



Block calendar/Éphéméride

Accomplishments of Yvonne Choquet-Bruhat: The first woman member of the French Academy of Sciences

Habemus the first woman member of the French Academy of Sciences or *dum vita est, spes est!* Yvonne Choquet-Bruhat is an internationally recognized French mathematician and physicist. She is known for her research at the border of mathematics and physics, ranging from the first mathematical proof of the existence of solutions to Einstein's theory of general relativity to the conversion of electromagnetic waves into gravitational waves (or vice versa) near a black hole. Yvonne Choquet-Bruhat developed new mathematical methods that provided a solid foundation for analyzing several physical theories, including the theory of general relativity, the non-Abelian gauge theory of the standard model, relativistic hydrodynamics, and the theory of supergravity. Yvonne Choquet-Bruhat performed pioneering research on the initial value problem of general relativity. Her exceptional work in this field was highlighted as one of the “milestones of general relativity”.

Yvonne Choquet-Bruhat, a universal scientist, gained her fame through patience, sacrifice, hard work, and only by merit of her own strengths. She is defined by high standards of honor. Yvonne Choquet-Bruhat is a model for women scientists and accomplished women, in general.

Ad honorem, the celebration of the 350th anniversary (1666–2016) of the French Academy of Science provides us with the opportunity to remember Yvonne Choquet-Bruhat. *She is a trailblazer for women in science!*

1. Yvonne Choquet-Bruhat's education: a hymn to life

O life as one ode to joy! In 1923, the great soprano Maria Callas was born, and the great musician George Enescu became the conductor of the Philadelphia Orchestra. W. Röntgen, J. D. van der Waals, J. Dewar and G. Eiffel died in 1923, and several notable scientists were born in the same year, including P. W. Anderson (Nobel Laureate in Physics, 1977), D. C. Gajdusek (Nobel Laureate in Physiology or Medicine, 1976), A. Carlsson (Nobel Laureate in Physiology or Medicine, 2000), W. Kohn (Nobel Laureate in Chemistry, 1998), R. Marcus (Nobel Laureate in Chemistry, 1992), V. L. Fitch (Nobel Laureate in Physics, 1980), J. Kilby (Nobel

Laureate in Physics, 2000), the French physicist C. Bloch, and the great mathematicians H. Cabannes, R. Thom (Fields Medal, 1958), G. Kreisel, R. Bott, H. Chandra, and F. Dyson.

Yvonne Suzanne Marie Louise Choquet-Bruhat was born on 29 December 1923, in Lille. She was born into a family of French intellectuals; she was the daughter of Berthe Hubert Bruhat, a philosophy professor, and Georges Bruhat, a prominent physics professor at the Faculty of Science in Paris. Choquet-Bruhat's brother was the mathematician François Bruhat (born in 1929). Her father George was awarded his doctorate in physics in 1914. He was appointed to the University of Lille in 1919 and then promoted to professor of physics in 1921. Her mother, Berthe Hubert Bruhat, was ranked first in the ‘concours de l'agrégation’ in arts in 1917. In 1927, her father was appointed to the Faculty of Science in Paris, and the girl moved to Paris with her family. Georges Bruhat was appointed to deputy director of the ‘École normale supérieure’ in 1935 and then to the physics chair at the school in 1941.

Labor is the source of virtue. – Herder

Yvonne Choquet-Bruhat attended secondary school in Paris and obtained her bachelor's degree in 1941. She won the second prize in physics in open competition and used her prize to attend the ‘École normale supérieure’ in Sèvres (for girls only), just outside Paris. This women's university was the partner institution of the ‘École normale supérieure de Paris’. She graduated from the ‘École normale supérieure de jeunes filles’ in 1946 and performed research with André Lichnerowicz (who later became her doctoral thesis supervisor). She studied with great teachers, including Georges Darmon and Jean Leray, and began to teach at the ‘École normale supérieure’ in 1946, after she achieved first place on the mathematics aggregation examination. From 1946 to 1949, Yvonne Choquet-Bruhat was an assistant at the ‘École normale supérieure’. From 1949 to 1951, she was a research assistant and then a research associate at the ‘Centre national de la recherche scientifique’ (CNRS). She was awarded

