

TIMELINE OF PHYSICS - Last Update - 26 March 2024

No.	Date	Events
1	1st Century	Ionian school of Greek natural philosophers: first notions of a physical cosmology
2	BC610-546	Anaximander: Concept of Earth floating in space
3	BC585	Thales of Miletus: solar eclipse predicted
4	BC460-370	Democritus: Atomism
5	BC 384-322	Aristotle: Aristotelian physics
6	BC367-282	Ptolemy: Ptolemaic geocentric system, a phenomenological model of the solar system
7	BC300	Euclid: Euclidean geometry
8	BC250	Archimedes: Archimedes' principle
9	BC310-230	Aristarchos of Samos proposes a Heliocentric model
10	BC276-194	Eratosthenes: Circumference of the Earth measured
11	BC220-150	Apollonius of Perga and Hipparchus: Invention of Astrolabe
12	BC129	Hipparchus: Hipparchus star catalog of the entire sky and precession of the equinoxes
13	60	Hero of Alexandria: Catoptics: Hero's principle of the shortest path of light
14	500	John Philoponus: Theory of impetus
15	873	al-kindi ideas about light and finite universe
16	950	al-Farabi: On music theory and Ahsa Alolum
17	984	Ibn Sahl: Law of refraction
18	1010	Ibn al-Haytham (Alhazen): Optics, finite speed of light
19	1030	Ibn Sina (Avicenna): Concept of force
20	1050	al-Biruni: Speed of light is much larger than speed of sound
21	1100	Al-Bahā: Theory of motion with distinction between velocity and acceleration
22	1436	Wrote on the decimal system. Computed and observed the solar eclipses of 809AH, 810AH and 811AH, after being invited by Ulugh Beg, based in Samargand to pursue his study of mathematics, astronomy and physics.
23	1514	Nicolaus Copernicus: Heliocentrism
24	1584	Giordano Bruno takes the Copernican Principle a stage further by suggesting that even the Solar System is not the center of the universe, but rather a relatively insignificant star system among an infinite multitude of others.
25	1587	astronomer Tycho Brahe develops a kind of hybrid of the Ptolemaic and Copernican models, a geo-heliocentric system similar to that of Somajaji Nilakantha, now known as the Tychoenic system
26	1589	Galileo Galilei: Galileo's Leaning Tower of Pisa experiment
27	1593	Galileo Galilei invents one of the first thermoscopes, also known as Galileo thermometer
28	1610	Galileo Galilei uses the telescope, invented previously in the Netherlands, to discover the Galilean moons of Jupiter
29	1613	Galileo Galilei: inertia
30	1619	Kepler's laws of planetary motion
31	1621	Willebrord Snellius: Snell's law
32	1632	Galileo Galilei: The Galilean principle (the laws of motion are the same in all inertial frames)
33	1633	René Descartes outlines a model of a static, infinite universe made up of tiny "corpuscles" of matter
34	1638	Galileo Galilei demonstrates that unequal weights would fall with the same finite speed in a vacuum
35	1650	Otto von Guericke builds the first vacuum pump
36	1660	Robert Hooke: Hooke's law
37	1660	Blaise Pascal: Pascal's law
38	1662	Robert Boyle: Boyle's law
39	1665	Robert Hooke published his book Micrographia, which contained the statement: "Heat being nothing else but a very brisk and vehement agitation of the parts of a body."
40	1675	Isaac Newton argues that light is composed of particles, which are refracted by acceleration toward a denser medium, and posits the existence of "aether" to transmit forces between the particles.
41	1676	Ole Rømer: Rømer's determination of the speed of light traveling from the moons of Jupiter.
42	1679	Denis Papin designed a steam digester which inspired the development of the piston-and-cylinder steam engine.
43	1687	Principia Mathematica
44	1687	Isaac Newton: Newton's laws of motion, and Newton's law of universal gravitation
45	1687	Christian Huygens mathematical wave theory of light, published in his Treatise on Light
46	1689	Gottfried Leibniz develops the concept of vis viva, a limited version of the conservation of energy
47	1702	Guillaume Amontons introduces the concept of absolute zero, based on observations of gases
48	1738	Daniel Bernoulli publishes Hydrodynamica, initiating the kinetic theory
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50	1746	Ewald Georg von Kleist and Pieter van Musschenbroek: discovery of the Leyden jar
51	1749	Émilie du Châtelet, in her French translation and commentary on Newton's Philosophiæ Naturalis Principia Mathematica, derives the conservation of energy from the first principles of Newtonian mechanics.
