

LIGHTNING DATA CENTER MINUTES
October 9, 2015
ST. ANTHONY HOSPITAL WEST, LAKEWOOD, CO

Monthly Quote: “I thought they were going to run out of the stands. I thought they would leave when the lightning started.” Cincinnati Bearcat Head Coach Tommy Tuberville, on the lightning delay of Sep. 5, 2015. Link: <http://www.gobearcats.com/sports/m-footbl/recaps/090615aae.html>

1. Meeting began at 11:50 AM and adjourned at 1:10 PM. Clark, Swanson, Stewart, Elder, Wachtel, Langford and Cachet. Gene Richer, CME Coordinator from St. Anthony's Medical Staffing department was also present. Clark moderated.
2. A five-member partnership, consisting of Dr. Mary Ann Cooper's group, African Centres for Lightning and Electromagnetics and four other entities, was awarded one of eight \$1,000,000 grants by the United Nations Global Resilience Partnerships. The grant will be used to establish a Severe Weather Early Warning System for Lake Victoria and surrounding populations. An estimated 5000 fishermen are killed by unexpected severe weather each year. This partnership was one of 510 initial applications submitted for the grants. Of those 510 applications, only 17 made the cut to the second tier. From that group of 17, eight were awarded grants of up to \$1,000,000 each. For more details, see this link: <http://www.globalresiliencepartnership.org/blog/2015/09/27/winning-solutions-unveiled/>
3. Greg Stewart shared three topics: lightning safety protocol for college football games, a review of lightning fatalities by state and some developments in cloud research.

First, examples were given of preemptive safety measures utilized at college football venues. Recently at the Colorado-Oregon game, officials first delayed the kick-off at Folsom Field in Boulder, Colorado by an hour and later asked fans to shelter indoors. They were eventually allowed back outside, only to be ushered inside once again. The delay resulted in the latest start and finish in the history of Folsom Field.

Carl Swanson commented that he was listening to the radio broadcast of that game. One of the announcers mentioned seeing flashing in the clouds overhead, seeing a cloud-to-cloud strike some distance away and then downplayed the danger since the ground flash was relatively far away. Carl was disappointed with that comment, as it failed to convey the potential danger underneath a cloud exhibiting in-cloud lightning.

Several other examples were given of football games delayed in early September due to lightning concerns. One game, Illinois v. Kent State, was postponed an entire day due to three hours of lightning. Link:

<http://www.morningjournalnews.com/page/content.detail/id/923990/College-football-s-opening-weekend-dogged-by-weather-delays.html?isap=1&nav=5026#sthash.ZHjo2Ssv.dpuf>

The LSU-McNeese State game was cancelled outright after a 4-hour delay. “Slow-moving nearby thunderstorms produced frequent lightning close enough [to the stadium], forcing the cancellation.” Link:

<http://news.weathernationtv.com/2015/09/07/lightning-cancels-college-football-game-shortens-another-opening-weekend/>

Second, Greg pointed to the relatively high lightning fatality rates in the Southeast U.S., with Florida and Alabama leading other states so far in 2015, with 5 and 4 respectively. A helpful NOAA chart was referenced which includes fatality numbers, location, activity, etc. Link:

<http://www.lightningsafety.noaa.gov/fatalities.shtml>

Third, on the peripheral subject of cloud research, Greg cited an article entitled “Tiny Sea Creatures Are Making Clouds Over the Southern Ocean” by Carolyn Gramling. Researchers found an unambiguous link between patches of ocean with high biological activity and cloudiness. On average, the ocean life boosts the number of cloud droplets by about 60% annually. Link:

<http://news.sciencemag.org/climate/2015/07/tiny-sea-creatures-are-making-clouds-over-southern-ocean>

Greg continued with the cloud research topic by pointing to a new technology for measuring cloud properties. Raymond Shaw, atmospheric scientist at Michigan Technological University, has been flying through clouds in an airplane equipped with a new instrument called the Holographic Detector for Clouds, or HOLODEC. “The instrument creates a small, three-dimensional picture of everything inside of a volume...a cigar-sized section of the cloud...[showing the]...little details in the cloud [that] eventually form a link in a chain [leading to] a weather forecast, or an understanding of how climate will change.”

Article link: <http://www.sciencemag.org/content/350/6256/87>

Greg concluded the cloud research topic by mentioning the article “Cloud Control” from Michigan Tech Research Magazine 2015, which covers cloud research using a 15-ton cloud chamber. Link:

<http://www.mtu.edu/research/archives/magazine/2015/stories/cloud-control/>

4. Ken Langford expressed interest in contacting the National Intrepid Centers of Excellence (NICoE) facility to assess their level of interest in using their cutting-edge imaging equipment to scan service members struck by lightning. He will contact them and report what he learns.

5. Last month, a man came to our meeting with questions about a lightning strike to a tree in the next-door neighbor's backyard. This month, he was present when Carl Swanson presented a slide show of a site visit to the house. As noted previously, the tree had channeling down two branches that connected to a main trunk. Carl took several photos showing that. Several possible mechanisms were discussed on how the man received the sensation right at the time of the flash. The window sash is made of metal and is brown. Photographs show a white spot on the sash, which is close to where the witness says he was standing when he felt the sensation. Subsequent closer examination of the white spot found it to be bird droppings. No physical evidence of lightning could be found on the window or frame. There was very minor burn damage to a small wooden shed in the neighbor's backyard, which was located 5 feet, 10 inches from the tree. Finally, the same neighbor's sprinkler timer control unit was knocked out. The lightning channel in the tree at ground level was facing in the direction of the control unit. Carl suspects the ground current from the base of the tree propagated toward the control unit via the underground wiring in the sprinkler system.
6. Questions, comments, notification of errors, and critiques of these minutes are welcome. Please forward those to Steve Clark at: sclarktoto@gmail.com. Please keep your communications professional and respectful. Communications will be forwarded to the appropriate author(s) of the minutes and addressed accordingly.
7. LDC Disclaimer: These minutes do not represent official positions of the LDC or its members. They simply reflect the comments made at the meeting. Furthermore, the LDC does not implicitly or explicitly recommend or endorse any product or service. Any product or service presented in these minutes is done so for purposes of discussion and analysis. The merit (or lack thereof) is open for the consideration and review by the entire membership.
8. Next meeting: Friday, November 13, 2015 at 11:45 AM at St. Anthony Hospital West. Conference Room TBA.

Respectfully Submitted,
Steven E. Clark, Consulting Meteorologist

Lightning Links

This is a monthly listing of periodicals, websites, and videos about lightning and allied areas from a variety of sources. A headline or description is listed, followed by the link. Please note that some of the links are perishable, which means you'll need to go to the source for the information.

Sylte, S. 2015. CU Game Delayed by Weather. *9News.com*. Oct. 4, 2015. Link: <http://www.9news.com/story/weather/2015/10/03/cu-game-weather-delay/73315878/>

AP News. 2015. Lightning Delays No. 25 Tennessee – Bowling Green. *SI.com*. Sep. 5, 2015. Link: <http://www.si.com/college-football/2015/09/05/ap-fbc-t25-bowling-green-tennessee-lightning>

Ryan, S. 2015. Lightning Strikes, Forces Postponement of Illinois Opener to Saturday. *Chicago Tribune*. Sep. 4, 2015. Link: <http://www.chicagotribune.com/sports/college/ct-illinois-kent-state-spt-0905-20150904-story.html>

Gramling, C. 2015. Tiny Sea Creatures Are Making Clouds Over the Southern Ocean. *Science*. July 17, 2015. Link posted above.
