

# Daily Discovery Calendar 2019

Discover an important scientific anniversary for every day of the year

## Key

Days in blue text: Scotland & Science

- Health
- Archaeology
- Biology
- Computing
- Astronomy
- Physics
- Discovery/Inventions
- Earth Science
- Psychology
- Chemistry
- Engineering
- Maths

## JANUARY

- Elizabeth Blackwell becomes the first woman to be registered with the General Medical Council in the UK as a practicing doctor (1859)
- Louis Daguerre photographed the Moon for the first time (1839)
- Birthday of Marianne Simmel, psychologist who wrote significant works on Phantom Limb sensation (1923)
- William W. Grant and Mary Gartside performed the first successful appendectomy (1865)
- Birthday of Kathleen Kenyon, archaeologist known for her work at Jericho (1906)
- Leon Foucault experimentally proved Earth's rotation movement (1851)
- Francium (Fr) becomes the last naturally occurring element to be discovered (1930)
- Helen Rodríguez Trias, American paediatrician credited with helping to expand the range of public health services for women and children in minority and low-income populations around the world, receives the Presidential Medal (2001)
- A team of Canadian and British researchers created a tablet computer, thin as paper and flexible (2013)
- Birthday of Katharine Blodgett, inventor of "invisible" non-reflective glass, and first woman to gain a PhD in physics from the University of Cambridge (1898)
- Scientists have created a test (SESI-MS) similar to that of the alcohol meter which can be utilised for lung infections diagnosis (2013)
- Professor Marie Cassidy from Rutherglen is appointed the State Pathologist for Ireland - Prof Cassidy is also known for her work for the UN identifying the remains of victims of war crimes in Bosnia (2006)**
- A team of researchers from Duke University have created the first artificial human muscle capable of contracting (2015)
- The first five women were elected to the Royal Astronomical Society: Mary Blagg, Ella Church, Alice Cook, Irene Warner & Fiammetta Wilson (1916)
- The first ever docking of two manned space craft, Soyuz 4 & Soyuz 5, takes place in the Earth's orbit (1969)
- Google develops contact lenses capable to measuring glucose levels in tears (2014)
- William Muir, Scottish engineer and inventor was born in Catrine, Ayrshire (1806)**
- Astronomers from the University of Arizona have made the first optical identification of a pulsar (1969)
- NASA launched the New Horizons space ship, which has passed by Pluto in July 2015 (2006)
- Researchers have demonstrated that inside human cells there is DNA with a quadruple helix present (2013)
- Birthday of Sophia Jex-Blake, one of the "Edinburgh Seven" who led the campaign to secure women access to University education and later studied medicine at the University of Edinburgh (1865)**
- Open Project Worm researchers mapped a worm's brain, created software that replicates its nervous system and uploaded it into a LEGO robot, who searched for food and avoided obstacles (2015)
- Birthday of Gertrude Elion, Nobel prize winning pharmacologist who helped develop the AIDS drug AZT (1918)
- The first Uranus flyby is achieved by the Voyager 2 space probe at a distance of 81,500 km (1986)
- Scientists have created an organic solar cell inspired by evolution with greater energy harvesting efficiency (2013)
- John Logie Baird demonstrates the first working television system (1926)**
- Asteroid 274301 from the Main Belt of the Solar System was officially renamed "Wikipedia" by the Committee for the Nomenclature of Small Bodies (2013)
- An American research team used the most powerful supercomputer in the world at the time, the IBM Sequoia to make a record calculation (2013)
- Japanese researchers have developed a method of transforming adult cells from mice into stem cells by dipping them in acid (2014)
- Edward Bransfield, an Irish Navy officer, discovers Antarctica (1820)
- Scottish geneticist Patricia Jacobs, working with colleague John Strong, are the first to describe chromosomal abnormality in humans known as Klinefelter syndrome (1959)**

## FEBRUARY

- The 200-inch Hale Telescope was used for the first time. It was the largest in the world at the time (1949)
- Californian researchers have used genetic modification to rejuvenate older blood cells from elderly mice for the first time (2013)
- Birthday of Moira Dunbar, originally from Edinburgh, the first woman to conduct scientific research on Canadian icebreaker ships (1918)**
- Australian engineers have built a "quantum microscope" offering an unprecedented level of precision in measuring living biological systems (2013)
- The first prosthetic hand with a tactile sense was implanted (2014)
- The Horsehead Nebula is discovered by Scottish Astronomer Williamina Fleming (1888)**
- Birthday of William Huggins, the first man to determine the chemical composition of stars through spectral analysis (1824)
- The first transatlantic transmission of a TV signal using short wave radio was made between Turley, England and Hartsdale, New York (1923)
- The discovery of the oldest star in the Universe was announced (2014)
- Birthday of Edith Clarke, one of the first female electrical engineers and known for advancements in electrical power systems (1883)
- Lise Meitner publishes the first discovery of nuclear fission of uranium when it absorbed an extra neutron (1939)
- Birthday of Charles Darwin, the biologist that invented the theory of evolution by natural selection (1809)
- Scientists successfully cured type 1 diabetes in dogs, using an innovative gene therapy (2013)
- Engineers from Oxford University have built a car that can automatically change from manual to auto-pilot driving mode (2013)
- Birthday of Galileo Galilei, the first person to view the sky through a telescope (1564)
- Mars One announced the names of the 100 candidates from which the three people to go to Mars will be chosen (2015)
- Birthday of Alice Grace Cook, British Astronomer known for her observations of meteorites and one of the discoverers of nova V603 Aquilae (1877)
- A direct telegraph link between the UK and New Zealand is established for the first time (1876)
- Birthday of Nicolaus Copernicus, the astronomer who proposed a theory that the Earth and the other planets revolve around the Sun is born (1473)
- Birthday of Elizabeth Marston, credited with the development of the systolic blood pressure measurement, and being the inspiration for the cartoon character Wonder Woman (1893)
- Researchers at Cornell University printed a live artificial ear from collagen cells collected from live ears. In the future, this kind of ear could be grown on order for patients (2013)
- Birthday of Heinrich Hertz, the first person to produce and detect radio waves (1857)
- Birthday of Agnes Arber, botanist specialising in the study of monocot plants (1879)
- The Descent of Man, a book by Charles Darwin, was published (1871)
- Birthday of Ida Noddack, chemist who co-discovered element 75 rhenium (1896)
- Birthday of Susan Helms, the female astronaut who took the longest walk through space at 8 hours 56 minutes (1958)
- Birthday of Alice Hamilton, pathologist best known for her research on industrial diseases which lead to public pressure for safer working conditions (1869)
- The first colour TVs are offered for sale to the US public (1954)

