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Washingtonians who stayed up late enough Thursday night got a rare reward if they happened to look up: they could see the Northern Lights.

And since scientists of the Naval Research Laboratory knew the view of the aurora borealis was coming, they managed to get some television tapes of the event, caused by a large flare on the surface of the sun.

According to Grady Hicks, who ran the experiment from a field station near Waldorf, Md., the predominantly red aurora showed up in a fan shape, with the widest part near the northern horizon.

Rays rippled across the sky, he said, giving the effect of moving draperies of light.

The aurora was visible between midnight and 4 a.m. Friday, Hicks said. At about 1:15 a.m. it was bright enough to be visible from Washington itself—despite the brightness of the city's own lights.

The aurora was the final stage of a series of events that started on the sun earlier this week, according to Herbert Friedman of the Naval Research Laboratory.

Solar flares come when a loop of gas held captive by the sun's magnetic field "opens up and stretches out like a streamer," he said.

Besides the outward stream of gas, the energy released by this kind of solar flare takes the form of visible and ultraviolet light and a "great burst of X-rays," Friedman said.

The X-rays, which travel at the speed of light, took only about eight minutes to cross the 93 million miles to the atmosphere of the earth where they were detected by a Solrad satellite that has been monitoring X-rays ever since it was launched a year and a half ago.

The stream of gas traveled much more slowly — it took about a day to get here.

But the Naval Research Laboratory scientists knew it was coming, and because the energy of the X rays had been very high they thought the gas probably would have enough energy to make an aurora when it reached the earth's upper atmosphere and interacted with charged particles.

They had set up a television camera that is sensitive to very low levels of light and were ready when the aurora appeared.

The aurora was brighter to the north, and Washington was probably about as far south as it could be seen with the naked eye, although gas particles were detected as far south as Florida, Friedman said. His recollection is that the last aurora visible this far from the North Pole came in 1958.

The earth's magnetic field is a shield against such solar events as Tuesday's flare. Unless they have particularly high energy, Friedman said, the streams of charged gas dent it only near the North and South Poles, which is why they are the focal point of the aurora borealis and the aurora australis.