52	1752	Benjamin Franklin: Kite experiment
53	1761	Joseph Black discovers that ice absorbs heat without changing its temperature when melting
54	1772	Black's student Daniel Rutherford discovers nitrogen, which he calls phlogisticated air, and together they explain the results in terms of the phlogiston theory
55	1777	Carl Wilhelm Scheele distinguishes heat transfer by thermal radiation from that by convection and conduction
56	1782	Antoine Lavoisier: Conservation of mass
57	1783	The amateur British astronomer John Michell proposes the theoretical idea of an object massive enough that its gravity would prevent even light from escaping
58	1783	Antoine Lavoisier discovers oxygen and develops an explanation for combustion in his paper "Réflexions sur le phlogistique", he deprecates the phlogiston theory and proposes a caloric theory
59	1785	Charles-Augustin de Coulomb: Coulomb's inverse-square law for electric charges confirmed.
60	1803	The English scientist Thomas Young demonstrates, in his famous double-slit experiment, the interference of light and concludes that light is a wave, not a particle
61	1805	The English chemist John Dalton develops his atomic theory, proposing that each chemical element is composed of atoms of a single unique type
62	1819	Pierre Louis Dulong and Alexis Thérèse Petit give the Dulong-Petit law for the specific heat capacity of a crystal
63	1822	Joseph Fourier formally introduces the use of dimensions for physical quantities in his Théorie Analytique de la Chaleur
64	1824	Sadi Carnot analyzes the efficiency of steam engines using caloric theory; he develops the notion of a reversible process and, in postulating that no such thing exists in nature, lays the foundation for the second law of thermodynamics, and initiating the science of thermodynamics
65	1827	Robert Brown discovers the Brownian motion of pollen and dye particles in water.
66	1839	Michael Faraday concludes from his work the divisions between the various kinds of electricity are illusory. He also establishes that magnetism can affect rays of light, and that there is an underlying relationship between the two phenomena.
67	1843	James Joule experimentally finds the mechanical equivalent of heat
68	1845	Henri Victor Regnault added Avogadro's Law to the Combined Gas Law to produce the Ideal Gas Law. $PV = nRT$
69	1847	Hermann von Helmholtz publishes a definitive statement of the conservation of energy, the first law of thermodynamics
70	1850	Rudolf Clausius introduces the concept of "entropy" (das Wärmegewicht, symbolized S) to denote heat lost or turned into waste. ("Wärmegewicht" translates literally as "heat-weight"; the corresponding English term stems from the Greek τέρμα, "turn".)
71	1850	Clausius gives the first clear joint statement of the first and second law of thermodynamics, abandoning the caloric theory, but preserving Carnot's principle
72	1859	Gustav Kirchhoff shows that energy emission from a black body is a function of only temperature and frequency
73	1861	Louis Pasteur's experiments show that the long-held acceptance of the spontaneous generation of life from non-living matter may be incorrect.
74	1867	Maxwell asks whether Maxwell's demon could reverse irreversible processes
75	1872	Ludwig Boltzmann states the Boltzmann equation for the temporal development of distribution functions in phase space, and publishes his H-theorem
76	1873	Maxwell: A Treatise on Electricity and Magnetism
77	1884	Boltzmann derives Stefan radiation law
78	1887	Michelson–Morley experiment
79	1887	Heinrich Rudolf Hertz: Electromagnetic waves
80	1888	Johannes Rydberg: Rydberg formula
81	1892	Lorentz-FitzGerald contraction
82	1893	Wilhelm Wien: Wien's displacement law for black-body radiation
83	1895	Wilhelm Röntgen: X-rays
84	1896	Henri Becquerel: Radioactivity
85	1896	Pieter Zeeman: Zeeman effect
86	1897	J. J. Thomson: Electron discovered
87	1900	Max Planck: Formula for black-body radiation - the quanta solution to radiation ultraviolet catastrophe
88	1904	J. J. Thomson's plum pudding model of the atom
89	1905	Albert Einstein: Special theory of relativity
90	1905	Albert Einstein proposes light quantum (later named photon) to explain the photoelectric effect
91	1905	Albert Einstein-Brownian motion
92	1905	Albert Einstein-Mass-energy equivalence
93	1907	Herman Minkowski: Minkowski Space-time