her doctorate in 1951 for her thesis *Théorème d'existence pour certains systèmes d'équations aux dérivées partielles non linéaires*. Yvonne Choquet-Bruhat then completed a post-doctoral fellowship at the Institute for Advanced Study at Princeton between 1951 and 1952. In 1953, she became a lecturer at the Faculty of Science in Marseilles. Yvonne Choquet-Bruhat soon returned to the Institute for Advanced Study at Princeton during the 1955–1956 academic year. Between 1958 and 1959, she served as a professor at the 'École des sciences de Reims'. In 1960, she was appointed to the analytical mechanics and celestial mechanics chair of the Faculty of Science in Paris. In 1971, the Faculty of Science was dismantled, and Yvonne Choquet-Bruhat moved to the Pierre-and-Marie-Curie University, where she remained until her retirement in 1992. She has been professor emeritus since then.

1.1. *Alta alatis patent*

Yvonne Choquet-Bruhat has received many honors for her contributions to mathematical physics. In 1958, she was awarded the Silver Medal by the CNRS. She was awarded the Henri-de-Parville Prize by the Academy of Sciences in 1963. Yvonne Choquet-Bruhat was elected a corresponding member of the Academy of Sciences in 1978, and in 1979 she became *the first full woman member – ad vitam æternam!* From 1980 to 1983, she was president of the International Committee of General Relativity and Gravitation. In 1985, she was elected to the American Academy of Arts and Sciences. The National Order of the Legion of Honour recognized Yvonne Choquet-Bruhat for her accomplishments by appointing her to Commander in 1997 and subsequently elevating her to Grand Officer in 2008 and Grand Cross in 2015. In 2003, she and James York of Cornell University shared the Dannie Heineman Prize for Mathematical Physics. She is also a member of the Moscow Mathematical Society. In 2006, Yvonne Choquet-Bruhat delivered the Emmy Noether Lecture on the topic of "Mathematical problems in general relativity" at the International Congress of Mathematicians in Madrid (she also gave the Emmy Noether Lecture in 1986).

1.2. *Amor mundum fecit*

Yvonne Choquet-Bruhat had one daughter, Michelle, with her first husband, Léonce Fourès. She later married Gustave Choquet and had two children, Geneviève and Daniel, with him.

2. Research accomplishments

It is the theory that decides what we can observe. – Einstein

Yvonne Choquet-Bruhat's research interests in the field of mathematical physics include partial differential equations on manifolds and their application to fundamental physics problems in the areas of general relativity, relativistic fluids, magneto fluids and plasmas, supergravity, and gauge theories. Yvonne Choquet-Bruhat essentially invented the field of mathematical general relativity. The

study of gravity has fascinated the *scientist* and the philosophers such as Liiceanu, who wrote about gravitational freedom. Although several explicit solutions of the Einstein gravitational field equations were found before Yvonne Choquet-Bruhat's work, it was only after her proof that Einstein's equations were well-posed in 1952 that general relativity became a topic of serious mathematical interest. In mathematical general relativity, Yvonne Choquet-Bruhat made groundbreaking advances in solving the Einstein constraint equations and analyzing the evolution of initial data into space-time solutions of the Einstein field equations. Key aspects of her work include developing new mathematical tools and novel approaches for applying them to problems of interest. In addition, she introduced new formulations of Einstein's theory of gravitation that recently spurred great progress in numerical relativity, including the calculation of the gravitational waves emitted when two black holes collapse and merge together. These results are of great importance for giant interferometric gravitational wave detectors, such as Virgo or LIGO.

