

The Sun Could Turn Your Lights Off



MESSAGE FROM GENERAL MANAGER AND CEO JERRY D. WILLIAMS

Most people have no idea of the devastation that a massive solar storm could potentially cause. According to many scientists, the sun has an activity cycle, much like tornado or hurricane season. There are many predictions 2013 could be the year for a VERY BIG solar storm that could have a tremendous effect on the electric grid, satellite communications and GPS systems.

In recent years, there have been smaller solar storms, such as one on March 13, 1989, which primarily effected the electric grid in Quebec (5 million people in the dark) and another storm around November 4, 2003, that sent a blast wave powerful enough to generate a magnetic storm all the way out to Saturn. Saturn is almost 10 times farther from the sun than the Earth. If we have a solar storm this year that is similar to the one in 1859, we could be in for some electric problems.

On September 1, 1859, a 33 year old brewer and amateur astronomer named Richard Carrington climbed the stairs to his private observatory near London. On

sunny days it was his habit to adjust his telescope to project an 11-inch image of the sun onto a screen. He was tracing sunspots on a piece of paper when “two patches of intensely bright and white light” suddenly appeared in the middle of one large sunspot group. Five minutes later, the fireballs vanished, but within hours their impact would be felt across the Earth.

Most folks know about the current day “Northern Lights” or “Aurora Borealis” which are commonly seen in Canada and Alaska. Before dawn, on September 2, 1859 enormous Aurora displays of red, green and purple lit up the skies as far south as Hawaii. The Aurora was seen around the world. Gold Miners in Colorado began preparing breakfast because they thought it was morning. People in the Northeastern part of the US could read a newspaper by the aurora’s light. Telegraph systems all over Europe and North America failed, in some cases shocking telegraph operators. Telegraph operators discovered they could unplug their batteries and still transmit messages. The light was greater than a full moon.

Folks in the Southern part of the US were particularly startled by the Northern Lights, which were seen as far south as Cuba and Jamaica, which is very close to the equator. The lights caused a lot of confusion. In Abbeville, South Carolina, masons awoke and began to lay bricks at their job site until they realized the hour and returned to bed. In Bealeton, Virginia, larks were stirred from their sleep at 1 am and began to sing as though it were the break of day, until a conductor on the Orange & Alexandria Railroad was also awakened and shot three of them dead.

One eyewitness account from a woman on Sullivan’s Island in South Carolina was printed in the Charleston Mercury: “The eastern sky appeared of a

blood red color. It seemed brightest exactly in the east, as though the full moon, or rather the sun, were about to rise. It extended almost to the zenith. The whole island was illuminated. The sea reflected the phenomenon, and no one could look at it without thinking of the passage in the Bible which says, ‘the sea was turned to blood.’ The shells on the beach, reflecting light, resembled coals of fire.”

Some thought the end of the world was at hand, but Carrington had spotted the true cause for the bizarre happenings.

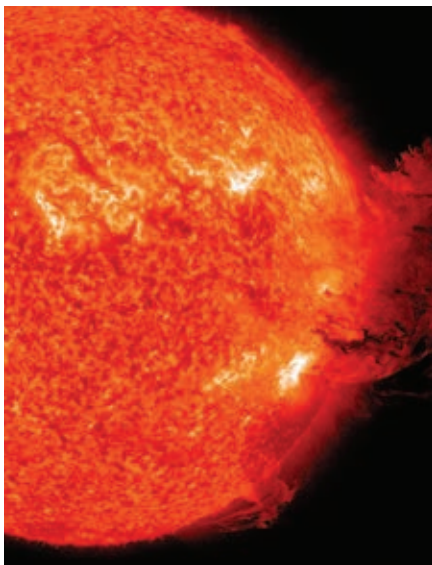
Carrington had spotted a massive solar flare with the energy of 10 billion atomic bombs. This type of flare is called a Coronal Mass Ejection (CME). They are gigantic magnetic eruptions of heated plasma belched into space. Charged particles entering the upper atmosphere of Earth set off intense auroras over much of the earth. We could have a CME in 2013!