## MARCH

- Birthday of Professor Mufly Calder known for her work in modelling complex software for use in biomedical systems is appointed Chief Scientific Advisor to the Scottish Government (2012)**
- Scientists captured light in a photo as both a particle and a wave for the first time (2015)
- HIV was cured in a child by administering a treatment based on antiretroviral medication shortly after birth (2013)
- Muriel Robertson from Glasgow, is one of the first people to be elected to the Tropical Medical Research Committee of the Medical Research Council. Robertson had significant experience in researching the parasite responsible for African sleeping sickness (1936)**
- The Supermarine Spitfire makes its first ever flight from Eastleigh (1936)
- Birthday of Valentina Tereshkova, the first woman to have flown in space in 1963 (1937)
- Birthday of Ethel Currie, known for her work in palaeontology is one of the first women to be elected to the Royal Society of Edinburgh, along with Sheila Marshall [see 7 April] (1949)**
- The first artificial heart transplant took place (1952)
- Professor Annette Ferguson wins the Friedrich Wilhelm Bessel Research Award in recognition of her research into the histories of nearby galaxies (2017)**
- Barbara Liskov, one of the first women to receive a doctorate in computer science was awarded the Alex Turing Prize for her work in the design of programming languages (2009)
- Birthday of Joseph Bertrand, French mathematician known for his work on differential equations (1822)
- The efficiency of a new Alzheimer disease treatment is demonstrated for the first time in mice (2015)
- The Alcama Large Millimetre Array, the world's most powerful radio telescope in the world at this point in time, had become fully operational in Chile (2013)
- Birthday of Albert Einstein, physicist who developed the theory of relativity (1879)
- Birthday of Emil von Behring, the bacteriologist who created vaccines against diphtheria and tetanus (1854)
- Birthday of Anna Atkins, English botanist and first ever female photographer (1799)
- Birthday of Tessa Holyoake, originally from Aberdeen, haematology-oncology physician credited with discovering the stem cell for chronic myeloid leukaemia (1963)**
- The discovery of high temperature superconductivity was announced to a meeting of scientists in New York (1987)
- Swiss scientists developed a medical scanner that can be implanted under the skin to monitor a series of blood conditions, offering instant results to a mobile phone (2013)
- Genetic therapy was used to cure leukaemia in three adult patients (2013)
- Scientists developed a video screen that allows users to see 3D images without special glasses (2013)
- Auguste and Louis Lumiere made the first demonstration of cinema in Paris using a celluloid film (1895)
- Birthday of Emmy Noether, noted mathematician for her contributions in the fields of algebra and theoretical physics (1882)
- The Scottish Ornithologists' Club is established - one of the founders Evelyn Baxter would later be the first women to receive the British Ornithologists medal (1936)**
- The first supersonic flight of British built Concorde 2, reaching 700mph (1970)
- Birthday of Marion Cameron Gray, mathematician originally from Ayr. The Gray Graph is named after her (1902)**
- Charles Darwin, aged 18, submits his first ever scientific discovery after discovering several things about the biology of tiny marine animals while working on the Scottish coast (1827)**
- Stanford University researchers made public the building of a functional device, similar to a transistor, called a transcriptor, out of DNA and RNA molecules (2013)
- A robotic ant colony that behaves like a real one was created. The minuscule machines can be programmed to avoid obstacles and to find the fastest route through a network or a labyrinth (2013)
- Doctor Crawford Long used for the first time an anaesthetic during a surgical operation (1842)
- Birthday of René Descartes, French philosopher and mathematician, author of the philosophic concept "Cogito ergo sum" (I think, therefore I am) (1596)

