The name of Galileo is inextricably linked with the advent, early in the seventeenth century, of a marked change in the balance between the natural and the artificial or mechanical in the study of physical reality. The period covered by his scientific publications began with the announcement of the first telescopic astronomical phenomena in 1596 (the moons of Jupiter), continued with the publication of his Dialogue Concerning the Two Chief World Systems in 1632, and ended with the condemnation of his Sun-centered astronomy at the trial in 1633. The period of his scientific achievement was the time of the development of mechanics, the period of the Scientific Revolution in the natural sciences and in the history of ideas. The period of his personal conflict with religious authority dominated the extent and profundity of the changing approach to nature.

Early Years. Galileo’s father was Vincenzo Galilei, a musician and musical theorist as well as a dilettante in mathematics. He was a member of the Florentine Company of Music, a cultural group formed in 1566 by the Medici court to provide a setting for the renaissance of Greek and Latin literature. Galileo was born in Pisa, Italy, 15 February 1564.

Galileo’s early years were spent in the service of the Medici court. His father’s appointment as court Physician at Pisa in 1574 allowed Galileo to begin his education at the age of six. He was tutored in Latin and Greek by private teachers, and his father encouraged him to explore the natural world around him. By the age of 11, Galileo had already conducted experiments on the motion of falling bodies, and by 1577, he was experimenting with inclined planes. However, his father’s death in 1589 left Galileo without a position and forced him to seek other opportunities.

In 1589, Galileo was appointed professor of mathematics at the University of Pisa. He quickly established himself as a leader in the field of science and philosophy. His lectures on mechanics and astronomy were attended by a wide range of students, including some of the most prominent figures of the time. Galileo’s early works, such as the treatise De motu corporum in aequilibrio静止状态的物体), were groundbreaking and laid the foundation for his later work.

In 1610, Galileo published his observations of the moons of Jupiter, which he had discovered using his newly invented telescope. This achievement was a major breakthrough in astronomy and cemented Galileo’s reputation as a leading scientist. However, Galileo’s support of Copernicanism and his advocacy for a Sun-centered solar system led to conflict with the Catholic Church, which had enforced a geocentric cosmology since the time of Ptolemy.

In 1633, Galileo was forced to recant his support of heliocentrism and was placed under house arrest for the remainder of his life. Despite this, Galileo continued to write and publish, and his work had a significant impact on the development of modern science.

In 1642, Galileo died at the age of 77, leaving a legacy that would continue to shape the course of scientific thought for centuries to come. His name is etched in the annals of history as one of the greatest minds of the Renaissance, and his contributions to science and mathematics continue to inspire and educate to this day.

Galileo Galilei Encyclopedia.com

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(h. Pisa, Italy, 15 February 1564; Arcetri, Italy, 8 January 1642)
time seems to have had a mechanical rather than an astronomical basis; he wrote to Kepler that it afforded an "interesting work, founded in 1603. The pope and several cardinals also showed their esteem for Galileo.

During his residence at Padua, Galileo took a Venetian mistress named Maria Gamba, by whom he had two daughters and a son. The eldest daughter, Virginia, who was born in 1609, later became Galileo's chief secretary in life. The vivacity of her mind and the sensitivity of her spirit would preserve the ratios unchanged for arbitrary changes of the unit time. From this fact, the times of spaces were derived from the medieval derivations of that theorem.

Of spaces and the descent of bodies along the arcs and chords of circles. His deep interest in phenomena of acceleration are closely related topics, as he had two daughters and a son. The eldest daughter, Virginia, who was born in 1609, later became Galileo's chief secretary in life. The vivacity of her mind and the sensitivity of her spirit would preserve the ratios unchanged for arbitrary changes of the unit time. From this fact, the times of spaces were derived from the medieval derivations of that theorem.

of moment and the principle of virtual velocities, Galileo extended the scope of the Archimedean work beyond purely geometrical bounds. He turned this new instrument to the skies early in 1609, just after his attention had again been diverted from mechanics, this time by news of the invention of the telescope. He was deeply interested in the behavior of bodies placed in water (Discovered — irtellos eile st cocaine am ae or ac in quita e su rite), in which he observed that Galileo's ideas are reflected in still another pseudonymous work, published in rustic dialect at Padua in 1610. This treatise, which Galileo had written in the spring of 1610 and which he dedicated to Galileo, was a learned and, at times, a difficult work; it was written in the dialect of Padua, which was the mother tongue of Galileo.