We are all familiar with the Sun, yet it is one of the strangest objects in the sky. Looking through a solar telescope, the yellow disk is transformed into a dynamic wonderland. Plumes of plasma rise into black space and loop back. These loops are so large, that several Earths would fit inside the loop.

The Sun is made of plasma, which is neither solid, liquid nor gas. They call this the “fourth state of matter,” when atoms are stripped down to naked protons and electrons. All these charged particles make the solar plasma a great conductor of electricity, much better than copper wire.

The Sun functions as a gigantic dynamo, with global magnetic field lines encircling it from pole to pole like a birdcage, similar to the magnetic fields between the Earth’s north and south poles.

The flare documented by Carrington spewed electrified gas and subatomic par-



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ticles toward Earth and the resulting geomagnetic storm (now called the Carrington Event) was the largest on record to have struck the planet Earth. Compared to today's information superhighway, the telegraph system in 1859 was a mere dirt road. In today's world it is hard to believe the telegraph was the internet of the era, primary way of transmitting news, messages and engaging in commerce.

Ice core samples have determined that the Carrington Event was twice as big as any other solar storm in the last 500 years. It makes one wonder what

the impact of a similar storm would be today. Most scientist are convinced that another geomagnetic storm like the one in 1859 would cause extensive social and economic disruptions, primarily due to its impact on Electric Power Grids, satellite communications and GPS systems. The advanced technologies that underlie virtually every aspect of our lives would be at stake.

Next month I will continue this subject and attempt to explain what makes the electric system vulnerable to a blast from the Sun.

Scholarship Deadline Approaching

The March 29 deadline is fast approaching for high school seniors to enter for a chance to win one of six scholarships to be given away at the Lamar Electric Cooperative Annual Meeting on April 6. Applicants do not have to be present to win.

For more information and an application form, visit lamarelectric.coop and apply today.



Country Corner Events



February 28–March 3

Wade T. Witmer Memorial Hog Hunt For more information, contact the Red River Chamber of Commerce at (903) 427-2645.

March 1–2

◀ **Kiwanis Pancake Day**, Red River Fairgrounds. Get your tickets from any Kiwanis member.

March 5

Blood Drive, noon-4 p.m., Lamar Electric Cooperative

If you have any events that you would like listed for Delta, Lamar or Red River counties, please contact Dena Beason. We need the information two months in advance for the magazine. Email dena@lamarelectric.coop. Call (903) 783-4949.



Lamar Electric Cooperative

1485 N. Main St. • P.O. Box 580
Paris, TX 75461

Operating in Lamar, Red River,
Delta and Fannin counties

GENERAL MANAGER AND CEO

Jerry D. Williams

BOARD OF DIRECTORS

Allen Branch, President, *Sumner*
Charles Dooley, Vice President, *Annona*
Billy Hines, Secretary-Treasurer, *Clarksville*
Matthew Albus, *Roxton*
Mark Jones, *Paris*
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Member Benefits

- Level billing
- Automated meter reading
- Free bank draft service
- E-Bill
- Visa and MasterCard accepted

Your "Local Pages"

This section of Texas Co-op Power is produced by LEC each month to provide you with information about current events, safety, special programs and other activities of the cooperative. If you have any comments or suggestions, please contact the local office.



CONTACT US

For information during office hours
and outages after hours

CALL US

(903) 784-4303 local or
1-800-782-9010 toll-free

FIND US ON THE WEB

lamarelectric.coop

NOTICE OF LAMAR COUNTY ELECTRIC COOPERATIVE

Meeting of Members

The Annual Membership Meeting of Lamar County Electric Cooperative Association will be held at Love Civic Center, 2025 S. Collegiate Drive, in Paris, Texas, on Saturday, April 6, 2013.

Registration opens at 9 a.m. The business session will begin 10 a.m. and includes any necessary reports of the officers, board members and committees as well as the election of board members in Districts, 2, 3 and 4, each for a three-year term.

A member that wishes to be elected to the cooperative board of directors must appear in person at the main office of the cooperative and fill out a nomination form not less than 60 days nor more than 90 days before the date of the annual meeting of the members at which board members are to be elected.