The man who moves a mountain begins by carrying away small stones. – Confucius

In a seminal work published as her 'thèse d'État' when she was 28 years old, Yvonne Choquet-Bruhat showed that if the initial state of a gravitational field is represented by certain geometric fields that satisfy the constraint equations, then a space-time solution of the complete system of Einstein's equations exists. This solution is compatible with the initial state data set and describes the past and future of the gravitational field. Yvonne Choquet-Bruhat used fundamental mathematical results to provide a solid foundation for solving classical physics equations, most importantly those pertaining to general relativity and other theories of gravity, supergravity, and non-Abelian gauge theories of the standard model.

Yvonne Choquet-Bruhat is widely acclaimed both in France and worldwide as an author of scientific papers. *In concreto*, she has published well over 200 research papers and three major research books. She has presented at several conferences and invited lectures at both national and international congresses.

Her career has consisted of many remarkable achievements. She is an inspiring teacher and a remarkable woman of science with an extraordinary gift for logical reflection. All who worked with Yvonne Choquet-Bruhat have been attracted by his genial and kind personality, and none failed to be impressed by her intellect and by the high, almost exacting, standards he set for scientific work.

In his chosen field of research, Yvonne Choquet-Bruhat is preminent and has established a tradition that will not be easily upheld. Through her work, she is assured of a worthy place in the history of the science to which he was devoted. Yvonne Choquet-Bruhat has proven that all boundaries can be broken by the desire to succeed.

I love those who yearn for the impossible. – Goethe

Yvonne Choquet-Bruhat, the first woman elected to the French Academy of Sciences, is the symbol of women in science.

References

- [1] R.A. Jacquesy, O. Eisenstein, *Actualité Chimique* 385 (2014) 1.
 [2] Y. Choquet-Bruhat, C. R. Acad. Sci. Paris, Ser. I 349 (2011) 915.
 [3] Y. Choquet-Bruhat, *General Relativity and the Einstein Equations*, Oxford University Press, 2009.
 [4] Y. Choquet-Bruhat, D. Christodoulou, *Acta Math.* 146 (1981) 129.
 [5] Y. Choquet-Bruhat, P.T. Chrusciel, J.M. Martín-García, C. R. Acad. Sci. Paris, Ser. I 347 (2009) 971.
 [6] Y. Choquet-Bruhat, C. R. Acad. Sci. Paris, Ser. I 256 (1963) 3971.
 [7] Y. Choquet-Bruhat, J. Isenberg, *J. Geom. Phys.* 56 (2006) 1199.
 [8] Y. Choquet-Bruhat, V. Moncrief, Existence Theorem for Solutions of Einstein Equations with 1 Parameter Spacelike Isometry Group, in: H. Brezis, I.E. Segal (Eds.), *Proc. Sympos. Pure Math.*, vol. 59, 1996, p. 67.
 [9] Y. Choquet-Bruhat, J. Isenberg, V. Moncrief, *Il Nuovo Cimento B* 119 (2005) 7.
 [10] Y. Choquet-Bruhat, J.E. Marsden, *Commun. Math. Phys.* 51 (1976) 283.
 [11] Y. Choquet-Bruhat, *Cauchy Problem*, in: L. Witten (Ed.), *Gravitation: An Introduction to Current Research*, Wiley, Chichester, 1962.
 [12] Y. Choquet-Bruhat, C. R. Acad. Sci. Paris, Ser. A 280 (1975) 169.
 [13] Y. Choquet-Bruhat, S. Deser, *Ann. Phys.* 81 (1973) 165.
 [14] Y. Choquet-Bruhat, J.W. York, *J. Juliusz Schauder Center* 18 (2001) 321.

Ioana Fecheté

Institut de chimie et procedes pour l'energie, l'environnement, et la sante (ICPEES), UMR 7515 CNRS, Universite de Strasbourg, 25, rue Becquerel, 67087 Strasbourg cedex 2, France

E-mail addresses: ifechete@unistra.fr, i_fechete@yahoo.com (I. Fecheté)

