## The Father of the Big Bang? A Catholic Priest

The popular narrative is that the religious, particularly Christians, are knuckle-dragging Neanderthals attempting to prevent scientific advancements. It couldn't be further from the truth.

Usually, Galileo (imprisoned) and Giordano Bruno (burned at the stake) are offered as proof, though both came from roughly the same time period, about four-hundred years ago. While those activities of the Church were certainly not good by our modern standards, they are not overwhelming proof of a 2,000 year-old religion with billions of followers being "antiscience".

As evidence, let us turn to one humorous example of a Christian not being "anti-science" here in the 20th century. It's a particularly good example since Christians are often accused of disregarding evolution and the Big Bang.

It was actually a Catholic priest by the name of George Lemaitre who is acknowledged as the "Father of the Big Bang." Yes, a priest and not an atheist is the father of the Big Bang. Here's a quick video:

Consider this <u>description</u> provided by the American Museum of Natural History:

According to the Big Bang theory, the expansion of the observable universe began with the explosion of a single particle at a definite point in time. This startling idea first appeared in scientific form in 1931, in a paper by Georges Lemtre, a Belgian cosmologist and Catholic priest. The theory, accepted by nearly all astronomers today, was a radical departure from scientific orthodoxy in the 1930s. Many astronomers at the time were still uncomfortable with the idea

that the universe is expanding. That the entire observable universe of galaxies began with a bang seemed preposterous.

In 1927, Lemaître published in Belgium a virtually unnoticed paper that provided a compelling solution to the equations of General Relativity for the case of an expanding universe. His solution had, in fact, already been derived without his knowledge by the Russian Alexander Friedmann in 1922. But Friedmann was principally interested in the mathematics of a range of idealized solutions (including expanding and contracting universes) and did not pursue the possibility that one of them might actually describe the physical universe. In contrast, Lemaître attacked the problem of cosmology from a thoroughly physical point of view, and realized that his solution predicted the expansion of the real universe of galaxies that observations were only then beginning to suggest.

By 1930, other cosmologists, including Eddington, Willem de Sitter, and Einstein, had concluded that the static (nonevolving) models of the universe they had worked on for many years were unsatisfactory. Furthermore, Edwin Hubble, using the world's largest telescope at Mt. Wilson in California, had shown that the distant galaxies all appeared to be receding from us at speeds proportional to their distances. It was at this point that Lematre drew Eddington's attention to his earlier work, in which he had derived and explained the relation between the distance and the recession velocity of galaxies. Eddington at once called the attention of other cosmologists to Lematre's 1927 paper and arranged for the publication of an English translation. Together with Hubble's observations, Lematre's paper convinced the majority of astronomers that the universe was indeed expanding, and this revolutionized the study of cosmology.

A year later, Lemaître explored the logical consequences of an expanding universe and boldly proposed that it must have

originated at a finite point in time. If the universe is expanding, he reasoned, it was smaller in the past, and extrapolation back in time should lead to an epoch when all the matter in the universe was packed together in an extremely dense state. Appealing to the new quantum theory of matter, Lemaître argued that the physical universe was initially a single particle , the "primeval atom" as he called it, which disintegrated in an explosion, giving rise to space and time and the expansion of the universe that continues to this day. This idea marked the birth of what we now know as Big Bang cosmology.

It is tempting to think that Lematre's deeply-held religious beliefs might have led him to the notion of a beginning of time. After all, the Judeo-Christian tradition had propagated a similar idea for millennia. Yet Lematre clearly insisted that there was neither a connection nor a conflict between his religion and his science. Rather he kept them entirely separate, treating them as different, parallel interpretations of the world, both of which he believed with personal conviction. Indeed, when Pope Pius XII referred to the new theory of the origin of the universe as a scientific validation of the Catholic faith, Lematre was rather alarmed. Delicately, for that was his way, he tried to separate the two:

"As far as I can see, such a theory remains entirely outside any metaphysical or religious question. It leaves the materialist free to deny any transcendental Being! For the believer, it removes any attempt at familiarity with God! It is consonant with Isaiah speaking of the hidden God, hidden even in the beginning of the universe."