The following members have placed their name in nomination at the cooperative headquarters:

DISTRICT 2 Mark G. Jones, 380 Private Road 42495, Paris, TX 75462

DISTRICT 3 Billy R. Hines, 1680 Farm Road 1159, Clarksville, TX 75426

DISTRICT 4 Charles N. Dooley, 632 Farm Road 1701, Annona, TX 75550

You do not have to be present at the meeting to vote in the director election. Before the meeting, ballots will be mailed to members who reside in those districts. If you reside in one of the districts having an election, you may either vote by mail or in person at the meeting.

Each member in attendance at the meeting will receive a registration gift, and a drawing for other prizes will be held. You must be present at the time of the drawing to be eligible for door prizes.

Six \$1,000 scholarships will be awarded at the meeting. Entries must be received at the cooperative office by 5 p.m. March 29.

To be eligible for a scholarship, a candidate:

- ▶ Must live full time in a residence served by Lamar Electric.
- ▶ And be a graduating senior attending a high school or completing a home-school program within the counties served by Lamar Electric

We look forward to you attending and enjoying your annual meeting.

Billy R. Hines,
Board Secretary

CANDIDATE PROFILES



DISTRICT 2

MARK G. JONES and wife Debbie have been members of Lamar Electric Cooperative since 1976. He has served on the board of directors since 2007 and previously served on the board from 1998-99. He has received director training from the National Rural Electric Cooperative Association. He and Debbie have two children.



DISTRICT 3

BILLY R. HINES has been a member of Lamar Electric Cooperative since 1965. Hines has served on the board of directors since 2004 and currently serves as the board secretary. He is a Certified Credentialed Director and Board Leadership-certified by the National Rural Electric Cooperative Association. He was a foreman for Smotherman's Aluminum from 1961-75.

He owned and operated K&B Steel from 1975 until his retirement in 1994. He has four children, eight grandchildren and two great-grandchildren. Hines and wife Joyce live north of Clarksville.



DISTRICT 4

CHARLES N. DOOLEY and wife Jody have been members of Lamar Electric Cooperative since 1987. He has served on the board of directors since 2007, is vice president and is Board Leadership-certified by the National Rural Electric Cooperative Association. He is retired from International Truck and Engine, is past secretary of the Clarksville Chamber of Commerce and has served as president of the board of directors for the Boxelder Volunteer Fire Department. Dooley also served on the Red River County Commission Oversight Committee. He and Jody have three children and six grandchildren.



Spring Forward!

Daylight Saving Time begins March 10.

Set clocks one hour forward, and change the batteries in your smoke and carbon monoxide detectors.

Tame Your Trees

We love our trees, but when branches are too close to power lines, they can cause power outages, fire hazards and other safety concerns.

Here are some rules to follow:

- ▶ If a tree or a large branch is touching—or falls on—an electric line, call your electric cooperative immediately. Tree sap is an excellent conductor of electricity, so a downed branch on a line is an electrocution hazard as well as a fire hazard.
- ▶ Never trim trees that grow close to power lines; that is a job for professionals. Call your electric cooperative for assistance and guidance.
- ▶ Use extreme caution when doing any overhead trimming. Branches often fall in unexpected places.
- ▶ Don't allow children to climb trees or build tree houses close to power lines.
- ▶ Plant trees appropriate distances from all power lines, including those along the street or right-of-way, as well as those running to your home and outbuildings.
- ▶ When planting a tree, plan ahead. A tiny tree may eventually grow large enough to damage power lines and possibly interrupt power during storms. At maturity, your trees should be at least 10 feet away from power lines.

Lamar Electric Cooperative encourages you to always be safe.



**DEADLINE:
April 1**

Life before electricity?

Shoot an interview with someone who remembers those days. You could win

\$1500

STUDENTS Make your own YouTube video and you could win a cash prize!

TEACHERS Win \$1000 for your school by sponsoring the grand prizewinner.

TEXAS CO-OP POWER

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TexasCoopPower.com

OPEN TO STUDENTS IN GRADES 6-12!