Available online 13 October 2016

December

DECEMBER	MEMBERS OF THE FRENCH ACADEMY OF SCIENCES
1	Gillet, Jean Charles (1 December 1637 – 19 March 1713), French intellectual. Salvador y Riera, Juan (1 December 1683 – 27 February 1726), Spanish botanist. Klaproth, Martin Heinrich (1 December 1743 – 1 January 1817), German chemist. Mudge, William (1 December 1762 – 17 April 1820), English artillery officer. Imbeaux, Charles Édouard Augustin (1 December 1861 – 25 June 1953), French engineer and medical doctor. Brézin, Édouard (1 December 1938), French physicist. Flajolet, Philippe (1 December 1948 – 22 March 2011), French computer scientist
2	Carcani, Nicola Maria (2 December 1716 – 27 July 1764), Italian intellectual. Le Blond, Jean-Baptiste (2 December 1747 – 14 August 1815), French medical doctor. Smith, James Edward (2 December 1759 – 17 March 1828), British botanist. d'Alcantara, Pedro II (2 December 1825 – 5 December 1891), the last ruler of the Empire of Brazil. Ollier, Louis Xavier Édouard Léopold (2 December 1830 – 2 November 1900), French surgeon. Hautefeuille, Paul (2 December 1836 – 8 December 1902), French chemist. Maquenne, Léon Gervais Marie (2 December 1853 – 19 January 1925), French chemist.
3	Crova, André Prosper Paul (3 December 1833 – 21 June 1907), French chemist. Millardet, Pierre Marie Alexis (3 December 1838 – 14 December 1902), French botanist. Siegbahn, Karl Manne Georg (3 December 1886 – 26 September 1978), Swedish physicist and Nobel laureate (1924).
4	Seignette, Pierre (4 December 1660 – 11 March 1709), French medical doctor. Pérez, Jean (4 December 1833 – 11 September 1914), French zoologist. Lannelongue, Odilon Marc (4 December 1840 – 22 December 1911), French surgeon. Pardé, Maurice Édmond (4 December 1893 – 14 June 1973), French scientist. Sajos, Lucien (4 December 1935 – 4 December 2002), French engineer. Fayet, Pierre (4 December 1949), French physicist.
5	Painlevé, Paul (5 December 1863 – 29 October 1933), French mathematician. Grégoire, Victor Marie Joseph Théodore (5 December 1870 – 12 December 1938), Belgian botanist.
6	Malesherbes, Chrétien-Guillaume de Lamoignon de (6 December 1721 – 22 April 1794), French botanist. Joubert, Philippe Laurent de (6 December 1729 – 1792), French intellectual. Lamanon, Jean-Honoré Robert de Paul de (6 December 1752 – 11 December 1787), French botanist. Gay-Lussac, Louis Joseph (6 December 1778 – 9 May 1850), French chemist and physicist. Vaillant, Jean Baptiste Philibert (6 December 1790 – 4 June 1872), Marshal of France. Magnéli, Arne Per (6 December 1914 – 25 July 1996), Swedish chemist.
7	Thevenard, Antoine-Jean-Marie [comte] (7 December 1733 – 9 February 1815), French politician. Silvestre, Augustin-François de (7 December 1762 – 4 August 1851), French inventor. Schwann, Theodor (7 December 1810 – 21 January 1882), German physiologist. Kronecker, Léopold (7 December 1823 – 29 December 1891), German mathematician. Cremona, Luigi (7 December 1830 – 10 June 1903), Italian mathematician. Renaut, Joseph Louis (7 December 1844 – 26 December 1917), French medical doctor. Debré, Robert Anselme (7 December 1882 – 29 April 1978), French medical doctor.
8	Romme, Nicolas Charles (8 December 1745 – 14 March 1805), French intellectual. Hansen, Peter Andreas (8 December 1795 – 28 March 1874), Danish Astronomer. Agardh, Jakob Georg (8 December 1813 – 17 January 1901), Swedish botanist. Bernstein, Julius (8 December 1839 – 6 February 1917), German physiologist. Hadamard, Jacques Salomon (8 December 1865 – 17 October 1963), French mathematician. Jaumotte, André (8 December 1919), Belgian scientist. Dalibard, Jean (8 December 1958), French physicist.
9	Rivinus alias Bachmann, Augustus Quirinus (9 December 1652 – 30 December 1723), German physicist. Du Verney, Pierre (9 December 1653 – August 1728), French surgeon.