Lest you think that Lematre was a one-off scientist-priest, Wikipedia provides a very long list of "cleric-scientists" <a href="here">here</a>. The list is reproduced below simply to give you an idea of how many religious individuals have played a role in scientific advancements over many, many centuries.

Keep in mind, too, that the list does not include any nonpriests who were both scientists and religious.

Jos© de Acosta (1539,1600) " Jesuit missionary and naturalist who wrote one of the very first detailed and realistic descriptions of the new world

François d'Aguilon (1567,1617) " Belgian Jesuit mathematician, physicist, and architect.

Lorenzo Albacete (1941,2014) Priest physicist and theologian

Albert of Saxony (philosopher) (c. 1320,1390), German bishop known for his contributions to logic and physics; with Buridan he helped develop the theory that was a precursor to the modern theory of inertia[6]

Albertus Magnus (c. 1206,1280), Dominican friar and Bishop of Regensberg who has been described as ""one of the most famous precursors of modern science in the High Middle Ages.""[7] Patron saint of natural sciences; Works in physics, logic, metaphysics, biology, and psychology.

Giulio Alenio (1582-1649) — Jesuit theologian, astronomer and mathematician. He was sent to the Far East as a missionary and adopted a Chinese name and customs. He wrote 25 books including a cosmography and a Life of Jesus in Chinese.

## Α

José MarÃa Algué (1856,1930), Priest and meteorologist who invented the barocyclonometer

 $Jos\tilde{A}\odot$  Antonio de Alzate y RamÃrez (1737,1799), Priest, scientist, historian, cartographer, and meteorologist who wrote more than thirty treatises on a variety of scientific subjects

Francesco Castracane degli Antelminelli (1817,1899), Priest and botanist who was one of the first to introduce

microphotography into the study of biology

Giovanni Antonelli (1818,1872), Priest and director of the Ximenian Observatory of Florence who also collaborated on the design of a prototype of the internal combustion engine

Nicol $\tilde{A}^2$  Arrighetti (1709,1767), Jesuit who wrote treatises on light, heat, and electricity.

Mariano Artigas (1938,2006), Spanish physicist, philosopher and theologian who received the Templeton Foundation Prize in 1995

Giuseppe Asclepi (1706,1776), Jesuit astronomer and physician who served as director of the Collegio Romano observatory; The lunar crater Asclepi is named after him.

В

Roger Bacon (c. 1214,1294), Franciscan friar who made significant contributions to mathematics and optics and has been described as a forerunner of modern scientific method.

Bernardino Baldi (1533,1617), Abbot, mathematician, and writer

Eugenio Barsanti (1821,1864), Piarist who is the possible inventor of the internal combustion engine

Bartholomeus Amicus (1562,1649), Jesuit wrote on philosophy, mathematics, astronomy, and the concept of vacuum and its relationship with God.

Daniello Bartoli (1608'1685)'Bartoli and fellow Jesuit astronomer Niccol $\tilde{A}^2$  Zucchi are credited as probably having been the first to see the equatorial belts on the planet Jupiter

Joseph Bayma (1816,1892), Jesuit known for work in stereochemistry and mathematics

Giacopo Belgrado (1704,1789), Jesuit professor of mathematics

and physics and court mathematician who did experimental work in physics

Mario Bettinus (1582,1657), Jesuit philosopher, mathematician and astronomer; lunar crater Bettinus named after him

Giuseppe Biancani (1566,1624), Jesuit astronomer, mathematician, and selenographer, after whom the crater Blancanus on the Moon is named

Jacques de Billy (1602,1679), Jesuit who has produced a number of results in number theory which have been named after him; published several astronomical tables; The crater Billy on the Moon is named after him.

Paolo Boccone (1633,1704), Cistercian botanist who contributed to the fields of medicine and toxicology

Bernard Bolzano (1781,1848), Priest, mathematician, and logician whose other interests included metaphysics, ideas, sensation, and truth.