## APRIL

- George Gamow postulated the theory that the Universe was formed following a Big Bang (1948)
- Birthday of physicist Francesco Grimaldi, who discovered the diffraction of light (1618)
- Birthday of Jane Goodall, considered to be the world expert on chimpanzees (1934)
- Scottish Geologist James Hutton gives his first public reading of his Theory of Earth in Edinburgh. His writings would later become fundamental principles of geology (1785)**
- Birthday of Hattie Alexander, paediatrician and microbiologist whose work on influenza meningitis helped significantly reduce infant death rates (1901)
- Explorers Robert Peary and Matthew Hensen became the first people to reach the North Pole (1909)
- Birthday of Sheila Marshall, known for her work in marine biology is one of the first women to be elected to the Royal Society of Edinburgh, along with Ethel Currie [see 7 March] (1949)**
- The Falcon 9 rocket, built by SpaceX, successfully landed on a floating platform (2016)
- NASA officially announced the end of the selection of the first astronauts (1959)
- Scientists developed the first objective method for measuring pain by directly studying patients' brains (2013)
- Birthday of Alexander Buchan, Scottish meteorologist known for his work establishing weather maps and modern weather forecasting (1829)**
- The first women graduate from the University of Glasgow, among them Ruth Pirret with a BSc in Pure Science. She would later research the chemistry of radioactive elements (1898)
- A tetraplegic man from Ohio managed to perform functional movements with his fingers, after a chip was implanted in his brain (2016)
- A paper on how electrical conductivity of rocks can be used to discover facts about geological history is published by Scottish Geophysist Rosemary Hutton (1977)**
- Birthday of Leonardo da Vinci, Italian Renaissance painter, sculptor, inventor, engineer and architect (1452)
- Birthday of Joseph Black, Scottish physician and chemist, known for his discoveries of magnesium, latent heat, specific heat and carbon dioxide (1728)**
- Researchers from the University of Cardiff achieved major progress in treating chronic lymphocytic leukaemia (CLL), the most common form of leukaemia (2014)
- Birthday of Mamie Phipps Clark, social psychologist who worked on understanding the development of social-consciousness in black pre-school children (1917)
- Launch of the first space station, Salyut 1 (1971)
- Marie and Pierre Curie obtained the first gram of Radium, the first sample of this radioactive element, by processing 8 tons of uraninite (1902)
- Birthday of John Muir, Scottish conservationist who championed the establishment of Sequoia and Yosemite national parks (1838)**
- First human eye transplant (1969)
- Birthday of Scottish mathematician Sheila Scott Macintyre, best known for her work on the Whittaker constant and co-authoring the German-English maths dictionary with Edith Witte (1910)**
- IBM developed a robot combining telepresence and augmented reality technologies to assist engineers working on complex projects in remote areas (2013)
- The genome of the tsetse fly which causes sleeping sickness, was fully sequenced following 10 years of sustained efforts and millions of dollars invested (2014)
- Birthday of geologist Charles Richter, inventor of the Richter scale, which measures earthquake magnitude (1900)
- Birthday of Samuel Morse, inventor of the Morse code (1791)
- The discovery of a vaccine that immunizes humans against yellow fever was announced (1932)
- Birthday of Mary Agnes Chase, American botanist who is known for being a leader in the field of the study of grasses (1869)
- Birthday of Maria Gordon, eminent Scottish geologist and palaeontologist (1864)**

## MAY

- Nicolaus Copernicus circulated "The Little Commentary", in which he showed the heliocentricity of the solar system (1543)
- Harvard scientists unveiled RoboBee, a miniature robot equipped with the smallest flight-capable wings ever designed (2013)
- Birthday of Anne Robertson, later Prof of Archaeology at University of Glasgow and expert on the Antonine wall and Roman Imperial coins (1910)**
- Birthday of Biologist Thomas Huxley, the first to suggest that birds evolved from dinosaurs (1825)
- The first railroad in continental Europe was inaugurated in Belgium, between Brussels and Mechelen (1835)
- The first ever adhesive postage stamp is sold in Great Britain, which had a profile of Queen Victoria and was known as the "penny black" (1840)
- Construction begins on the Mackinac Bridge in Michigan, at the time it was the longest suspension bridge in the world (1954)
- Birthday of British naturalist David Attenborough, known for producing and presenting numerous science documentaries (1926)
- A laser beam is bounced off the surface of the moon from Earth for the first time by scientists from MIT, it was estimated the light beam would have covered 4 miles on the surface of the moon (1962)
- Birthday of Cecilia Payne-Gaposchkin, astronomer who discovered the chemical composition of stars and that helium and hydrogen are the most abundant elements in the universe (1900)
- Birthday of American physicist Richard Feynman, Nobel Prize laureate, one of the scientists who considerably expanded quantum electrodynamics theory (1918)
- Birthday of Florence Nightingale, the first modern nurse and an important statistician (1820)
- Birthday of Inge Lehmann Danish, seismologist who discovered that the Earth has a solid inner core inside a molten outer core (1888)
- Edward Jenner, "the father of immunology", successfully tested a vaccine for smallpox, in what would become the first vaccine in history (1796)
- Marion Ross, physicist from Edinburgh, submits her PhD thesis on x-rays. Ross later discovers major advances in x-ray crystallography and fluid dynamics (1943)**
- Physicist Theodore Maiman built the first laser using a ruby crystal (1960)
- Argentine palaeontologists discovered what seems to be the largest dinosaur found so far, measuring 40m in length and 20m in height, and weighing 77 tons (2014)
- Helen Sharman becomes the first British person to go into space (1991)
- Birthday of Gillian Bates, a British Biologist credited for her molecular research which lead to the discovery of the cause of Huntington's disease (1956)
- Cartographer Abraham Ortelius published the first modern geographic atlas (1570)
- Birthday of Mary Anning, fossil collector and palaeontologist known for her discoveries of fossils from the Jurassic period (1799)
- Plans were approved to build the world's largest wave capturing complex in NW Scotland with a generation capacity estimated at 40 MW (2013)**
- Birthday of Keith Campbell, scientist at the Roslin Institute in Edinburgh who was a key member of the team who cloned Dolly the sheep (1954)**
- Birthday of Lillian Gilbreth, American psychologist and engineer known for her work in applying psychological organisation in industry (1878)
- The first news communicated by telegraph was sent 80 miles to the Baltimore Patriot newspaper about the result of a vote in US Congress (1844)
- Using new algorithms, researchers generated precise images of subcellular structures in milliseconds, instead of minutes (2013)
- Birthday of Lawrence Krauss, American physicist and cosmologist, the author of numerous books popularising science and physics in particular (1954)
- Eizre Dionne gives birth to the first set of quintuplets who survive infancy (1934)
- The Runcom-Widnes Transporter Bridge is opened across the river Mersey, the largest of this type of bridge ever to be built (1905)
- Biomedical researchers in Edinburgh successfully synthesize human blood using stem cells (2013)**
- Birthday of Chien-Shiung Wu, an experimental physicist who made significant contributions in the field of nuclear physics (1912)

