

Lightning Resource Center
Minutes
June 8, 2001
St. Anthony Hospital, Denver, CO

Quote of the Month:

"Only a third of the universe is in the form of matter, according to data based on the velocities of 141,000 galaxies. The rest is believed to be mysterious dark energy, a force first postulated by Einstein. The combined effects of low mass and dark energy could mean that the universe will expand forever because there is too little mass to provide sufficient gravity to rein it in....97% of the universe is not in the form of planets, stars, and galaxies, but exists as so far undiscovered elementary particles and force fields."

Simon Mitton, Lancet 2001;357:824

1. Meeting began at 11:30 am and adjourned at 1:30 pm.

2. Members present: Anderson, Barron, Cherington, Glancy, Erickson, Hodanish, Hodge, Langford, McDonough, Molen, Olson, C Ryan, Dayna Scott, Staelin, Swanson, Wachtel, Wallace, M Wallin, S Wallin, Yarnell.

3. Ken Langford recently returned from Tucson, AZ where he met with Ron Holle. Ron provided Ken with maps of the United States and Colorado showing averaged flash density for 1995 to 2000. Ron, kindly made maps for distribution at the LDC meeting. Recipients of the maps were instructed not to circulate or reproduce the maps without permission of Ron Holle and GAI.

4. I brought the following articles from the literature (abstracted in part):

d.) Strachan DP. The role of environmental factors in asthma. British Med Bull 2000;56:865-882.

"...on the night of 24-25 June 1994..a thunderstorm over southern and eastern England was followed by a 10-fold increase in acute asthma attacks presenting to accident and emergency departments...Certain fungal spores...are released during summer thunderstorms...in general the role of outdoor fungal allergens as triggers of asthma attacks remains uncertain. Gil McDonough and Howard Wachtel stated that ozone may be a contributing factor to the increase in asthma attacks following thunderstorms.

e.) Cooper MA, Kotsos TP, Gandhi MV, Neideen. Acute Autonomic and cardiac effects of simulated lightning strike in rodents. 2001 SAEM Annual Meeting Abstracts. Acad Emerg Med 2001;8:559-560.

"Short term HRV {variability in heart rate} data from 10 anesthetized...rats were collected for 3 minutes immediately before and after application of a simulated lightning shock...Simulated lightning shock causes autonomic nervous system cardiac axis dysfunction."

c.) Cooper MA, Andrews CJ, Holle RL, Lopez RE. Lightning injuries in PS Auerbach (ed) Wilderness Medicine 2001; pp73-110.

d.) Cherington M. Lightning injuries in sports: situations to avoid. Sports Med 2001;31:301-308.

5. Steve Wallin gave a superb presentation entitled: Stanfords' ionosphere project: Charges Never Silent, Charges Make Electromagnetic Splashes.

I cannot do justice to Steve's lecture in these minutes. I shall transmit the following few notes from my pad that I took during his talk.

Electronic activity goes on in the atmosphere (ionosphere). There is an array of Stanford Frequency Radio Stations along the front range (from Socorro, NM, through Colorado, to Cheyenne, WY).

Steve played a CD with sound that included "clicks" during lightning. These clicks represent spherics = electromagnetic waves from lightning. In space, there are no acoustic waves, only radio waves. Steve has a simple experiment shows that electric current produce magnetic field changes - watch the changes in a compass in proximity to a battery that is turned on. (Such experiments should be done only by Steve and with great caution).

6. Bob Glancy reported that new information from Storm Data revealed that Colorado ranks 8th in the USA in lightning casualties; 11th in fatalities. The Data again verified that most lightning injuries occur during the summer months of June, July, and August. July is the month with most casualties.

Bob reported that the National Weather Service is hosting a National Lightning Awareness Week (June 18th to June 22nd).

7. Bob Wallace and Gil McDonough have been working on organizing a Panel of Clinicians to be available to the medical community. Bob brought the idea to the Trauma Service. He reported that members of the Service recommended that we change our name from Lightning Data Center to Lightning Resource Center. That idea was unanimously and enthusiastically accepted by the members today.

8. Carl Swanson provided us (as he has in the past) with remarkable video and slides of lightning phenomena captured with his cameras. In photographing and taping some of his lightning shots, Carl aims his cameras (shutters open) at an outdoor antenna. He sets up his camera at times that are favorable for lightning strikes. In order to enhance his readiness, he has been working on improving a small lightning detector that he hopes will soon be on the market.

Carl also brought newspaper articles that detailed the fatal lightning strike to an award-winning Boulder Daily Camera reporter. The 30 year old reporter was struck while standing on a beach in Fort Lauderdale, Florida on June 2, 2001. He also brought a newspaper article about 4 Fort Carson, Colorado soldiers who were injured by lightning at about 2:30 pm on May 30, 2001.

9. George Hodge brought pieces of sandstone rock from his backyard. These rocks were marked by Lichtenberg Figures. George believes that chemicals from decaying leaves were responsible for these patterns.

10. These minutes reflect the comments of members present and do not represent official positions of LDC.

11. Next meeting will be on Friday the Thirteenth of July at 11:30 am in the Main Auditorium of St. Anthony Central Hospital

Guest Speaker: Paul Bauling, MD, Chief of the Burn Unit of the Colorado Health Sciences Center.

Respectfully submitted,

Michael Cherington, MD
Chair, Scientific Committee, LDC