On a balloon at an altitude of 5,000 meters, Victor Hess discovers highly "penetrating radiation" coming from outside our atmosphere, currently known as cosmic rays.

Using a newly invented cloud chamber, Dimitry Skobelzyn observes the first ghostly tracks left by cosmic rays. Walter Bothe and Werner Kolhorster verify that the tracks are curved, showing that cosmic rays are charged particles.

Wolfgang Pauli postulates a new particle with no charge and no mass. This particle would carry the missing energy in beta decays measured by Otto Hahn and Lise Meitner almost 20 years previously. Enrico Fermi will later name it the "neutrino."

Enrico Fermi put forth an explanation for the acceleration of cosmic rays: protons speed up by bouncing off moving magnetic clouds in space. Exploding stars are believed to act as such cosmic accelerators, but they cannot account for the highest energy cosmic rays.

Frederick Reines and Clyde Cowan report the first direct evidence for neutrinos.

Kenneth Greisen & Frederick Reines propose a new type of detector to search for very high energy neutrinos in an underground mine. Greisen predicts that the detection of neutrinos produced by or in coincidence with cosmic rays will become one of the tools of both physics and astronomy in the next decade.

Moisey Markov proposes installing detectors in a lake or a sea to determine the direction of charged particles, such as muons produced by the interaction of incoming neutrinos, with the help of Cherenkov radiation.

First detection of atmospheric neutrinos occurs almost simultaneously in a South African gold mine and in the Indian Kolar Gold Fields mine.

Raymond Davis, Jr. and John N. Bahcall successfully detect the first solar neutrinos in the Homestake experiment in South Dakota.

The Deep Underwater Muon and Neutrino Detector (DUMAND) project begins with the aim of building a cubic-kilometer neutrino telescope in the Pacific Ocean, off the shore of Hawaii, five kilometers beneath the surface.

Baksan Neutrino Observatory begins operation in the Caucasus Mountains in Russia.

Alexander Chudakov proposes using the deep water of Lake Baikal in Siberia to build a neutrino detector.

The first shallow-site experiment with small phototubes is tested in Lake Baikal.

The first stationary string is deployed in Lake Baikal, which records the downward moving muons produced by the interaction of cosmic rays in the Earth's atmosphere. Fifty days later, it is no longer working due to several technical issues in both the cables and the sensors.

DUMAND's first single prototype string, suspended from a ship, is successfully operated.

Neutrinos coming from a supernova, named SN 1987A, are accidentally observed by Kamiokande II in Japan, the Irvine-Michigan-Brookhaven detector in the US, and the Baksan Neutrino Observatory in Russia.

The Baikal experiment is approved as a long-term project to build a full-scale high-energy neutrino detector via steps of intermediate detectors of growing size.

Francis Halzen and John Learned propose the detection of high-energy neutrinos in deep polar ice.

DUMAND is approved for construction.

A fledgling collaboration of physicists, including Francis Halzen and Bob Morse at UW–Madison, proposes the Antarctic Muon and Neutrino Detector Array (AMANDA), at the South Pole.

The first sensors of the AMANDA detector are deployed at depths between 800 and 1000 meters in Antarctica's ice sheet. Air bubbles from firn ice originally at the surface are found at this depth, which makes particle track reconstruction impossible.

The DUMAND project is cancelled, after the first string of photodetectors deployed on the ocean bottom develops short circuits in the instrument that prevent communication with the installed apparatus.

A second set of sensors for AMANDA is deployed at a depth of 1500–2000 meters, and this time AMANDA proves to be a viable option for detecting very high energy neutrinos.

NT200, the first underwater neutrino telescope, is completed in Lake Baikal, an array of 192 sensors carried by eight strings.

AMANDA is completed, with 19 strings and about 700 sensors buried below 1,500 meters of Antarctic ice.

The construction of the IceCube Neutrino Observatory begins. The transition from AMANDA to the first cubic kilometer neutrino detector has already begun.

The new Gigaton Volume Detector (GVD) for Lake Baikal is designed, which could become the first underwater cubic-kilometer detector.

AMANDA is switched off after over a decade of data-taking, having provided record limits on fluxes for cosmic neutrinos and excluded the most optimistic models for neutrino production in cosmic sources.

IceCube is completed at the South Pole, with over 5,000 sensors distributed on 86 strings and deployed at depths between 1,500 and 2,500 meters.

The IceCube Collaboration announces the observation of the first flux of extraterrestrial high-energy neutrinos.