## JUNE

- Emergency Medicine magazine publishes the Heimlich manoeuvre for unblocking airways blocked by a foreign object (1974)
- Marriage of Katherine Dewar and James Clerk Maxwell in Aberdeen. Katherine contributed significantly to Maxwell's experiments on colour vision and viscosity of gas (1858)
- Katia and Maurice Kraft, pioneering volcanologists who made live films of eruptions are killed on Mount Unzen in Japan (1991)
- The first documented total solar eclipse in ancient China (781 BC)
- Birthday of Susan Lindquist, biologist known for her work in studying protein folding (1949)
- Scottish astrophysicist Rosemary Wyse is awarded the Brouwer Award for her work on disk galaxies (2016)**
- Mount Pinatubo erupts in one of the largest volcanic eruptions of the 20th Century (1991)
- René Descartes publishes Discourse on the Method which is widely considered one of the fundamental works in science development (1637)
- Birthday of astronomer Johann Gottfried Galle, the first person to observe the planet Neptune (1812)
- A new skyscraper elevator was invented that uses carbon fibre cables to reach a height of 1,000 m or more in a single journey, eliminating the need for passengers to switch between elevators (2013)
- Researchers at Nottingham University discovered a previously undetected layer of the human cornea, called Dua's layer (2013)
- The Rotherhithe tunnel running under the Thames in London is opened for road traffic. It remains the largest iron subaqueous tunnel in the world (1908)
- Birthday of James Clerk Maxwell, his theory on electromagnetism is still considered one of the most important equations in science (1831)**
- Birthday of Karl Landsteiner, the biologist who discovered and identified the blood groups (1868)
- Jean-Baptiste Denys accomplished the first human blood transfusion (1667)
- Birthday of Barbara McClintock, genetic scientist awarded the 1983 Nobel Prize for Medicine, the first woman to win the prize unshared (1902)
- Polly Arnold, Prof of Chemistry at University of Edinburgh, known for her work in exploratory synthetic chemistry, is appointed an OBE (2017)**
- William Cullen is appointed first lecturer of Chemistry at the University of Glasgow, he would later become one of the most influential figures of the Scottish enlightenment (1747)**
- Eratosthenes, astronomer and mathematician from ancient Greece, measured the Earth's circumference (240 BC)
- China presented the Sunway TaihuLight, the fastest super-computer in the world, capable of a top performance of 125 petaflops (2016)
- SpaceShipOne became the first privately financed space flight to reach the Earth's orbit (2004)
- Birthday of Ada Yonah, Nobel prize winner in Chemistry for pioneering work on the structure of the ribosome (1939)
- Birthday of Alan Turing, mathematician, logician, cryptanalyst and IT specialist, considered the father of modern informatics (1912)
- The first demonstration of a home video recorder is made at the BBC studios (1963)
- Death of Annie Easley, computer scientist known for her work in developing software for NASA Centaur rockets (2011)
- Scientists from the Human Genome Project announce they have successfully completed a reference of the DNA sequence for humans (2000)
- Researchers created stalks of wheat resistant to "stem rust", a fungus that is a constant threat to developing wheat crops, with the use of genetic engineering (2013)
- Birthday of Maria Goeppert-Mayer, Nobel prize winner for her work on the nuclear shell model (1906)
- The Atlantis Space shuttle (U.S.A.) and the Mir space shuttle (Russia), have combined, forming the largest artificial satellite to orbit the Earth at that point (1995)
- Mary Calder, Scottish paleo botanist known for her work on Carboniferous fossil plants and Jurassic conifers receives her PhD from University of Glasgow (1933)**

Turn over and continue the rest of the year of daily discoveries...