Anselmus de Boodt (1550,1632), Canon who was one of the founders of mineralogy

Theodoric Borgognoni (1205,1298), Dominican friar, Bishop of Cervia, and medieval Surgeon who made important contributions to antiseptic practice and anaesthetics

Christopher Borrus (1583,1632), Jesuit mathematician and astronomy who made observations on the magnetic variation of the compass

Roger Joseph Boscovich (1711,1787), Jesuit polymath known for his contributions to modern atomic theory and astronomy

Joachim Bouvet (1656,1730), Jesuit sinologist and cartographer who did his work in China

MichaÅ, Boym (c. 1612,1659), Jesuit who was one of the first

westerners to travel within the Chinese mainland, and the author of numerous works on Asian fauna, flora and geography.

Thomas Bradwardine (c. 1290,1349), Archbishop of Canturbury and mathematician who helped develop the mean speed theorem; one of the Oxford Calculators

Martin Stanislaus Brennan (1845-1927) — Priest and astronomer who wrote several books about science

Henri Breuil (1877,1961), "Priest, archaeologist, anthropologist, ethnologist and geologist.

Jan BroÅ $\frac{1}{4}$ ek (1585,1652), Polish canon, polymath, mathematician, astronomer, and physician; the most prominent Polish mathematician of the 17th century

Louis-Ovide Brunet (1826,1876), "Priest who was one of the founding fathers of Canadian botany

Francesco Faà di Bruno (c. 1825,1888), Priest and mathematician beatified by Pope John Paul II

Ismaël Bullialdus (1605,1694), Priest, astronomer, and member of the Royal Society; the Bullialdus crater is named in his honor

Jean Buridan (c. 1300 , after 1358), Priest who formulated early ideas of momentum and inertial motion and sowed the seeds of the Copernican revolution in Europe

Roberto Busa (1913-2011) — Jesuit wrote a lemmatization of the complete works of St. Thomas Aquinas (Index Thomisticus) which was later digitalized by IBM.

 $\mathsf{C}$ 

Niccol $\tilde{A}^2$  Cabeo (1586,1650), Jesuit mathematician; the crater Cabeus is named in his honor

Nicholas Callan (1799,1846), Priest & Irish scientist best

known for his work on the induction coil

John Cantius (1390-1473), Priest and Buridanist mathematical physicist who further developed the theory of impetus

Jean Baptiste Carnoy (1836-1899) — Priest who has been called the founder of the science of cytology[by whom?]

Giovanni di Casali (died c. 1375) — Franciscan friar who provided a graphical analysis of the motion of accelerated bodies

Paolo Casati (1617-1707) — Jesuit mathematician who wrote on astronomy and vacuums; The crater Casatus on the Moon is named after him.

Laurent Cassegrain (1629-1693) — Priest who was the probable namesake of the Cassegrain telescope; The crater Cassegrain on the Moon is named after him

Benedetto Castelli (1578-1643) — Benedictine mathematician; long-time friend and supporter of Galileo Galilei, who was his teacher; wrote an important work on fluids in motion

Bonaventura Cavalieri (1598-1647) — Jesuate known for his work on the problems of optics and motion, work on the precursors of infinitesimal calculus, and the introduction of logarithms to Italy. Cavalieri's principle in geometry partially anticipated integral calculus; the lunar crater Cavalerius is named in his honor

Antonio José Cavanilles (1745-1804) — Priest and leading Spanish taxonomic botanist of the 18th century

Francesco Cetti (1726-1778) — Jesuit zoologist and mathematician

Tommaso Ceva (1648-1737) — Jesuit mathematician and professor who wrote treatises on geometry, gravity, and arithmetic

Christopher Clavius (1538-1612) — Respected Jesuit Astronomer and mathematician who headed the commission that yielded the Gregorian calendar; wrote influential astronomical textbook.

Guy Consolmagno (1952- ) — Jesuit astronomer and planetary scientist

Nicolaus Copernicus (1473-1543) -Renaissance astronomer and canon famous for his heliocentric cosmology that set in motion the Copernican Revolution

Vincenzo Coronelli (1650-1718) — Franciscan cosmographer, cartographer, encyclopedist, and globe-maker

George Coyne (1933- ) — Jesuit astronomer and former director of the Vatican Observatory

James Cullen (mathematician) (1867-1933)- Jesuit mathematician who published what is now known as Cullen numbers in number theory

James Curley (astronomer) (1796-1889) — Jesuit who was the first director of Georgetown Observatory and determined the latitude and longitude of Washington D.C.

