

LIGHTNING DATA CENTER MINUTES

December 13, 2019
ST. ANTHONY HOSPITAL WEST, LAKEWOOD, CO
www.lightningdatacenter.org

HAPPY HOLIDAYS TO ALL

1. Members Present: Clark, Yarnell, Coomer, Gift and Swanson via Zoom. Clark moderated. Meeting began at 11:50 AM and ended at 1:00 PM.
2. The LDC is accepting donations, either as cash or check. If you donate via check, please make your check payable to Steve Clark at 755 S. Clinton Street, #2A; Denver, CO 80247. He will cash the check and keep the cash holdings specifically for the LDC. When the LDC incurs expenses, Steve will pay for services rendered through his bank account using the cash from LDC's cash holdings. A log will be maintained detailing the inflow and outflow of monies. At the present, the LDC has \$439.00 in cash holdings, thanks to a \$50 donation from Dr. Michael Cherington.
3. Steve Clark presented a paper which shows the potential of nowcasting lightning activity in 10-minute blocks of time (0-10 minutes, 10-20 minutes and 20-30 minutes) using four readily measurable meteorological parameters: air temperature, wind speed, barometric pressure and relative humidity. Those data, combined with historic lightning data, were analyzed using Machine Learning techniques which allowed for the hindcasting of lightning activity. The hindcasts suggest lightning activity can be predicted with statistical significance up to 30 minutes prior to the onset of activity. The researchers noted more work is needed.
4. Carl Swanson reported final numbers from his First Responders Data Collection Project for 2019. In Colorado, 15 people were struck. Of those 15, 1 person died and the other 14 either felt something or were injured. Carl will start working to expand his project in his new home state of Tennessee.
5. Earlier this year, Ken Langford brought to my attention a lightning forecast website aimed at hikers in the Colorado mountains. It is a simple map of the likelihood of lightning in the mountains. The image at the end of these minutes is a forecast from July 6, 2019. The green dots indicate no lightning is forecast and the little lightning flashes colored yellow, orange and red indicate increasing chances of lightning, respectively. The accuracy of the forecasts is unknown; therefore, those who decide to utilize this forecast product should do so with a healthy dose of caution.
6. Dr. Phil Yarnell asked how far the blast effect of a lightning strike reaches. How far does a person have to be from the flash in order not to be knocked down or to not have their eardrums be ruptured? Bobby Coomer said when he was hit earlier this year, he was knocked down to the floor of his balcony. He also said the lightning burned the paint on the railing of his balcony.

7. Phil said the idea of a connectome may be helpful in the diagnosis of the neurological complications experienced by survivors of electric shock and lightning. The idea of a connectome may be explained as follows. Ideally, if a person has neurological issues due to electrical insult to the body, he or she would visit a neurologist and an exam would be done, including an MRI scan. The data collected from the visit and the MRI scan would be compared to two broad sets of data: data and scans for normal, healthy people and data and scans from others that have suffered electrical insult to the body. Ideally, the patient's data would show some similarity to the broad profile of the population of people suffering electrical insult to the body, which hopefully, would lead to a better diagnosis and proper treatment of the ailment. Unfortunately, here in the real world, we do not have that population of data and scans for those who have suffered electrical insult. Steve asked what it would take to build such a collection. Phil said it may be possible, but it will not be easy. He recommended I contact Jim Kelly with the Brain Injury Center at the University of Colorado.
8. The meeting was closed by showing a video of sprites over northern Italy.
9. Some links to various websites discussing PTSD are listed below in the Lightning Links section.
10. LDC welcomes your medical questions. Please send them via e-mail to Steve Clark at sclarktoto@gmail.com. Your medical questions will be forwarded to Dr. Phil Yarnell for his review and will usually be taken up for discussion in the next month's meeting. Please be advised any questions posed are for the general consideration by the group and do not constitute a formal medical opinion. If a formal evaluation is requested, arrangements can be made directly with Dr. Yarnell. If you have a medical emergency, please call 911 or your local EMS.
11. 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.
12. 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.
13. Next meeting: Friday, January 10, 2020, from 11:45 AM to 1:00 PM at St. Anthony Hospital, Conference Rooms E & F. Format: Discussion of what to include in a lightning safety brochure to be released to the public early next year.

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.

What is PTSD? Some Websites

American Psychiatric Association – What is Posttraumatic Stress Disorder?