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## JULY

- 1 Birth of Amy Johnson, the pioneering English aviator who was the first female pilot to fly solo from Britain to Australia (1930)
- 2 Birth of Harriet Brooks, Canadian physicist famous for her research on nuclear transmutations and radioactivity (1876)
- 3 Birth of Florence Bascom, one of the first women to receive a PhD in Geology and the first women to work at the US Geological Survey (1862)
- 4 NASA's pathfinder space probe lands on the surface of Mars (1997)
- 5 **Dolly the sheep became the first mammal to be cloned from an adult cell at Roslin, Scotland (1996)**
- 6 French scholar Louis Pasteur used the rabies vaccine for the first time, saving a 9 year old boy's life (1885)
- 7 Birth of Nettie Stevens, who discovered the X and Y sex chromosomes (1861)
- 8 Birth of Elizabeth Kubler-Ross, known as the leading authority on the psychology of dying (1926)
- 9 Element 102 Nobelium (No) is discovered (1957)
- 10 Birth of Nikola Tesla, Physicist who is responsible of our modern-day understanding of electric power, alternating current systems, including polyphase power distribution systems and electric motors (1856)
- 11 AeroVelo wins the Igor Sikorsky Award for developing a man-propelled, fully functional helicopter, 33 years after the competition started (2013)
- 12 Birth of George Eastman, inventor of the first camera to use a photographic film roll (1854)
- 13 A team led by naturalist explorer Roy Chapman Andrews made the first discovery of dinosaur eggs in the Gobi desert (1923)
- 14 The New Horizons probe passed Pluto, the most distant space ever explored by humans, and transmitted the first images of it to Earth (2015)
- 15 Birth of Jocelyn Bell Burnell, astronomer from Northern Ireland, she is credited with the first discovery of radio pulsars in 1967 as a postgraduate student (1943)
- 16 The Curiosity Rover reached a milestone in its journey on Mars, after travelling 1 kilometre since landing (2013)
- 17 Birth of Georges-Henri Lemaitre, Belgian priest and physicist who proposed the theory known today as "The Big Bang Theory" (1894)
- 18 The TB vaccine developed by Albert Calmette and Camille Guérin had been used for the first time on a child (1921)
- 19 Birth of Rosalyn Yalow, American medical physicist and winner of the Nobel prize in medicine for her development of radioimmunoassay (1921)
- 20 **Death of Marion Newbigin who served as editor of the Scottish Geography magazine for 32 years from 1902 (1934)**
- 21 **The first ever arrest is made on the evidence of the pattern on the back of a perpetrator's hands in videos – the technique was developed by Scottish anthropologist Prof Dame Sue Black (2014)**
- 22 **The foundation stone of the Tay Railway Bridge near Dundee was laid, which at the time was the longest bridge in the world. In a fierce storm in 1879 it collapsed (1871)**
- 23 Birth of Vera Rubin, the astronomer who discovered that galaxies are primarily composed of dark matter (1928)
- 24 Birth of Alice Ball, American chemist who developed an injectable oil extract that was the most effective treatment for leprosy until the 1940's (1892)
- 25 Birth of Davida Teller, psychologist with significant contribution to the understanding of infant visual development (1938)
- 26 Solar Impulse 2 became the first plane running on solar energy to circle the Earth (2016)
- 27 **Prof Sheila Rowan submits her PhD thesis on Gravitational waves at University of Glasgow, she would later be appointed the Scottish Government's Chief Scientific Advisor (1995)**
- 28 Birth of Physicist Pavel Cherenkov, who discovered the radiation bearing his name (1904)
- 29 Birth of Walter Hunt the engineer who invented the safety pin (1796)
- 30 Birth of Vladimir Zworykin the engineer who invented the cathode ray tube (1889)
- 31 Birth of Stephanie Kwolek, the inventor of Kevlar (1923)

