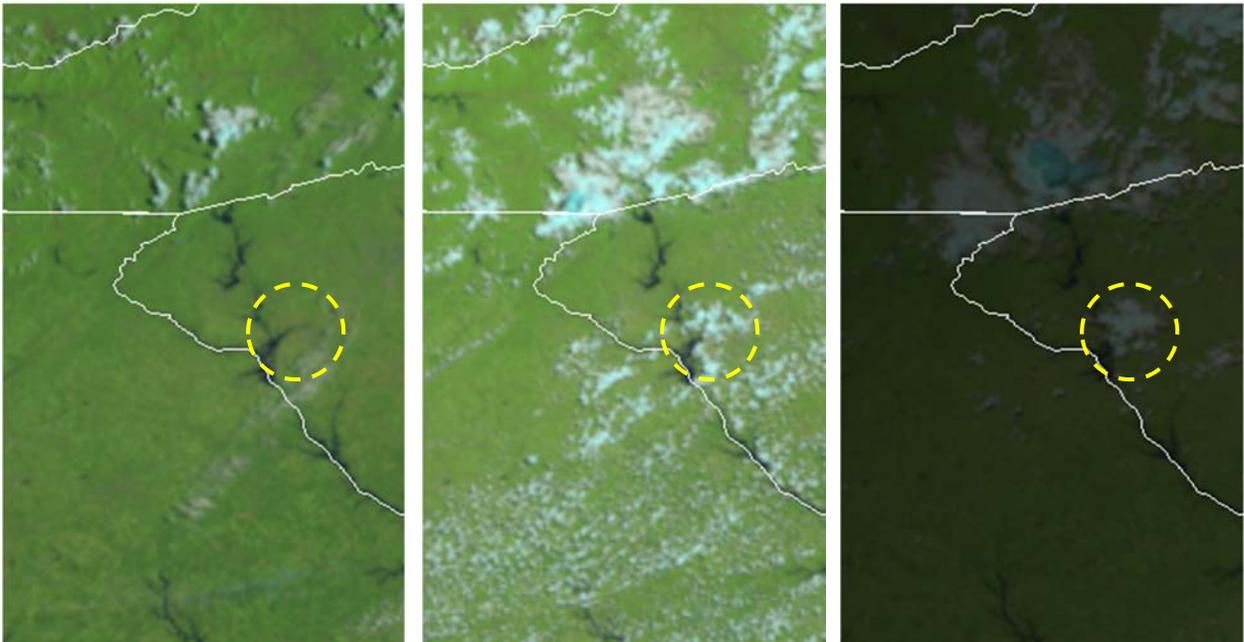


Figure 2: GOES-16 natural color imagery on August 21, 2017; (left) 9:02 am; (center) 11:02 am; (right) 2:27 pm

Far north, there was significant cloud formation along the Appalachian Mountains. By 2:27 pm, as the darkness of totality approached, those clouds above my location would not move off and yet, only a few miles N, S, E, W... mostly clear skies. . I "shoulda" drove off. Yes... I coulda, woulda, shoulda, gone to clearer skies that day!

The next total solar eclipse in the United States will be in 2024. But I do not want to wait that long. I'm planning my next solar eclipse trip to Chile for 2019!