Berthollet, Claude Louis (9 December 1748 – 6 November 1822), French chemist.
Maindron, Charles Ernest (9 December 1838 – 6 September 1907), French historian.
Amatore, Christian (9 December 1951), French chemist.

-
- 10** **Varenne, Claude** (10 December 1722 – 1788), French politician
Dugès, Antoine Louis (10 December 1797 – 2 May 1838), French obstetrician and naturalist.
Timoshenko, Stephen (10 December 1878 – 29 May 1972), Russian American engineer.
Jacobi, Carl Gustav Jacob (10 December 1804 – 18 February 1851), German mathematician.
Maréchal, André (10 December 1916 – 14 October 2007), French physicist.
Frisch, Uriel (10 December 1940), French physicist.
-
- 11** **Barthez, Paul-Joseph** (11 December 1734 – 15 October 1806), French medical doctor.
Brewster, David (11 December 1781 – 10 February 1868), Scottish physicist.
Abich, Otto Wilhelm Hermann (11 December 1806 – 1 July 1886), German mineralogist.
Koch, Robert (11 December 1843 – 27 May 1910), German medical doctor and Nobel laureate (1905).
Kahane, Jean-Pierre (11 December 1926), French mathematician.
-
- 12** **Bianchi, Giovanni Battista** (12 December 1681 – 20 January 1761), Italian anatomist.
Rayet, Georges Antoine Pons (12 December 1839 – 14 June 1906), French astronomer.
Paterno, Emanuele di Sessa (12 December 1847 – 18 January 1935), Italian chemist.
Mesnili, Félix Étienne Pierre (12 December 1868 – 15 February 1938), French biologist.
Baulieu, Étienne-Émile (12 December 1926), French biochemist.
Jeannerod, Marc (12 December 1935 – 1 July 2011), French medical doctor.
-
- 13** **Bianchini, Francesco** (13 December 1662 – 2 March 1729), Italian astronomer.
Machault d'Arnouville, Jean-Baptiste de (13 December 1701 – 12 July 1794), French politician.
Lexell, Anders Johan (13 December 1740 – 30 November 1784), Finnish-Swedish astronomer.
Polya, George (13 December 1887 – 7 September 1985), Hungarian mathematician.
-
- 14** **Freycinet, Charles Louis de Saulses de** (14 December 1828 – 14 May 1923), French engineer and politician.
-
- 15** **Reneaume, Michel-Louys** (15 December 1675 – 27 March 1739), French botanist and medical doctor.
Montigny, Étienne Mignot de (15 December 1714 – 6 May 1782), French engineer.
Colladon, Jean Daniel (15 December 1802 – 30 June 1893), Swiss physicist.
Becquerel, Antoine Henri (15 December 1852 – 24 August 1908), French physicist and Nobel laureate (1903).
Letort, Maurice (15 December 1907 – 1 August 1972), French chemist.
Abragam, Anatole (15 December 1914 – 8 June 2011), French physicist.
Dyson, Freeman J. (15 December 1923), French physicist and mathematician.
Amiel, Claude (15 December 1930 – 7 August 1996), French intellectual.
Kagan, Henri (15 December 1930), French chemist.
-
- 16** **Lémery, Jacques** (16 December 1678 – 1721), French chemist.
Geoffroy Saint-Hilaire, Isidore (16 December 1805 – 10 November 1861), French zoologist.
Oudemans, Jean Abraham Chrétien (16 December 1827 – 14 December 1906), Dutch astronomer.
Licent, Émile (16 December 1876 – 1952), French Jesuit.
Lemoigne, Maurice Auguste (16 December 1883 – 9 May 1967), French agronomer.
Morquer, René (16 December 1893 – 12 February 1982), French intellectual.
Riascos, Rodolfo Llinás (16 December 1934), Colombian American neuroscientist.
Vainchenker, William (16 December 1947), French medical doctor.
-
- 17** **Jars, Gabriel** (17 December 1729 – 2 October 1808), French engineer.
Davy, Humphry (17 December 1778 – 28 May 1829), Cornish chemist and inventor.
Purkyně, Jan Evangelista (17 December 1787 – 28 July 1869), Czech anatomist and physiologist.
Jobert, Antoine-Joseph (17 December 1799 – 19 April 1867), French surgeon.
Jobert de Lamballe, Antoine Joseph (17 December 1802 – 19 April 1867), French anatomist.
Cotteau, Gustave Honoré (17 December 1818 – 10 August 1894), French naturalist.
Smith, John Lawrence (17 December 1818 – 12 October 1883), American chemist.
Agassiz, Alexandre (17 December 1835 – 27 March 1910), American scientist.
Lie, Marius Sophus (17 December 1842 – 18 February 1899), Norwegian mathematician.
Farlow, William Gilson (17 December 1844 – 3 June 1919), American botanist.
Roux, Pierre Paul Émile (17 December 1853 – 3 November 1933), French medical doctor.
Read, Herbert Harold (17 December 1889 – 29 March 1970), British geologist.
Kramers, Hendrik Anthony (17 December 1894 – 24 April 1952), Dutch physicist.
Prochiantz, Alain (17 December 1948), French neurobiologist.
-
- 18** **Blondin, Pierre** (18 December 1682 – 15 April 1713), French intellectual.
Giroud, Alexandre (18 December 1761 – 19 September 1797), French engineer.
Thomson, Joseph John (18 December 1856 – 30 August 1940), French physicist.
Davydoff, Constantin (18 December 1877 – 21 June 1960), Russian-French botanist.
Décamps, Henri (18 December 1935), French biologist.
-
- 19** **Nollet, Jean-Antoine** (19 December 1700 – 24 April 1770), French physicist.
Parry, Edward William (19 December 1790 – 8 July 1855), English rear-admiral and Arctic explorer.
Van Beneden, Pierre Joseph (19 December 1809 – 8 January 1894), Belgian zoologist.
Perrotin, Henri Joseph Anastase (19 December 1845 – 29 February 1904), French astronomer.
Michelson, Albert Abraham (19 December 1852 – 9 May 1931), American physicist and Nobel laureate (1907).
Brillouin, Louis Marcel (19 December 1854 – 16 June 1948), French mathematician and physicist.
Lebeau, Paul Marie Alfred (19 December 1868 – 18 November 1959), French chemist.
Hermann, Henri Xavier (19 December 1892 – 24 May 1972), French medical doctor.
Snell, George (19 December 1903 – 6 June 1996), American geneticist and Nobel laureate (1980).
-