## AUGUST

- 1 Italian Nobel prize winning neurobiologist Rita Levi-Montalcini is appointed senator for life in the Italian parliament (2001)
- 2 A new coating for super glass produced by Harvard University researchers could lead to self-cleaning and scratch free windows and other surfaces (2013)
- 3 Birth of Donald Griffin, the biologist who discovered that bats use high frequency sounds for echolocation (1915)
- 4 The traditional date attributed to the discovery of champagne by Benedictine monk Dom Pérignon (1693)
- 5 Birth of Joan Beauchamp Procter, notable for her work as a herpetologist particularly her study of Komodo dragons (1897)
- 6 **Birth of Alexander Fleming, the Scottish pharmacist best known for his discovery of penicillin in 1928 for which he was later awarded the Nobel Prize for Medicine (1881)**
- 7 Birth of Léon Nicolas Brillouin, the French physicist that made contributions to quantum mechanics, the propagation of radio waves through the atmosphere, semiconductor physics and information theory (1889)
- 8 A new anti-malaria vaccine was proven to have a 100% efficiency rate (2013)
- 9 Birth of Amedeo Avogadro, Physicist who discovered the law that bears his name: the equal volume of gases, at the same temperature and pressure, contain the same number of molecules (1776)
- 10 Felix Hoffman succeeds for the first time in purifying acetylsalicylic acid, which will become the most known medicine for 100 years under the name of aspirin (1897)
- 11 The last ever British Rail passenger train using a steam locomotive runs from Liverpool to Carlisle (1968)
- 12 Dr. Joseph Lister, influenced by Pasteur's germ theory, becomes the first surgeon to use disinfectant during an operation (1865)
- 13 **Death of biochemist Anna Macleod, the first female Professor of Brewing in the world, appointed by Heriott-Watt in 1975 (2008)**
- 14 Birth of Hans Christian Oersted, the physicist who discovered electromagnetism (1777)
- 15 Birth of Gerty Cori, the first female to receive the Nobel prize for medicine for her work on how glucose is broken down in the body (1896)
- 16 Birth of Sarah Stewart who pioneered viral oncology research showing how cancer-causing viruses can spread from animal to animal (1905)
- 17 Venera 7, the first space vehicle to successfully transmit data from the surface of another planet (Venus), was launched (1970)
- 18 **The Tay Road Bridge connecting North-East Fife to Dundee opens. At 1.4 miles long it is one of the longest road bridges in Europe (1966)**
- 19 Louis Daguerre announces the invention of the photographic process named "daguerreotype", the first process which permits the permanent fixation of an image (1839)
- 20 Birth of Joens Jakob Berzelius, the chemist who invented the system of chemical symbols we still use today (1779)
- 21 Birth of Eleanor Davies-Colley, one of the first female surgeons to operate in the UK and founder of the South London Hospital for Women and Children (1874)
- 22 James Cook's expedition lands the eastern coast of Australia (1770)
- 23 The first ever photograph of the Earth from the Moon is taken by the Lunar Orbiter 1 (1966)
- 24 Amelia Earhart had become the first woman to travel the U.S. by plane, flying from Los Angeles to Newark, New Jersey (1932)
- 25 **Victoria Drummond from Errol Aberdeenshire, the first woman marine engineer in Britain, helps save the cargo ship Bonita during a WWII bombing in the N. Atlantic. For this she receives an MBE and Bravery at Sea medal (1940)**
- 26 Birth of Hertha Ayrton, physicist and engineer known for her work on electric arcs and ripples in sand and water (1864)
- 27 Calder Hall nuclear power station becomes the first nuclear power plant in the UK to supply electricity to the National Grid which it would continue to do for 47 years until 2003 (1956)
- 28 Miniature human brains, the size of a pea, were cultivated in a laboratory out of stem cells (2013)
- 29 Physicist Michael Faraday demonstrates the operation of the first electrical transformer (1831)
- 30 The Discovery space shuttle takes off for the first time (1984)
- 31 Birth of Maria Montessori, Italian doctor and educator, who created a special method for educating very small children (called the Montessori Method) (1870)

## SEPTEMBER

- 1 Pioneer 11, an American probe, became the first man-made object to visit planet Saturn, flying over it from 21,000 kilometres (1979)
- 2 The smallest electrical motor was created out of a single molecule, measuring one nanometre in diameter (2011)
- 3 The Martian module of the Viking 2 probe landed on Mars at Utopia Planitia (1976)
- 4 Alan Turing began working at the decrypting station at Bletchley Park (1939)
- 5 The first ever petrol pump is installed at a garage in Indiana (1885)
- 6 Birth of John Dalton, chemist and physicist, known as the father of modern physics (1766)
- 7 Marie Curie isolates the first pure Radium sample (1910)
- 8 **Death of Anna Maria Walker in India. Scottish botanist known for her watercolours of various plants in Sri Lanka (1852)**
- 9 The first case of a computer "bug" is recorded: a moth caught in Harvard University's Mark II computer (1947)
- 10 The largest particle accelerator to date, the Large Hadron Collider was activated in CERN, Geneva (2008)
- 11 The electric telegraph was used for the first time (1853)
- 12 Birth of Irène Joliot-Curie, winner of the Nobel prize for Chemistry for research on artificial radioactivity (1897)
- 13 IBM introduce the first commercial computer to use disk storage (1956)
- 14 Birth of Alexander von Humboldt, German naturalist, archaeologist, explorer and geographer, who contributed to the formation of geography as a scientific discipline (1769)
- 15 Birth of Anna Winlock, astronomer known for her work on calculations and studies of asteroids (1857)
- 16 Birth of Karen Horney, psychoanalyst who pioneered feminist psychology (1885)
- 17 The first version of the Linux operating system was launched (1991)
- 18 Birth of Jean Foucault, the physicist who invented the gyroscope and the pendulum that bears his name (1819)
- 19 The mummified remains of an inhabitant of the Palaeolithic period, nicknamed "Otzi the Ice Man" were discovered inside the Similaun glacier in the Alps, at the Italian-Austrian border (1991)
- 20 Birth of Vera Faddeeva, Russian mathematician noted for work on linear algebra (1906)
- 21 Birth of Charles Nicolle, Nobel Prize winning French doctor and bacteriologist (1866)
- 22 Birth of Michael Faraday, the physicist and chemist who built the first electrical motor, generator and transformer (1791)
- 23 Astronomer Johan G. Galle locates the planet Neptune after only an hour of searching, confirming the orbit calculated by Urbain Jean Joseph Le Verrier (1846)
- 24 Non-human primates have been observed whispering for the first time (2013)
- 25 Birth of Margaret Kennard, neurologist who principally studied the effects of neurological damage on primates (1899)
- 26 The first ever transfusion of human blood takes place at Guy's Hospital, London (1818)
- 27 Rachel Carson the marine biologist, publishes the book Silent Spring which is credited with changing attitudes on indiscriminate use of pesticides (1962)
- 28 Nasa announced that water in a liquid form exists on Mars in the shape of salt water rivers (2015)
- 29 The convention that would set up the European Organization for Nuclear Research, CERN, was signed (1954)
- 30 **Asteroid 18244 Annelia is discovered. Named after Annelia Sargent, an astronomer from Burntisland who was awarded the NASA public service medal for her work in star formation (1973)**