Albert Curtz (1600-1671), Jesuit astronomer who expanded on the works of Tycho Brahe and contributed to early understanding of the moon; The crater Curtius on the Moon is named after him.

Johann Baptist Cysat (1587-1657) — Jesuit mathematician and astronomer, after whom the lunar crater Cysatus is named; published the first printed European book concerning Japan; one of the first to make use of the newly developed telescope; most important work was on comets

Jean-Baptiste Chappe d'Auteroche (1722-1769) — Priest and astronomer best known for his observations of the transits of Venus

Ignazio Danti (1536-1586)-Dominican mathematician, astronomer, cosmographer, and cartographer

Armand David (1826-1900)-Lazarist priest, zoologist, and botanist who did important work in these fields in China

Francesco Denza (1834-1894) — Barnabite meteorologist, astronomer, and director of Vatican Observatory

 $V\tilde{A}iclav$  Prokop DiviÅi (1698-1765) — Czech priest who studied electrical phenomenons and constructed, among other inventions, the first electrified musical instrument in history

Alberto Dou (1915-2009), Spanish Jesuit priest who was president of the Royal Society of Mathematics, member of the Royal Academy of Natural, Physical, and Exact Sciences, and one of the foremost mathematicians of his country.

Johann Dzierzon (1811-1906), Priest and pioneering apiarist who discovered the phenomenon of parthenogenesis among bees, and designed the first successful movable-frame beehive; has been described as the ""father of modern apiculture""

F

Francesco Faà di Bruno (c. 1825-1888),Priest and mathematician beatified by Pope John Paul II

Honoré Fabri (1607-1688), Jesuit mathematician and physicist

Jean-Charles de la Faille (1597-1652), Jesuit mathematician who determined the center of gravity of the sector of a circle for the first time

Gabriele Falloppio (1523-1562), Canon and one of the most important anatomists and physicians of the sixteenth century. The Fallopian tubes, which extend from the uterus to the

ovaries, are named for him.

Gyula Fényi (1845-1927), Jesuit astronomer and director of the Haynald Observatory; noted for his observations of the sun; The crater Fényi on the Moon is named after him

Louis Feuillée (1660-1732), Minim explorer, astronomer, geographer, and botanist

Placidus Fixlmillner (1721-1791) - Benedictine priest and one of the first astronomers to compute the orbit of Uranus

Paolo Frisi (1728-1784), Priest, mathematician, and astronomer who did significant work in hydraulics

 $\mathsf{Jos} \tilde{\mathsf{A}} @$  Gabriel Funes (1963 ), Jesuit astronomer and current director of the Vatican Observatory

Lorenzo Fazzini (1787-1837) — Priest and physicst born in Vieste and working in Neaples

GJoseph Galien (1699 — c. 1762) — Dominican professor who wrote on aeronautics, hailstorms, and airships

Jean Gallois (1632-1707) — French scholar, abbot, and member of Academie des sciences

Pierre Gassendi (1592-1655) — French priest, astronomer, and mathematician who published the first data on the transit of Mercury; best known intellectual project attempted to reconcile Epicurean atomism with Christianity

Agostino Gemelli (1878-1959) — Franciscan physician and psychologist; founded Catholic University of the Sacred Heart in Milan

Johannes von Gmunden (c. 1380-1442) — Canon, mathematician, and astronomer who compiled astronomical tables; Asteroid 15955 Johannesgmunden named in his honor

Carlos de Sigüenza y Góngora (1645"1700) — Priest, polymath,

mathematician, astronomer, and cartographer; drew the first map of all of New Spain

Andrew Gordon (Benedictine) (1712-1751) — Benedictine monk, physicist, and inventor who made the first electric motor

Christoph Grienberger (1561-1636) — Jesuit astronomer after whom the crater Gruemberger on the Moon is named; verified Galileo's discovery of Jupiter's moons.