- 20** **Graham, Thomas** (20 December 1805 – 16 September 1869), Scottish chemist.
La Gournerie, Jules Antoine René Maillard de (20 December 1814 – 25 June 1883), French engineer.
Grandidier, Alfred (20 December 1836 – 13 September 1921), French explorer.
Adams, Walter Sydney (20 December 1876 – 11 May 1956), American astronomer.
Saint-Sernin, Bertrand (20 December 1931), French philosopher.
-
- 21** **Moll, le baron Karl Ehrenbert von** (21 December 1760 – 31 January 1838), Austrian naturalist.
Rougier de La Bergerie, le baron Jean-Baptiste (21 December 1762 – 13 September 1836), French agronomer
Brown, Robert (21 December 1773 – 10 June 1858), Scottish botanist.
Fabre, Jean Henri (21 December 1823 – 11 October 1915), French naturalist.
Burdon-Sanderson, John (21 December 1828 – 23 November 1905), English physiologist.
Jungfleisch, Émile Clément (21 December 1839 – 24 April 1916), French chemist.
Picard, Alfred Maurice (21 December 1844 – 8 March 1913), French engineer.
Séjourné, Aignan Paul Marie Joseph (21 December 1851 – 14 January 1939), French engineer.
Taylor, William Randolph (21 December 1895 – 11 November 1990), American botanist.
Baillou, Jean (21 December 1905 – 22 June 1990), French politician.
Bénard, Jacques Marie Charles (21 December 1912 – 4 October 1987), French chemist.
Laporte, Yves (21 December 1920 – 15 May 2012), French medical doctor.
Nivat, Maurice Paul (21 December 1937), French scientist.
-
- 22** **Maheu, Pierre** (22 December 1682 – 21 January 1754), French intellectual.
Pfaff, Johann Friedrich (22 December 1765 – 20 April 1825), German mathematician.
Breguet, Louis François Clément (22 December 1804 – 27 October 1883), French physicist.
Laugier, Paul Auguste Ernest (22 December 1812 – 5 April 1872), French astronomer.
Bonnet, Pierre-Ossian (22 December 1819 – 22 June 1892), French mathematician.
Brioschi, Francesco (22 December 1824 – 14 December 1897), Italian mathematician.
Girard, Alfred Claude Aimé (22 December 1830 – 12 April 1898), French chemist.
Vincent, Jean Hyacinthe (22 December 1862 – 23 November 1950), French medical doctor.
Auclair, Noël Marie Joseph (22 December 1869 – 12 December 1936), French engineer.
Faugeras, Olivier (22 December 1949), French mathematician.
-
- 23** **Nicole, François** (23 December 1683 – 10 January 1758), French mathematician.
Jussieu, Adrien de (23 December 1797 – 29 June 1853), French botanist.
Tchihatchef, Pierre Alexandrovitch de (23 December 1808 – 13 October 1890), Russian naturalist.
Schützenberger, Paul (23 December 1829 – 26 June 1897), French chemist.
Depage, Antoine (23 December 1862 – 10 June 1925), Belgian surgeon.
Jerne, Niels Kaj (23 December 1911 – 7 October 1994), Danish immunologist.
-
- 24** **Kirch, Christfried** (24 December 1694 – 9 March 1740), German astronomer.
Bürg, Johann Tobias (24 December 1766 – 25 November 1834), Austrian astronomer.
Haldat du Lys, Charles Nicolas Alexandre de (24 December 1770 – 26 November 1852), French physicist and medical doctor.