## OCTOBER

- 1 NASA (The National Aeronautics and Space Administration) begins its operations (1958)
- 2 **Birth of William Ramsay, the chemist who discovered Argon, Krypton, Neon and Xenon (1852)**
- 3 Rosalind Franklin, chemist and x-ray crystallographer who helped develop the understanding of the molecular structure of DNA, published her PhD on coal chemistry (1946)
- 4 The inception of the space race was marked by the Sputnik 1 artificial satellite of the U.S.S.R. (1957)
- 5 **Birth of June Almeida, Scottish virologist known for pioneering new methods in virus imaging, identification and diagnoses (1930)**
- 6 Birth of Florence Seibert, American biochemist known for her pioneering work in discovering a reliable test for TB (1897)
- 7 The hidden side of the Moon was photographed for the first time by the Russian space ship Luna 3 (1959)
- 8 NASA announced that New Horizons has detected frozen water and a blue sky on Pluto (2015)
- 9 A new method of microscopy permits researchers to observe structures up to 80 nm inside of a cell (2013)
- 10 Birth of Henry Cavendish, physicist, chemist and discoverer of Hydrogen (1731)
- 11 Ewald Georg von Kleist built the first Leyda battery, a simple form of electric generator, taking the first step in controlling electric current (1745)
- 12 Voskhod 1, the first spacecraft with a multi-person crew and the first flight without space suits is launched by the Soviet Union (1964)
- 13 Greenwich was adopted as the universal meridian point of Earth (1884)
- 14 The first fossil bearing definitive blood traces was discovered in NW Montana. The discovery dates back 46 million years ago, to the Eocene era (2013)
- 15 **Birth of Marie Stopes, originally from Edinburgh, paleo botanist noted for her campaign work in promoting contraception and women's rights (1880)**
- 16 Astronomers announce they had seen and heard a pair of dead stars collide, giving them their first glimpse of the violent process by which most of the gold and silver in the universe was created (2017)
- 17 Birth of Mae Jemison, the physicist and astronaut who studied the effects of zero gravity on board the Endeavour (1956)
- 18 Birth of Christian Schoenlein, the chemist who discovered Ozone (1799)
- 19 Rutgers University researchers had isolated the first effective antibiotic against tuberculosis, streptomycin (1943)
- 20 Birth of Alice Balfour, a Scottish naturalist and an early pioneer of genetics (1906)
- 21 Birth of Alfred Nobel, Swedish chemist, inventor of dynamite and Nobel Prize founder (1833)
- 22 The high-speed train from Paris to Lyon, the first of its kind in Europe, was inaugurated (1981)
- 23 Astronomers had discovered the furthest detectable galaxy to date at 13.1 billion light years from us (2013)
- 24 Birth of Antonie van Leeuwenhoek, the biologist considered to be the founder of microbiology, who discovered red blood cells and bacteria (1632)
- 25 Dr. Vaughn A. Starnes had accomplished the first lung transplant from a living donor (1990)
- 26 Andrew Wiles, British mathematician, had announced the solving of Fermat's Great Theorem (1994)
- 27 Philip Downing invents the PO Box, still in use to this day (1904)
- 28 Christopher Columbus discovers Cuba during his journey to the New World (1492)
- 29 Dr. F. Mason Sones Jr., a cardiologist at The Cleveland Clinic, performed the first coronary angiogram (1958)
- 30 Birth of Nicolae Constantin Paulescu, the doctor who discovered the antidiabetic hormone released by the pancreas, later to be known as insulin (1869)
- 31 The dwarf planet Eris was discovered (2003)

## NOVEMBER

- 1 Alfred Wegener, the meteorologist who formulated the continental drift theory, was born (1880)
- 2 **George Boole, British mathematician and creator of mathematical logic, was born (1815)**
- 3 The Soviet Union launches Sputnik 2, carrying the first animal to reach space, Laika the dog (1957)
- 4 The first subterranean electrified railroad system was inaugurated in London (1890)
- 5 **"An essay on combustion" by Scottish chemist Elizabeth Fulhame is credited with being the first example of catalysis ever written (1794)**
- 6 Birth of William Boog Leishman, the doctor to discover the vaccine against typhoid fever (1865)
- 7 Birth of Marie Curie, the chemist and physicist who discovered Radium and coined the term "radioactivity" (1867)
- 8 Birth of Edmond Halley, English astronomer and mathematician who is best known for correctly predicting when a bright comet would reappear, it was later named after him (1656)
- 9 Birth of Hedy Lamarr, film actress and inventor of a radio guidance system for Allied torpedoes in World War II (1914)
- 10 The first computer virus is developed to test computer security at the University of Southern California (1983)
- 11 Scientists at Columbia University created the smallest FM radio in the world, using nanotechnology (2013)
- 12 MIT invented a new and efficient process for desalinating water, based on shock waves (2015)
- 13 NASA releases a video presenting Mars as it could have been 4 billion years ago, with blue skies and water (2013)
- 14 Birth of Leo Bakeland, American chemist with Belgian origins, inventor of the Bakelite (1863)
- 15 Birth of Sara Baker, physician who pioneered child welfare in the USA and promoted the use of prevention over cure in public health (1873)
- 16 Katherine Johnson, the mathematician whose calculations of orbital mechanics were critical to success of NASA space flights, was awarded the Medal of Freedom by Barack Obama (2015)
- 17 The first miniature kidneys were grown from human stem cells (2013)
- 18 The first phone with push buttons instead of a rotary dial was put into commercial service (1963)
- 19 Birth of Eileen Collins, American Astronaut who was the first woman to pilot and command a US space shuttle (1956)
- 20 Birth of Edwin Hubble, American astronomer after who the space telescope is named (1889)
- 21 The IceCube Neutrino Observatory had detected high energy neutrinos that landed on Earth for the first time, with the place of origin being outside our solar system (2013)
- 22 Bonn University researchers had identified an immunity gene in humans with a Neanderthal origin (2013)
- 23 Dr. Michael E. DeBakey had successfully completed the first coronary bypass (1964)
- 24 Charles Darwin publishes "On the Origin of Species". The anniversary is sometimes known as "Evolution Day" (1859)
- 25 Birth of Julius Robert von Mayer, German doctor and one of the founders of thermodynamics (1814)
- 26 Birth of Elizabeth Blackburn, biologist and winner of the 2009 Nobel Prize in Medicine for her work on enzymes (1948)
- 27 Birth of Anders Celsius, Swedish astronomer, who invented the Celsius temperature scale (1701)
- 28 London newspaper The Times becomes the first printed with steam powered presses, paving the way for a mass distribution of newspapers (1814)
- 29 **The Royal College of Physicians in Edinburgh is granted a royal charter (1681)**
- 30 Birth of Jane Wright, cancer researcher known for her contributions in the development of Chemotherapy (1919)

