

Quote of the Month:

“By this time the first fury of the tempest had spent itself....A singular change, too, had come over the heavens. Around in every direction it was still...overhead there burst out, all at once, a circular rift of clear sky--as clear as I ever saw--and of deep bright blue--and through it there blazed forth the full moon with a lustre that I never before knew her to wear. She lit up everything about us with the greatest distinctness.”

Edgar Allan Poe, in A Descent into a Maelstrom

1. Meeting began at 11:30 am and adjourned at 1:20 pm.
2. Members present: Abart, Bergschneider, Berson, Boyson, Cherington, Clark, Dye, Foley, Gustafson, Hasty, Henson, Hodge, Kamin, Keen, Kimberling, Kithil, Langford, Reehl, Simmons, Swanson, Toler, Yarnell. Guests: Bob Brown and Melissa Cornick of ABC News; Dave Thurlow of Mount Washington Observatory.
3. I brought the following articles:
 - a. Magnetic fields on distant moons may hint at hidden life. by William J. Broad in NY Times Science Section, May 20, 1997.
 “On Earth, the lines of magnetic force...indicate the hot churning of a molten core.. Galileo probe of Jupiter has found that three of the giant planet’s large moons -- Io, Europa and Ganymede -- are pulsating with signs of magnetic fields, suggesting that...interiors are potentially alive geologically, and possible alive biologically as well...Magnetic fields could be beneficial to life not only because they imply inner heat...but because they would help shield the moons...from cosmic rays, the streams of highly penetrating particles that speed through space. Earth’s magnetic field deflects many of these deadly radiations.”
 - b. Tornado-associated fatalities -- Arkansas, 1997. MMWR May 16, 1997.
 “In the United States, tornadoes cause an average of 51 deaths and approximately 1000 injuries each year.” In Arkansas, “most deaths result from multiple injuries; head injuries were specifically listed in 14 deaths.”
 - c. Electrical injuries from graphite fishing rods. by L. Chi, YD Ning, QF Jun et al. in Burns 1996;22:638 “The carbon fibres and graphite used in the manufacture of fishing rods make them excellent conductors of electricity...Contact of a non-isolated graphite and carbon fibre fishing rod with overhead high tension power cables can give severe electrical injuries...Even though electrical arcing results, a large voltage drop occurs across the ionized air, the victim may still be subjected to a significant potential difference.”
 - d. Lightning strikes: how to lower your risk. by M. Cherington, PR Yarnell, and JR Wappes. Physician and Sportsmedicine 1997;25:129-130.
4. A patient of Dr. Adam Deutschman and Dr. Philip Yarnell was present and gave his history of being a lightning casualty this past weekend. The patient was performing his duty as a mountain search and rescue member in Breckenridge. He had come to the rescue of an injured skier who was being transported on the back of the snowmobile when the lightning strike occurred. The patient suffered burns to his

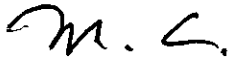
eyes and has persistent but improving photophobia. On ophthalmologic examination, he was found to have corneal burns. His neurologic examination is normal today. The lightning accident occurred at about 4:30 pm and the temperature on the mountain was in the thirties.

5. Rich Kithil's 'News from NLSI' is attached to these minutes.
6. Jim Dye of NCAR gave us a most interesting presentation on "Production of Nitric Oxides by Lightning."
7. Ken Langford reported that he witnessed an upward propagating flash of lightning at the Channel 4 tower on Mount Evans on May 14. Ken told us that according to Martin Uman NLDN does not detect upward propagating flashes. Jim Dyes said that upward propagating flashes are only a very small percentage of cloud-ground lightning flashes.
8. Phil Yarnell reported a patient who, along with coworkers, has suffered shocks when using the telephone. George Hodge speculated that the phone cord might be in proximity to a power conductor. Mike Foley and Steve Clark suggested that the cause could be a static electricity phenomenon.
9. Rich Keen reported that he recorded this season's first thunderstorm on May 14 at The Coal Creek Canyon Observatory. This is the latest start of the lightning season he has ever recorded. Since then, however, there has been much activity.
10. Gary Hasty of the National Park Service reported that last year at Arches Park in Utah a lightning victim was attended to by 3 physicians who were present. In spite of immediate and proper CPR measures the patient died. Phil Yarnell commented that depending on the patient's cardiac status, even heroic measures can fail. Gary was asked which Parks are the most dangerous with regard to lightning strikes. He responded that he would have to review the records, but that the Smokey Mountains in Tennessee and Virginia's Blue Ridge Mountains are high on the list.
11. Peggy Gustafson reported that Centura Health System is very involved in Community Health and Prevention of Illness programs. Next autumn she believes a program on lightning safety should be presented in our school systems.
12. George Hodge told us about a lightning fire that totally damaged a 2 million dollar home in Breckenridge. He was able to find both the entrance and exit sites of the lightning strike. The exit point was the telephone. Since the fire alarm system was connected to the phone, no alarm was sounded.
13. Warren Simmons reported that the Golf season has proceeded without any untoward lightning events. There have been a few delays and postponements.
14. Steve Clark has been investigating a lightning case in Illinois. Data from Global Atmospheric (GAI) has been helpful in establishing lightning as the cause of the event.
15. Carl Swanson brought two remarkable photographs of lightning phenomena taken recently in Colorado. Carl asked the group to analyze the lightning patterns and explain them. Because of the lateness of the hour, we shall take on that project at our next meeting in July. Carl also reported that the Boulder Creek Art Festival was

interrupted by a severe storm and that he witnessed a brilliant flash of lightning near one of the tents. Fortunately, there were no injuries.

16. I announced that because of the full agenda of today's meeting, there will be an interim meeting next Friday, June 20 at 11:30 am to discuss unfinished business. The meeting will be held in the ACR Room in the Foundation Wing at the end of the 1 East Corridor on the Main Floor of St. Anthony Central Hospital.
17. The next full meeting will be on July 11, 1997 at St. Anthony Central Hospital at 11:30 am in the Main Auditorium.

Happy Fourth of July, everyone.



Michael Cherington, MD
Chairman, LDC