FATHER OF ALL FORECASTERS

Charles Brusso ■ 2012

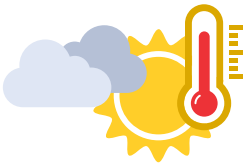
Cleveland Abbe (1838-1916) was an American meteorologist responsible for creating the foundation of weather forecasting. In this informational text, Charles Brusso discusses what motivated Abbe to study the weather and how we continue to benefit from his work today.

Did you know that the National Weather Service gathers data from across the country to help create local weather reports every day? In fact, its on-line national map refreshes itself every five minutes to offer updated watches, warnings, and advisories. Cleveland Abbe would be so proud!

Abbe was born in New York City on December 3, 1838. In the summers, he worked on his grandfather's farm outside Windham, Connecticut. Fascinated by nature, he learned how important the weather could be on the farm. Heavy rains might delay planting or drown plants before they could be harvested. Storms could knock crops flat.

After studying science and mathematics, Abbe became a teacher. While teaching at the University of Michigan in Ann Arbor, he also studied astronomy. In 1868, he was hired as director of Ohio's Cincinnati Observatory. Abbe knew that atmospheric conditions such as clouds, haze, fog, and rain could affect astronomical observations. He became fascinated with studying weather in other places to predict what the weather would be like.

But how would he get the data he needed? Abbe proposed setting up a network of weather observers around Cincinnati.



The observers would record eight different things, from local barometric pressure and temperature to details about atmospheric conditions, such as the wind, clouds, and rain or snowfall amounts. They would send their data by telegraph to Abbe at a central office, where he would coordinate the information to predict the weather for the next few days. His predictions could then be sent back by telegraph to each weather station, so they could share the results.

Abbe convinced the Cincinnati Chamber of Commerce to give him money to set up a network of 20 observers and help get his weather bulletin printed in the city's daily papers. The first official public forecast — predicting weather for the Ohio River valley over the next two days — appeared September 22, 1869.

The success of Abbe's local weather reports, or "probabilities," helped him gain the attention of larger groups, including the U.S. government. Early in 1870, President Ulysses S. Grant signed a bill establishing the Weather Bureau, and Abbe became its chief meteorologist.

Originally part of the U.S. Army Signal Corps, the bureau used observers in distant military stations around the country to gather data. Abbe's first official national weather report was delivered on February 19, 1871.

For the first six months, Abbe was the only one who knew enough about meteorology to create forecasts. His skill earned him the nickname "Old Probabilities." Abbe worked hard to make each forecast consistent and precise. Every report included information on temperature, wind direction, barometric pressure, and current weather conditions.

But Abbe couldn't do it all by himself, so he taught others to measure and predict the weather. By 1872, the Weather Bureau was sending out more than 500 daily weather bulletins for locations across the country. Abbe also wrote articles, did research, and organized state weather services across the country. He even thought of dividing our country into four standard time zones to help coordinate weather observations.

Abbe wanted his observers to have the best equipment for carrying out their work. The bureau's instrument division tested thousands of barometers, anemometers, and hygrometers. Bureau scientists also designed and built many of their own instruments.

Despite failing health, Abbe was part of the U.S. Weather Bureau until his death on October 28, 1916 at the age of 77. His hard work established today's National Weather Service (renamed from the U.S. Weather Bureau in 1967) and built the foundations of modern meteorology.