## DECEMBER

- 1 Birth of Mary Ainsworth, the psychologist who developed the understanding of attachment theory (1913)
- 2 A team of Chinese archaeologists uncovered the 700,000 year old skull of a "Homo erectus pekinesis", also known as "The Man of Peking" (1929)
- 3 South American surgeon Christiaan Barnard performed the first heart transplant (1967)
- 4 The Pioneer 10 ship flew near Jupiter and photographed its atmosphere, along with three of its satellites: Europa, Ganymede and Callisto. It was the first space ship to travel outside of our solar system (1973)
- 5 Researchers used a bacteria, Bacteroides fragilis, to reverse symptoms similar to autism in mice (2013)
- 6 Thomas Edison demonstrates the first recording on a phonograph cylinder (1877)
- 7 Max Planck discovered and formulated the law of black body radiation (1900)
- 8 A new method of extracting Hydrogen out of rocks and water, with the potential of offering a new source of green energy was demonstrated at University of Lyon (2013)
- 9 Birth of Grace Hopper, computer scientist and US Navy rear admiral who developed the programming language COBOL still used today (1906)
- 10 Birth of Ada Lovelace, British mathematician, considered to be the world's first computer programmer (1815)
- 11 Science magazine announces the first complete deciphering of an animal's genome with a nervous system and that digests food, the Caenorhabditis elegans worm (1998)
- 12 Birth of Maria Telkes, who pioneered the application of solar energy to water distillation and home heating (1900)
- 13 Albert Michelson and Francis Pease had measured the diameter of the Betelgeuse star. This was the first measurement of a star apart from the Sun (1920)
- 14 Norwegian explorer Roald Amundsen reaches the South Pole, being the first person to ever do so (1911)
- 15 German astronomer Simon Marius makes the first observation on the Andromeda galaxy, describing it as "similar to the flame of a candle as viewed through a horn" (1612)
- 16 The use of the pattern of the back of the eye as an alternative form of identification to fingerprints is promoted for the first time (1935)
- 17 American mechanics Orville and Wilbur Wright achieve flight for the first time in history with the help of a motorized flying machine (1903)
- 18 Birth of Esther Lederberg, microbiologist and pioneer of bacterial genetics (1922)
- 19 Gaia, the European Space Agency's space telescope (ESA), was launched (2013)
- 20 Birth of Physicist Robert Van de Graaff, inventor of the generator that bears his name (1901)
- 21 HMS Challenger sailed from Portsmouth on the first ever expedition organised for a purely scientific purpose (1872)
- 22 **Final broadcast on BBC Scotland by meteorologist Heather Reid, also known as "Heather the Weather". Reid was also known for being Chair of the Institute of Physics in Scotland between 1999 and 2001 and for her work supporting Glasgow Science Centre (2009)**
- 23 The first transistor is demonstrated in the United States (1947)
- 24 A 28-year old woman from California with chronic leukaemia becomes the first patient to be treated with radioactive isotopes (1936)
- 25 Birth of Sir Isaac Newton, British physicist and mathematician, who invented integral calculus, discovered the three laws of mechanics and the law of gravity (1643)
- 26 **Birth of Mary Somerville. Known for her wide reaching writing in science she was influential in the fields of mathematics and astronomy. She was also the first signature on a petition to the Houses of Parliament on giving the right to women to vote in 1861 (1780)**
- 27 Birth of Johannes Kepler, Astronomer who discovered the three laws on the motion of planets (1571)
- 28 Wilhelm Röntgen announced the discovery of X-rays (1895)
- 29 The first transistor hearing aid went on public sale costing \$300 (£1,200 in today's prices) (1952)
- 30 The 7th row in the Periodic Table of Elements was officially declared complete, after the discovery of elements 113, 115, 117 and 118 (2015)
- 31 Thomas Edison gave the first public demonstration of the incandescent light bulb in Menlo Park, New Jersey, U.S.A. (1879)