

**LIGHTNING DATA CENTER  
MINUTES  
NOVEMBER 9, 2007  
ST. ANTHONY CENTRAL HOSPITAL, DENVER, CO  
[www.stanthonyldc.org](http://www.stanthonyldc.org)**

Monthly Quote: "The creative act lasts but a brief moment, a lightning instant of give and take, just long enough for you to level the camera and trap the fleeing prey in your little box." Henri Cartier-Bresson Quote submitted by Ken Langford.

1. Meeting began at 11:45 AM and adjourned at 1:45 PM.
2. Members present: Cherington, McDonough, Foley, Stewart, Gift, Chi-Gift, Mullan, Wallace, Yarnell, Keen, Langford, Clark, Samaras, Nitka, Burrows, Mendez, Larson, Collier, Eggleston, Elder, Wells, and Wachtel..
3. The Lightning Safety Poster being prepared for the U.S. Forest Service has been finalized and will be submitted to the legal departments of St. Anthony's and the Forest Service for their approval. Again, the input received from the LDC members was greatly appreciated. More on that in the December minutes.
4. The hiker that was struck by lightning while descending a mountain in Colorado was in attendance in this meeting and presented his account of what happened. During the ascent up the mountain, descending hikers were asked about the weather and the party was told only light showers were occurring. He said he was descending in heavy rain and hail and was soaking wet when he got hit. Dick stated the fact he was soaking wet may have saved his life. He was knocked unconscious for a brief period, then spontaneously regained consciousness. Later, he experienced pain and headaches, and he could not straighten his arms. The pain gradually diminished. Now, he is dealing mostly with memory issues and also lacks physical endurance. Gil said the abnormally high CK values (cited in previous minutes) are not normal in lightning strikes, but tend to be more associated with AC current electrocution. A brief Q & A session followed. When asked if there were burns from the strike, he stated only a superficial abrasion to the forehead. When asked if trail signs warning of lightning were posted, he said there were not any signs, but had there been one, he may have been more aware. The LDC appreciates this man coming forward and sharing his account with us.
5. This month's featured speaker was Tim Samaras, a research meteorologist with Applied Research Associates, Inc., and an avid storm chaser. His credits include helping organize the first Colorado Storm Chasers Convention and directly measuring tornado wind speeds. In addition, he has over 30 years experience in developing instrumentation and in high-speed photography. His highly captivating talk was on high-speed photography of lightning. He had purchased a high-speed film camera from government surplus and has retooled it to digitally capture lightning. His ultimate goal is to capture lightning at a rate of 1 million frames per second. Currently, the rate is 10-15 thousand frames per second. The results obtained at this slower speed were no less impressive.

His first set of videos was of leader strokes emanating from the cloud towards the ground, until one of the leaders connects with the ground, forming the main discharge.

His second set of videos was "Strobe Lightning", as Tim refers to it. Basically, these were flashes of lightning that outside the cloud during charge buildup. Some of the flashes appeared to be traveling inwards toward the cloud. Then the main discharge would occur and then there would be no more electrical activity in the cloud. All of this happens in one-tenth of a second, real-time! The frame rate here was 15,000 frames/second. Rich Keen likened the electrical activity to a Van De Graff generator making crackling noises as it builds up a charge. Tim presented this work to NASA, whose scientists had long suspected something this, as their lightning detectors were picking up electrical activity prior to a lightning flash, but they could not see it. The NASA people have since validated their suspicions thanks to Tim's efforts. In closing, Ken Langford stated this is the first time, to his knowledge, that the step-leader phenomenon has ever been captured in motion pictures. Thank you, Tim for a wonderful and most vivid presentation.

6. Michael Cherington brought reprints of an article entitled "Lichtenberg Figures and Lightning: Case Reports and Review of the Literature". A copy is attached to these minutes.
7. These minutes do not represent official positions of LDC or its members. They simply reflect the comments made at the meeting.
8. Next meeting: Friday, November 9, 2007 at 11:30 AM in the Main Auditorium of St. Anthony Central Hospital.

Respectfully submitted,

Steven E. Clark, Consulting Meteorologist