Francesco Maria Grimaldi (1618-1663) — Jesuit who discovered the diffraction of light (indeed coined the term ""diffraction""), investigated the free fall of objects, and built and used instruments to measure geological features on the moon

Robert Grosseteste (c. 1175 - 1253) — Bishop who was one of the most knowledgeable men of the Middle Ages; has been called ""the first man ever to write down a complete set of steps for performing a scientific experiment.""[8]

Paul Guldin (1577-1643) — Jesuit mathematician and astronomer who discovered the Guldinus theorem to determine the surface and the volume of a solid of revolution

Bartolomeu de GusmÃfo (1685-1724) — Jesuit known for his early work on lighter-than-air airship design

Н

Johann Georg Hagen (1847-1930) — Jesuit director of the Georgetown and Vatican Observatories; The crater Hagen on the Moon is named after him

Nicholas Halma (1755-1828) — French abbot, mathematician, and translator

Jean-Baptiste du Hamel (1624-1706) — French priest, natural philosopher, and secretary of the Academie Royale des Sciences

René Just HaÃ $\frac{1}{4}$ y (1743-1822) — Priest known as the father of crystallography

Maximilian Hell (1720-1792) — Jesuit astronomer and director of the Vienna Observatory; the crater Hell on the Moon is named after him.

MichaÅ, Heller (1936- ) — Polish priest, Templeton Prize winner, and prolific writer on numerous scientific topics

Lorenz Hengler (1806-1858) — Priest often credited as the inventor of the horizontal pendulum

Hermann of Reichenau (1013-1054) -Benedictine historian, music theorist, astronomer, and mathematician

Pierre Marie Heude (1836-1902) — Jesuit missionary and zoologist who studied the natural history of Eastern Asia

Franz von Paula Hladnik (1773-1844) — Priest and botanist who discovered several new kinds of plants, and certain genera have been named after him

Giovanni Battista Hodierna (1597â-1660) — Priest and astronomer who catalogued nebulous objects and developed an early microscope

Victor-Alphonse Huard (1853-1929) — Priest, naturalist, educator, writer, and promoter of the natural sciences

Ι

Maximus von Imhof (1758-1817) — German Augustinian physicist and director of the Munich Academy of Sciences

Giovanni Inghirami (1779-1851) — Italian Piarist astronomer who has a valley on the moon named after him as well as a crater

Fran $\tilde{A}$ sois Jacquier (1711-1788) — Franciscan mathematician and physicist; at his death he was connected with nearly all the great scientific and literary societies of Europe

Stanley Jaki (1924-2009) — Benedictine priest and prolific writer who wrote on the relationship between science and theology

 $\tilde{A} \square$ nyos Jedlik (1800-1895) — Benedictine engineer, physicist, and inventor; considered by Hungarians and Slovaks to be the unsung father of the dynamo and electric motor

K

Georg Joseph Kamel (1661-1706) — Jesuit missionary and botanist who established the first pharmacy in the Philippines

Karl Kehrle (1898-1996) — Benedictine Monk of Buckfast Abbey, England. Beekeeper. World authority on bee breeding, developer of the Buckfast bee.

Eusebio Kino (1645-1711) — Jesuit missionary, mathematician, astronomer and cartographer who drew maps based on his explorations first showing that California was not an island as then believed and who published an astronomical treatise in Mexico City of his observations of the Kirsch comet.

Otto Kippes (1905-1994) — Priest acknowledged for his work in asteroid orbit calculations; the main belt asteroid 1780 Kippes was named in his honour

Athanasius Kircher (1602-1680) — Jesuit who has been called the father of Egyptology and ""Master of a hundred arts""; wrote an encyclopedia of China; one of the first people to observe microbes through a microscope

Wenceslas Pantaleon Kirwitzer (1588-1626) — Jesuit astronomer and missionary who published observations of comets

Jan Krzysztof Kluk (1739–1796) - Priest, naturalist

agronomist, and entomologist who wrote a multi-volume work on Polish animal life

Marian Wolfgang Koller (1792-"1866) — Benedictine professor who wrote on astronomy, physics, and meteorology

Franz Xaver Kugler (1862-1929) — Jesuit chemist, mathematician, and Assyriologist who is most noted for his studies of cuneiform tablets and Babylonian astronomy

L

Ramon Llull (ca. 1232 — ca. 1315) Majorcan writer and philosopher, logician and a Franciscan tertiary considered a pioneer of computation theory