Bernard, Honoré Gabriel (24 December 1789 – 10 August 1866), French engineer.
Joule, James Prescott (24 December 1818 – 11 October 1889), English physicist.
Hermite, Charles (24 December 1822 – 14 January 1901), French mathematician.
Souèges, Étienne Charles René (24 December 1876 – 4 September 1967), French botanist.
Villat, Henri René-Pierre (24 December 1879 – 19 March 1972), French mathematician.
Donatien, André Louis (24 December 1889 – 10 August 1954), French Veterinarian.
Lacombe, Henri (24 December 1913 – 4 June 2000), French engineer.
-
- 25** **Newton, Isaac** (25 December 1642 – 20 March 1727), British physicist.
Pitcairne, alias Pitcairn, Archibald (25 December 1652 – 20 October 1713), Scottish physicist.
Montaudouin alias de La Touche-Montaudouin, Jean-Gabriel (25 December 1722 – 12 March 1781), French intellectual.
Lallemand, Étienne Alexandre (25 December 1816 – 16 March 1886), French scientist.
Guyou, Émile (25 December 1843 – 24 August 1915), French military.
Vallier, Frédéric Marie Emmanuel (25 December 1849 – 29 March 1921), French engineer.
Denigès, Georges Noël Fort (25 December 1859 – 20 February 1951); French medical doctor and scientist.
Fourmarier, Paul Frédéric Joseph (25 December 1877 – 20 January 1970), Belgian geologist.
Berry, Gérard (25 December 1948), French computer scientist.
-
- 26** **Bouillet, Jean Henri Nicolas** (26 December 1729 – 22 January 1790), French physicist.
Nicolas, Pierre François (26 December 1743 – 18 April 1816), military apothecary.
Lacépède, Bernard-Germain-Étienne de La Ville-sur-Ilлон de (26 December 1756 – 6 October 1825), French zoologist and politician.
Combes, Charles Pierre Mathieu (26 December 1801 – 11 January 1872), French engineer and scientist.
Henry, Louis (26 December 1834 – 9 March 1913), Belgian chemist.
Treub, Melchior (26 December 1851 – 3 October 1910), Dutch botanist.
Vandel, Albert Pól Marie (26 December 1894 – 11 October 1980), French zoologist.
-
- 27** **Bernoulli, Jacques** (27 December 1654 – 16 August 1705), Swiss mathematician and physicist.
Ximenès, Leonard (27 December 1716 – 3 May 1786), Italian mathematician and scientist.
Pasteur, Louis (27 December 1822 – 28 September 1895), French chemist.
Andrade, Edward Neville da Costa (27 December 1887 – 6 June 1971), English physicist.
Egly, Jean-Marc (27 December 1945), French scientist.
-
- 28** **Lacaille, Nicolas-Louis de** (28 December 1713 – 21 March 1762), French astronomer.
Cloquet, Jules Germain (28 December 1790 – 24 February 1883), French physicist and surgeon.
Lawes, John Bennet (28 December 1814 – 31 August 1900), English entrepreneur and agricultural scientist.
Geikie, Archibald (28 December 1835 – 10 November 1924), Scottish geologist and writer.
Torres Quevedo, Leonardo (28 December 1852 – 18 December 1936), Spanish engineer and mathematician.
Guichard, Claude (28 December 1861 – 6 May 1924), French mathematician.