94	1911	Ernest Rutherford: Discovery of the atomic nucleus
95	1911	Kamernighl Onnes: Superconductivity
96	1913	Niels Bohr: Bohr model of the atom
97	1915	Albert Einstein: General relativity
98	1916	Schwarzschild metric
99	1919	Arthur Eddington: Light bending confirmed - evidence for general relativity
100	1922	Alexander Friedmann proposes expanding universe
101	1923	Stem-Gerlach experiment
102	1923	Edwin Hubble: Galaxies discovered
103	1923	Arthur Compton: Particle nature of photons confirmed by observation of photon momentum
104	1924	Bose-Einstein statistics
105	1924	Louis de Broglie: De Broglie wave
106	1925	Werner Heisenberg: Matrix mechanics
107	1926	Fermi-Dirac Statistics
108	1926	Erwin Schrödinger: Schrödinger Equation
109	1927	Werner Heisenberg: Uncertainty principle
110	1927	Georges Lemaitre: Big Bang
111	1927	Niels Bohr & Max Planck: Quantum mechanics
112	1927	Paul Dirac: Dirac equation
113	1927	Max Born: Born rule interpretation of the Schrödinger equation
114	1928	Paul Dirac proposes the antiparticle
115	1929	Edwin Hubble: Expansion of the universe confirmed
116	1930	Discovered the nuclear fission by Lise Meitner and Otto Frisch
117	1932	James Chadwick: Neutron discovered
118	1933	Ernst Ruska: Invention of the electron microscope
119	1935	Subrahmanyan Chandrasekhar: Chandrasekhar limit for black hole collapse
120	1937	Muon discovered by Carl David Anderson and Seth Neddermeyer
121	1938	Pvotr Kapitsa: Superfluidity discovered
122	1938	Otto Hahn, Lise Meitner and Fritz Strassmann Nuclear fission discovered
123	1939	Nikolay Krylov and Nikolay Bogolyubov give the first consistent microscopic derivation of the Fokker–Planck equation in the single scheme of classical and quantum mechanics
124	1941	Feynman path integral
125	1944	Ising model
126	1948	Richard Feynman, Shinichiro Tomonaga, Julian Schwinger, Freeman Dyson: Quantum electrodynamics
127	1948	Invention of the maser and laser by Charles Townes
128	1948	Claude Elwood Shannon establishes information theory
129	1956	Electron neutrino discovered
130	1957	BCS theory explaining superconductivity
131	1957	Aleksandr Solomonoich Kompaneets derives his Compton scattering Fokker–Planck equation
132	1962	SU(3) theory of strong interactions

133	1963	Murray Gell-Mann and George Zweig: Quarks predicted
134	1964	Bell's Theorem initiates quantitative study of quantum entanglement
135	1967	Unification of weak interaction and electromagnetism (electroweak theory)
136	1967	Pulsars (rotating neutron stars) discovered
137	1968	Vera Rubin: Dark matter theories
138	1972	Black-Hole Entropy
139	1973	Standard Model of elementary particles invented
140	1974	Black hole radiation (Hawking radiation) predicted
141	1975	Michael Fisher, Kenneth G. Wilson, and Leo Kadanoff: Renormalization group
142	1977	Anderson localization recognised (Nobel prize in 1977, Philip W. Anderson, Mott, Van Fleck)
143	1980	Quantum Hall effect
144	1981	Alan Guth Theory of cosmic inflation proposed
145	1982	Aspect experiment confirms violations of Bell's inequalities
146	1984	W and Z bosons directly observed
147	1987	High-temperature superconductivity discovered in 1986, awarded Nobel prize in 1987 (J. Georg Bednorz and K. Alexander Müller)
148	1995	Wolfgang Ketterle: Bose-Einstein condensate observed
149	1995	Top quark discovered
150	1997	Juan Maldacena proposed the AdS/CFT correspondence
151	1998	Accelerating expansion of the universe discovered by the Supernova Cosmology Project and the High-Z Supernova Search Team
152	1998	Atmospheric neutrino oscillation established
153	2000	Quark-gluon plasma found
154	2001	Solar neutrino oscillation observed, resolving the solar neutrino problem
155	2003	WMAP observations of cosmic microwave background
156	2004	Isolation and characterization of graphene
157	2008	16-year study of stellar orbits around Sagittarius_A* provides strong evidence for a supermassive black hole at the centre of the Milky Way galaxy
158	2009	Planck begins observations of cosmic microwave background
159	2012	Higgs boson found by the Compact Muon Solenoid and ATLAS experiments at the Large Hadron Collider
160	2015	Gravitational waves are observed
161	2016	Topological order - topological phase transitions and order - recognized (Nobel prize, David J. Thouless, F. Duncan M. Haldane and J. Michael Kosterlitz)
162	2019	First image of a black hole