

Invisible Sun-Spot Storm Over Half of World Disrupts Cable, Telegraph and Rad...

By John Chabot Smith

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Invisible Sun-Spot Storm Over Half of World Disrupts Cable, Telegraph and Radio Systems

By John Chabot Smith

An invisible storm without wind or rain struck at radio, telephone, telegraph and cable services over half the world yesterday, disturbing communications for three to five hours, damaging electric plants, upsetting marine and aerial compasses, and causing hundreds of thousands of dollars damage and loss of revenue.

The magnetic disturbance, the worst in the memory of experts, was first observed at 8:49 a. m. at Cheltenham Magnetic Observatory, near Baltimore, Md. It reached greatest intensity between 11 a. m. and 2 p. m. Decreasing toward nightfall, it was accompanied by brilliant Aurora Borealis manifestations in northern latitudes and was expected to diminish gradually and to end today.

Northern lights were first reported seen in England between 9 and 10 p. m. (4 and 5 p. m. Washington time). The intensity of the storm was so great the lights might have been visible as far south as Washington had

the night not been cloudy, Dr. John Fleming, director of the Bureau of Terrestrial Magnetism, explained.

At 11 a. m., during the height of the storm, these events were taking place over the world:

All radio telephone and cable service to Europe and radio to ships at sea was cut off, and service from San Francisco to Pacific points was subject to delay and interference.

Telegraphic service was seriously crippled, continuing only over special "carrier circuits" maintained between the busiest centers.

Short wave radio transmission became almost impossible, weak signals being heard from Rome and London, nothing at all from Paris, Berlin, Moscow, Stockholm, and Holland.

Air traffic was hampered by delayed weather information, as the teletype circuits over which reports are received went dead. Plane to ground signals were also interrupted, although the radio

beam directional signals were unaffected.

The Naval Communicating Service high frequency transmission was interrupted intermittently during the day.

From 10:30 a. m. to 2:40 p. m. the Associated Press network of 285,000 miles of leased wires was out of use, except in a 500-mile radius around New York City; the 10,000-mile A. P. Wirephoto network went out of order at 2 p. m. and was not functioning normally for several hours. Similar difficulties were experienced by the other press associations.

The sun spot bombards the earth with a stream of electrical charges, which are deflected by the earth's magnetic force toward the North and South poles, it was explained.

In heading toward the poles these charges disrupt other electric currents traveling at right angles, like conflicting streams of traffic.

The force is so strong it will

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sometimes reverse the direction of current in a circuit.

The Aurora Borealis, or northern lights, is a manifestation of this rush of electric particles to the poles; passing through the atmosphere they light up like a neon sign.

Had the electrical bombardment occurred on a week-day the results would have been more serious. Telegraph companies congratulated themselves they had little besides Easter greetings to deliver. The storm came on the only day when newspapers have no afternoon deadlines.

Beginning about 10:30 a. m. the machines went "haywire," and instead of rational messages, delivered sentences like, "mste hgkklpms shuff iroegin u hxndoming sht ekliwew."

The interfering current upset the delicate instruments and caused them to type the wrong letters.

William H. Barton, jr., executive curator of the Hayden Planetarium, New York City, said a "tornado" or "twister" had occurred on the sun, which brought out seven spots. One of them, near the center of the sun's face, was particularly large, composed of five smaller spots, he said.

Short-wave radio communications were disrupted by the effect of the radiations on the "ionosphere," an electrically charged layer of atmosphere about 60 miles above the earth, used as a reflecting surface in directing short-wave beams. Long-wave radio broadcasts were not affected, as they do not reach the ionosphere.

Telegraph services were disrupted by the strong electric currents, as great as 750 volts in some cases, developed in the earth by the radiations. As the earth is used to complete the circuit of most telegraph wires, these currents disrupted the messages.

Only carrier circuits in which two wires are used and the circuit is not grounded were free from interruption.

Emergency measures usually used in such storms resulted yesterday in burned out relays, as the total current passing through the wires became four or five times the normal load.

Western Union offices in Washington fell three hours behind in transmitting approximately 25,000 Easter greeting telegrams, although

commercial and rush telegrams were delivered with slight delays by roundabout routing. An "earth current" of 400 volts was developed between Washington and Cumberland, W. Va., at the height of the storm.

Postal Telegraph reported complete paralysis for 15 minutes at 11 a. m., except for one line to New York.

The Chesapeake & Potomac Telephone Co. reported disruption of teletype service between 11 a. m. and 5:30 p. m., and said a "low hum" was noticeable on long distance calls during that time. Local calls were not affected.

The last similar storm was on Easter Saturday two years ago, April 16, 1938, at which time the aurora borealis was visible in Washington.