Nicolas Louis de Lacaille (1713-1762) — French deacon and astronomer noted for cataloguing stars, nebulous objects, and constellations

Eugene Lafont (1837-1908) — Jesuit physicist, astronomer, and founder of the first Scientific Society in India

Antoine de Laloub $\tilde{A}$ "re (1600-1664) — Jesuit and first mathematician to study the properties of the helix

Bernard Lamy (1640-1715) — Oratorian philosopher and mathematician who wrote on the parallelogram of forces

Pierre Andr© Latreille (1762-1833) — Priest and entomologist whose works describing insects assigned many of the insect taxa still in use today

Georges Lematre (1894-1966)-" Belgian priest and father of the Big Bang Theory

Thomas Linacre (c. 1460-1524) — English priest, humanist, translator, and physician

Francis Line (1595-1675) — Jesuit magnetic clock and sundial maker who disagreed with some of the findings of Newton and

## Boyle

Juan Caramuel y Lobkowitz (1606-1682) - Cistercian who wrote on a variety of scientific subjects, including probability theory

М

Jean Mabillon (1632-1707) — Benedictine monk and scholar, considered the founder of palaeography and diplomatics

James B. Macelwane (1883-1956) - ""The best-known Jesuit seismologist"" and ""one of the most honored practitioners of the science of all time""; wrote the first textbook on seismology in America.

John MacEnery (1797-1841) — Archaeologist who investigated the Palaeolithic remains at Kents Cavern

Paul McNally (1890-1955) — Jesuit astronomer and director of Georgetown Observatory; the crater McNally on the Moon is named after him.

Manuel Magri (1851-1907) — Jesuit ethnographer, archaeologist and writer; one of Malta's pioneers in archaeology

Emmanuel Maignan (1601-1676) — Minim physicist and professor of medicine who published works on gnomonics and perspective

Charles Malapert (1581-1630) — Jesuit writer, astronomer, and proponent of Aristotelian cosmology; also known for observations of sunpots and of the lunar surface, and the crater Malapert on the Moon is named after him

Nicolas Malebranche (1638-1715) — Oratorian philosopher who studied physics, optics, and the laws of motion and disseminated the ideas of Descartes and Leibniz

Marcin of UrzÄ $^{\text{M}}$ dÃ $^{\text{3}}$ w (c. 1500-1573) — Priest, physician, pharmacist, and botanist

Joseph Maréchal (1878-1944) — Jesuit philosopher and

## psychologist

Marie-Victorin (1885-1944) — Christian Brother and botanist best known as the father of the Jardin botanique de Montréal

Edme Mariotte (c. 1620-1684) — Priest and physicist who recognized Boyle's Law and wrote about the nature of color

Francesco Maurolico (1494-1575) — Benedictine who made contributions to the fields of geometry, optics, conics, mechanics, music, and astronomy, and gave the first known proof by mathematical induction

Christian Mayer (astronomer) (1719-1783) — Jesuit astronomer most noted for pioneering the study of binary stars

James Robert McConnell (1915-1999) — Irish Theoretical Physicist, Pontifical Academician, Monsignor

Gregor Mendel (1822-1884) — Augustinian monk and father of genetics

Pietro Mengoli (1626-1686) — Priest and mathematician who first posed the famous Basel Problem

Giuseppe Mercalli (1850-1914) — Priest, volcanologist, and director of the Vesuvius Observatory who is best remembered today for his Mercalli scale for measuring earthquakes which is still in use

Marin Mersenne (1588-1648) — Minim philosopher, mathematician, and music theorist who is often referred to as the ""father of acoustics""

Paul of Middelburg (1446-1534) -Bishop of Fossombrone who wrote important works on the reform of the calendar

Maciej Miechowita (1457-1523) — Canon who wrote the first accurate geographical and ethnographical description of Eastern Europe, as well as two medical treatises

Fran $\tilde{A}$ sois-Napol $\tilde{A}$ con-Marie Moigno (1804-1884) — Jesuit physicist and mathematician; was an expositor of science and translator rather than an original investigator

Juan Ignacio Molina (1740-1829) — Jesuit naturalist, historian, botanist, ornithologist and geographer

Louis MorÃ $\circ$ ri (1643-1680) — 17th centry priest and encyclopaedist

Théodore Moret (1602-1667) — Jesuit mathematician and author of the first mathematical dissertations ever defended in Prague; the lunar crater Moretus is named after him.

