

PIONEER WOMEN OF GEOPHYSICS

INGE LEHMANN (1888-1993)



Education and First Job

Education: Mathematics, University of Copenhagen and University of Cambridge, Newman College

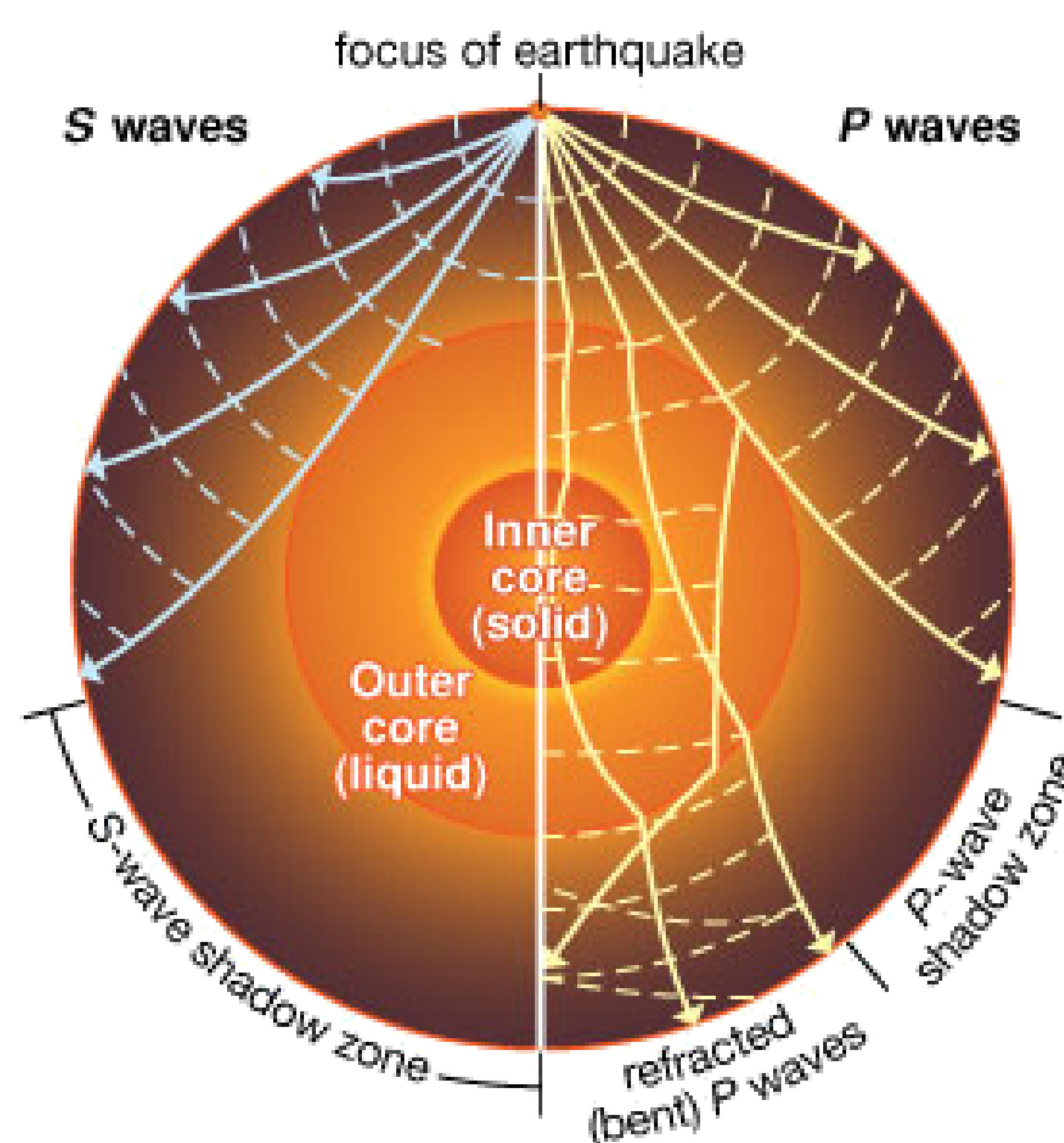
Early Influences: Her father, Alfred Lehmann, experimental psychologist and Hanna Adler, her high school teacher and Niels Bohr's aunt.

First job as a geoscientist: Assistant to geodesist Niels Nørlund where she set up seismological observations in Denmark and Greenland.

