Timeline of the development of the theory of plate tectonics

Significant events in the development of the theory of plate tectonics are summarized in the table.

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Year	Event
1596	Flemish mapmaker **Abraham Ortelius** noted that the coastlines of the continents appear to fit together. He suggested that the continents were once joined and that the Americas were "torn away" from Europe and Africa.
1638	Danish Anatomist and Geologist, **Nicolaus Steno** - proposed the **Law of Superposition**: each layer of rock is older than the layer above it.
1785	Scottish farmer and naturalist, known as the founder of modern geology, **James Hutton** *used Steno's Law of Superposition* and compared rock layers to rocks above and below the rock. ***Evidence***: Hutton found granite penetrating metaphoric schists, in a way which indicated that the granite had been molten at the time. This showed to him that granite formed from cooling of molten rock, not precipitation out of water as others at the time believed, and that the granite must be younger than the schists.
1912	German meteorologist and geophysicist **Alfred Wegener** proposed that the continents were once joined in a supercontinent called **Pangea.** Wegener believed that Pangea's constituent portions moved thousands of miles apart over long periods of geologic time, a phenomenon he called "continental displacement" (now known as **continental drift**). Until the 1950s and '60s, however, his idea was rejected by most geologists because he could not describe the driving forces behind continental drift.
1929	British geologist **Arthur Holmes** proposed that convection in the mantle is the force driving continental drift. As magma is heated it tends to rise and then it cools and sinks again. Although his ideas were not taken seriously at the time, Holmes's mantle convection hypothesis later gained support.
1950s	Oceanographic vessels mapping the ocean floor provided data on the topographic features of the **ocean basin,** leading to the **discovery of mid-ocean ridges**. These underwater mountain ranges encircling the planet form as Earth's plates separate.
1960	American geophysicist **Harry H. Hess** developed the idea that oceanic crust forms along mid-ocean ridges and spreads out laterally away from the ridges. The following year, geophysicist **Robert S. Dietz** named the phenomenon **seafloor spreading**. Hess and Dietz's work played a pivotal role in the development of the modern theory of **plate tectonics.**
1963	British geologists **Frederick J. Vine and Drummond H. Matthews**—as well as Canadian geophysicist Laurence W. Morley, who worked independently of the others—postulated that new crust would have a magnetization aligned with Earth's geomagnetic field. They noted that this would appear over geologic time as bands of crust that exhibit alternating patterns of magnetic polarity. *The later identification of such patterns of magnetic striping provided additional evidence that Earth's plates separate at mid-ocean ridges*.

Mid-1960s	A global network of sensors designed to detect hydroacoustic signals was installed to monitor compliance with the Nuclear Test-Ban Treaty of 1963. The sensors also recorded **earthquake** activity. Scientists later found that earthquakes and volcanic activity *occur almost exclusively at the edges of tectonic plates*.
1968	The vessel ***Glomar Challenger*** set sail on an exploration of the *mid-ocean ridge between South America and Africa*. Core samples obtained from **drilling** revealed that *rocks close to mid-ocean ridges are younger than rocks that are farther away from the ridges*.
1968	Professor of Geophysics at the University of Cambridge, **Dan McKenzie,** Proposed the **Theory of Plate Tectonics**. He had mathematical Evidence to back his theory up.
Mid-1970s	Scientists created three-dimensional images of Earth's interior by combining information from many earthquakes using an approach similar to **computed tomography** (CT) scanning. This technique, now known as seismic tomography, enables scientists to investigate the dynamic processes in the deep interior of Earth.