

# EARTH COUNTS TOLL OF SUN-SPOT STORM

## Extensive Physical Damage Is Listed in Addition to the Disrupted Services

### GETTING BACK TO NORMAL

## But 'Solar Cyclone' May Be Back—One Scientist Says It Might Be in 48 Hours

While radio, telephone and telegraph systems began to return to normal yesterday and the nation's communications lines took inventory on the extent of disruption to service, accounts of freakish results from Sunday's invisible electrical bombardment began trickling in to show what can happen to the earth when the sun, 92,930,000 miles away, breaks out in a rash of spots.

Communications officials said it was impossible to estimate in dollars and cents the cost in delayed service and damaged equipment resulting from interruptions to communications because of magnetic disturbances attributed to sun spots and their supposed by-product, the aurora borealis. Scientists were left to puzzle over just what had happened—and whether it was likely to happen again.

In New York William H. Barton Jr., executive curator of the Hayden Planetarium, who spent the morning and afternoon photographing the sun spots, indicated that the "hang-over" from Sunday's sun spree might linger for several days.

#### Philadelphia Scientist's Views

In Philadelphia Dr. Roy K. Marshall, astronomer at Franklin Institute's Fels Planetarium, predicted that another, though less intense, magnetic storm would return in twenty-eight days. He explained to The Associated Press that the sun's revolution would bring the same huge spot that caused the damage back into position exactly opposite earth at that time, so that the magnetic disturbances might be felt all over again.

From Los Angeles Dr. Seth B. Nicholson of the staff of Mount Wilson Observatory said the magnetic storm was so violent that the needle of an instrument set up to measure the barrage of electronic discharges was carried off the recording paper. "Indications were that the storm was the greatest in the current eleven-year cycle," he said.

Shortly after 4 P. M., after two earlier tries had been unsuccessful because the Hayden Planetarium lacks the proper type of telescope-camera, Mr. Barton was able to obtain a fair picture of the trouble-making spots.

The "real mystery" confronting scientists, Mr. Barton said, is the cause of the "solar cyclones" that bring out the spots on the face of the sun. He said it was entirely possible that the disturbances might be repeated within forty-eight hours of the time the trouble began.

Some of the strange results of the magnetic bombardment included the burning out near Bangor, Me., of lightning arresters that Western Union engineers had thought were immune to anything but lightning; the complete fusing at Neche, N. D., of the Fargo-to-Winnipeg cable; a 1,500-volt "dip" on electrical generators in New York City and unintelligible rushes of static from short-wave radio receivers.

#### Phone Services Nearly Normal

The American Telephone and Telegraph Company reported that its transatlantic radio-telephone service, completely disrupted for several hours on Sunday, was almost entirely back to normal by yesterday morning. Radio-telephone service to South America and across the Pacific also was "satisfactory," the company said.

Long-distance telephone lines in the United States, according to the company spokesman, also were "practically back to normal," but to guard against possible severe shock to any workmen, the long-lines department stopped all outside construction work until the danger from unharnessed earth currents passes.

Western Union reported it already had taken steps, through alteration of the grounding systems on its existing circuits, to "minimize interference on major circuits" if the magnetic trouble should recur. It was able to handle all business yesterday, and its trans-Atlantic cables were reopened.

There was considerable damage throughout the system from burned-out fuses, carbons and grounded wires.

Postal Telegraph said its wire trouble was "practically 100 per cent cleared up."

Local telephone service was not disrupted at all, the New York Telephone Company announced after a second check-up yesterday.

Commercial communication via cable with Europe was resumed yesterday, though several radio agencies reported that short-wave radio connection with northern Europe, particularly Scandinavia and Moscow, was still bad and that a good deal of difficulty still was encountered on short-wave channels in general.

The broadcasting companies reported that they had canceled short-wave broadcasts from Europe because, in the main, speech was still unintelligible.

The Consolidated Edison System reported that at the height of the trouble Sunday morning "voltage dips" of 1,500 volts were recorded at its three main generator stations in Brooklyn and the Bronx. The dips, a spokesman explained, represented loss in the strength of electrical power being generated.

#### Aurora Borealis in Bulgaria

By Telephone to THE NEW YORK TIMES.

SOFIA, Bulgaria, March 25—Yesterday evening there was a brilliant display of the aurora borealis throughout Bulgaria, especially in the northern districts. This is the second time in recent years that northern lights have been seen in Bulgaria, the last time having been in January, 1938.

There was a flaming track of fire in the heavens and in several places in the provinces, and even in Sofia fire brigades were called out.

A less brilliant display was seen in Yugoslavia.