Ways Inge made an impact

- She discovered that the Earth has a solid inner core inside a molten outer core in 1936 and it was proven correct later by computer calculations
- First to interpret P wave arrivals that appeared in the P wave shadow zone of the Earth's core, as reflections from an inner core in a paper titled P'
- Discovered a step-change increase in seismic velocities of P- and S-waves at a depth of 220 ± 30 km. This velocity change boundary was named the Lehmann discontinuity after her. It is only easily observable under continents.
- Co-founded the Danish Geophysical Society in 1936 and was its chair in 1941 and 1944
- First woman to win the William Bowie Medal in 1971, which is awarded annually for "outstanding contributions to fundamental geophysics and for unselfish cooperation in research" by the American Geophysical Union (AGU)

Key Discovery Diagrams



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Refracted P waves indicate a solid inner core along with a liquid outer core.

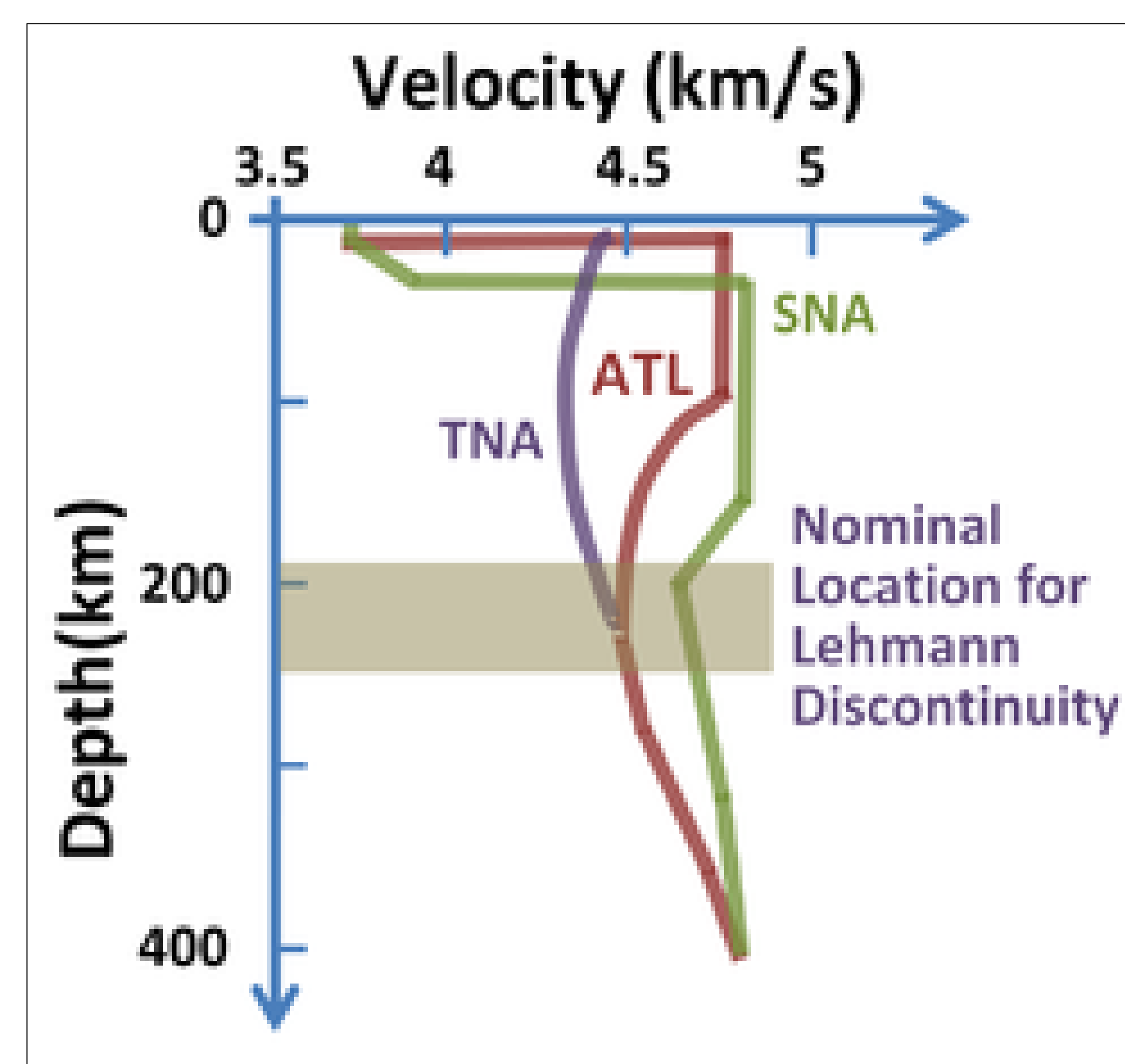


Diagram showing the approximate depth location of the Lehmann discontinuity

How Inge was employed

- In 1928, she became the State geodesist and head of the Department of Seismology at the Geodetical Institute of Denmark.
- In 1923, she was assistant to J.F. Steffensen, professor of actuarial science at Copenhagen University.