Rakoto Ratsimamanga, Albert (28 December 1907 – 16 September 2001), Madagascar scientist.
Loubatières, Auguste Louis (28 December 1912 – 8 January 1977), French medical doctor.
Castaing, Raimond (28 December 1921 – 10 April 1998), French physicist.

29

Wrangell, Ferdinand (29 December 1796 – 3 June 1870), German explorer.
Ludwig, Carl Friedrich Wilhelm (29 December 1816 – 24 April 1895), German physiologist.
Deprez, Marcel (29 December 1843 – 13 October 1918), French electrical engineer.
Remlinger, Paul Ambroise (29 December 1871 – 9 March 1964), French medical doctor.
Fournier, Paul Victor (29 December 1877 – 20 May 1964), French botanist.
Pélissier, Léon Alexandre Melchior (29 December 1882 – 28 August 1979), French engineer.
Brelot, Marcel Émile (29 December 1903 – 3 August 1987), French mathematician.
Cauderon, André (29 December 1922 – 9 June 2009), French agronomer.
Choquet-Bruhat, Yvonne (29 December 1923), French mathematician.
Ghys, Étienne (29 December 1954), French mathematician.

30

Treytorrens, alias Traytorens, François Frédéric de (30 December 1687 – 9 July 1737), French intellectual.
Bertier, Étienne Joseph (30 December 1702 – 16 November 1783), French physicist.
Dessaignes, Victor (30 December 1800 – 4 January 1885), French chemist.
Lapparent, Albert Auguste Cochon de (30 December 1839 – 4 May 1908), French geologist.
Capron, André (30 December 1930), French medical doctor.

31

Boerhaave, Hermann (31 December 1668 – 21 September 1738), Dutch chemist and botanist.
Chaulnes, Michel-Ferdinand d'Albert d'Ailly (31 December 1714 – 23 September 1769), French astronomer and physicist.
Hermann, Jean (31 December 1738 – 4 October 1800), French medical doctor.
Eytelwein, Johann Albert (31 December 1764 – 18 August 1848), German engineer.
Becke, Friedrich Johann Karl (31 December 1855 – 18 June 1931), Austrian mineralogist.
Chevenard, Pierre Antoine Jean Sylvestre (31 December 1888 – 15 August 1960), French engineer and scientist.
Siegel, Carl Ludwig (31 December 1896 – 4 April 1981), German mathematician.
Brun, Antoine Edmond Sylvestre (31 December 1898 – 4 November 1979), French physicist.
Szentagothai, Janos (31 January 1912 – 9 September 1994), Hungarian anatomist.
