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How Did Scientists First Discover That the Atmosphere Has Layers?



Have you ever looked up at the sky and wondered what's up there? For a long time, scientists thought the air above Earth was the same all the way up. But as they studied more, they learned the atmosphere has layers—just like a cake!

In the 1700s and 1800s, people began using balloons to explore the sky. At first, they used hot air balloons to lift people and instruments into the air. These early balloon flights helped scientists measure things like temperature, air pressure, and wind.

One big clue came when scientists noticed that temperature didn't always go down as they went higher. For example, in one layer, it got colder and colder the higher they went. But later, they found a layer where the temperature started going up instead! That surprise showed them the air wasn't the same at every height. There were differences—layers!

In the early 1900s, a scientist named Léon Teisserenc de Bort made many balloon flights in France. He discovered that the atmosphere has at least two main layers. He called the lower one the troposphere, where weather happens. Above that, he found the stratosphere, where the temperature stops dropping and even rises. As technology improved, scientists used weather balloons, airplanes, and later satellites to study the sky. They found even more layers: the mesosphere, thermosphere, and exosphere. Each one has its own temperature and gases.

The layers are important because they affect weather, air travel, and how signals like radio waves travel. Thanks to early balloon explorers and scientists like Teisserenc de Bort, we now understand that Earth's atmosphere is made of layers, each playing a special role in life on our planet.