Link: <https://www.psychiatry.org/patients-families/ptsd/what-is-ptsd>

U.S. Department of Veteran Affairs – PTSD Basics

Link: https://www.ptsd.va.gov/understand/what/ptsd_basics.asp

PTSD Alliance – PTSD Symptoms

Link: <http://www.ptsdalliance.org/symptoms/>

Child Mind Institute – What is PTSD? (PTSD in children)

Link: <https://childmind.org/article/what-is-ptsd/>

National Institute of Mental Health – Post-Traumatic Stress Disorder (PTSD in adults and children)

Link: <https://www.nimh.nih.gov/health/topics/post-traumatic-stress-disorder-ptsd/index.shtml>

Mostajabi, M., D.L. Finney, M. Rubinstein and F. Rachidi, 2019: Nowcasting Lightning Occurrence from Commonly Available Meteorological Parameters Using Machine Learning Techniques. *npj Climate and Atmospheric Science*. November 8, 2019.

Link: <https://www.nature.com/articles/s41612-019-0098-0>

Lightning Threat Maps – from the Folks at SummitCAST Mountain Forecasts.

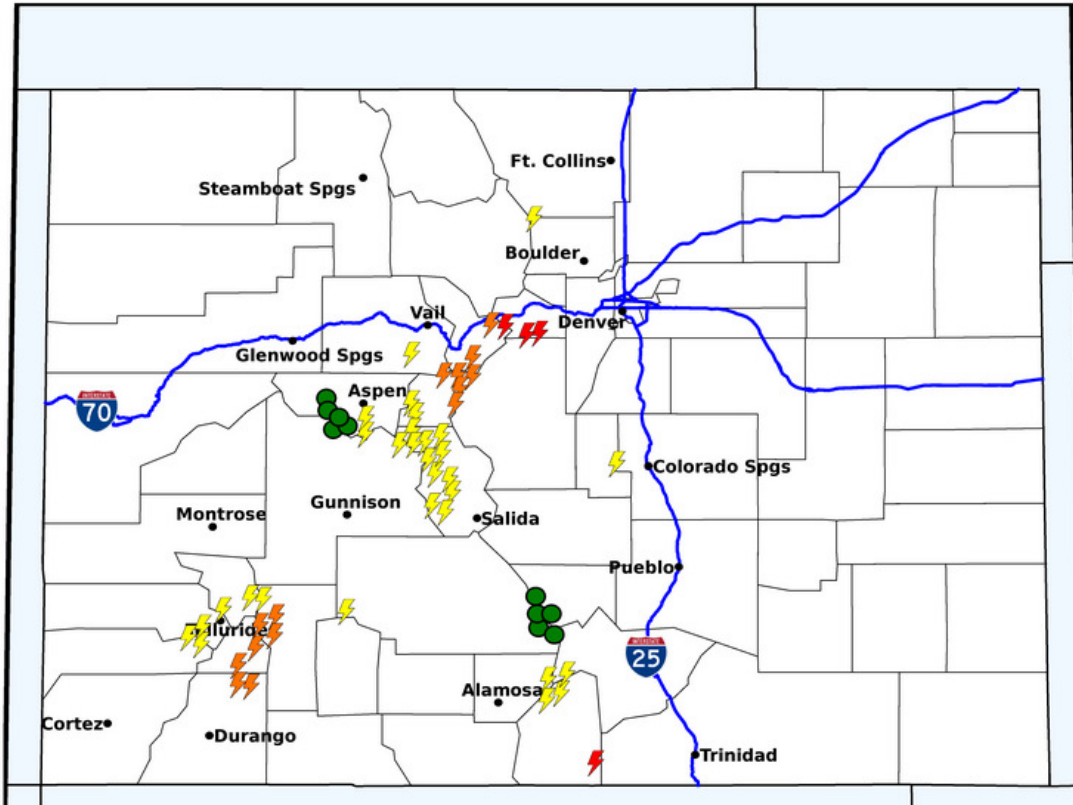
Website: <https://www.bouldercast.com/summitcast-hiking-forecast/>





YouTube Video: 06/07.08.2019 – Sprite Over Northern Italy. Link: <https://www.youtube.com/watch?v=oc6e8VZhb-I>

Screenshot of a SummitCAST Lightning Threat Map for July 6, 2019

Lightning Threat

Sat Jul 06



-  High
-  Med
-  Low
-  None