Landell de Moura (1861-1928) — Priest and inventor who was the first to accomplish the transmission of the human voice by a wireless machine

Gabriel Mouton (1618-1694) — Abbot mathematician astronomer and early proponent of the metric system

Jozef MurgaÅi (1864-1929) — Priest who contributed to wireless telegraphy and help develop mobile communications and wireless transmission of information and human voice

 $\mathsf{Jos}\tilde{\mathsf{A}}^{\scriptscriptstyle{\bigcirc}}$  Celestino Mutis (1732-1808) — Canon botanist and mathematician who led the Royal Botanical Expedition of the New World

Ν

Jean Fran $\tilde{A}$ sois Niceron (1613-1646) — Minim mathematician who studied geometrical optics

Nicholas of Cusa (1401-1464) — Cardinal philosopher jurist mathematician astronomer and one of the great geniuses and polymaths of the 15th century  $\frac{1}{2}$ 

Julius Nieuwland (1878-1936) - Holy Cross priest known for his contributions to acetylene research and its use as the basis

for one type of synthetic rubber which eventually led to the invention of neoprene by DuPont

Jean-Antoine Nollet (1700-1770) — Abbot and physicist who discovered the phenomenon of osmosis in natural membranes.

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Hugo Obermaier (1877-1946) — Priest prehistorian and anthropologist who is known for his work on the diffusion of mankind in Europe during the Ice Age as well as his work with north Spanish cave art

William of Ockham (c. 1288 - c. 1348) — Franciscan Scholastic who wrote significant works on logic physics and theology; known for Ockham's Razor

Nicole Oresme (c. 1323-1382) — One of the most famous and influential philosophers of the later Middle Ages; economist mathematician physicist astronomer philosopher theologian and Bishop of Lisieux and competent translator; one of the most original thinkers of the 14th century

Barnaba Oriani (1752-1832) — Barnabite geodesist astronomer and scientist whose greatest achievement was his detailed research of the planet Uranus and is also known for Oriani's theorem

P

Tadeusz Pacholczyk (1965- ) — Priest neuroscientist and writer

Luca Pacioli (c. 1446-1517) — Franciscan friar who published several works on mathematics and is often regarded as the Father of Accounting

Ignace-Gaston Pardies (1636-1673) — Jesuit physicist known for his correspondence with Newton and Descartes

Franciscus Patricius (1529-1597) — Priest cosmic theorist

philosopher and Renaissance scholar

John Peckham (1230-1292) — Archbishop of Canterbury and early practitioner of experimental science

Nicolas Claude Fabri de Peiresc (1580-1637) — Abbot and astromer who discovered the Orion Nebula; lunar crater Peirescius named in his honor

Stephen Joseph Perry (1833-1889) — Jesuit astronomer and Fellow of the Royal Society; made frequent observations of Jupiter's satellites of stellar occultations of comets of meteorites of sun spots and faculae

Giambattista Pianciani (1784-1862) — Jesuit mathematician and physicist

Giuseppe Piazzi (1746-1826) — Theatine mathematician and astronomer who discovered Ceres today known as the largest member of the asteroid belt; also did important work cataloguing stars

Jean Picard (1620-1682) — Priest and first person to measure the size of the Earth to a reasonable degree of accuracy; also developed what became the standard method for measuring the right ascension of a celestial object; The PICARD mission an orbiting solar observatory is named in his honor

Edward Pigot (1858-1929) — Jesuit seismologist and astronomer

Alexandre Guy Pingré (1711-1796) — French priest astronomer and naval geographer; the crater Pingré on the Moon is named after him as is the asteroid 12719 Pingré

Andrew Pinsent (1966-) — Priest whose current research includes the application of insights from autism and social cognition to 'second-person' accounts of moral perception and character formation. His previous scientific research contributed to the DELPHI experiment at CERN

Jean Baptiste Fran $\tilde{A}$ sois Pitra (1812-1889) — Bendedictine cardinal archaeologist and theologian who noteworthy for his great archaeological discoveries

Charles Plumier (1646