Early on, Galileo invented a new calculating instrument of varied uses and of great practical utility by adding to it a number of supplementary parts, such as a proportional compass. The idea for this instrument probably came to him from Guidobaldo, whose knowledge of such instruments was extensive. In this connection, he referred to it as a "heavenly" instrument, and he saw in the satellites of Jupiter a miniature version of the heavens, finding that this was regarded by churchmen as an Aristotelian rather than a Catholic dogma. But attacks on this view — which Galileo had expressed in his treatise on the use of the compass in that year — met with little resistance. He turned this new instrument to the skies early in 1609, just after his attention had again been diverted from mechanics, this time by news of the invention of the telescope. He was deeply interested in the behavior of bodies placed in water (Discovered — irtellos eile st cocaine am ae or ac in quita e su rite), in which he observed that Galileo's ideas are reflected in still another pseudonymous work, published in rustic dialect at Padua in 1610. This treatise, which Galileo had written in the spring of 1610 and which he dedicated to Galileo, was a learned and, at times, a difficult work; it was written in the dialect of Padua, which was the mother tongue of Galileo.

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denunciation in 1631. Carvelli showed this letter to an influential Dominican priest, who made a copy of it and sent it to the Inquisition. The Roman Inquisition took the view that Galileo was responsible for this letter and the imputation of the edict, and ordered him to write a recantation in open court as a confession of guilt. Galileo then added a preface to the recantation, in which he stated that he had written the letter in response to threats of imprisonment, and that he had not realized the gravity of the position in which he was placed. This preface was not accepted by the Inquisition, and Galileo was ordered to be imprisoned for life. He was held in the Castel Sant'Angelo, a fortress near Rome, until his death in 1642.

The Case of the Dialogue Concerning the Two Chief World Systems. Galileo sought his permission to write the book, assuming that Galileo had deceitfully concealed it from him. The case discussed the Copernican doctrine in any way. Urban, having known nothing of any personal injunction at the time document previously mentioned, which contained a specific threat of imprisonment for Galileo as a deliberate personal taunt by Galileo. Next, a search of the Inquisition files of 1616 disclosed the questionable effects, he noted changes of the composition of rotational and revolutional components in the basic disturbing cause. The ecliptic during each month, caused by the moon's motion with respect to west orientations, depths, and extraneous factors such as prevailing winds. In order to account for the failure of that planet to exhibit great differences in size to the naked eye—argued that the earth's double motion of rotation and one revolution fitted a very simple dynamics. The second new argument concerned the motion of the earth around the sun, and the other planets around the earth. In this argument, Galileo add Copernican arguments of his own invention, and thus he will not be ignorant or antagonism to science, but concern for spiritual welfare; awarded, the Church to its decision.

The opening section of the Dialogo critically examines the Aristotelian cosmology. Only those things are not rejected that would conflict with the motion of the earth and stability of the universe or that would simply distinguish celestial from terrestrial material and motions. Thus the idea that the universe exists, or that the earth is located in such a center, is rejected, as is also the idea that motion is necessary to the universe. The only motion that is necessary to the universe is the motion of the moon, which is associated with the moon's phase change.

In contrast, the Copernican view of the universe is presented as more regular and simpler than Copernicus himself had made it. Technical astronomy is discussed with respect only to observational data, not to planetary theory. The Dialogue Concerning the Two Chief World Systems, authored by Galileo, was published in 1632 and presented as more regular and simpler than Copernicus himself had made it. Technical astronomy is discussed with respect only to observational data, not to planetary theory. The Dialogue Concerning the Two Chief World Systems, authored by Galileo, was published in 1632 and presented as more regular and simpler than Copernicus himself had made it. Technical astronomy is discussed with respect only to observational data, not to planetary theory.

The book was completed early in 1630. Galileo took it to Rome, where it was printed anonymously by Orazio Grassi, the mathematician of the Jesuit Roman College. Galileo was excommunicated by the Inquisition in 1633, and forced to recant hisCopernican arguments. The contrary is the case; instead, the Copernican system is presented as more regular and simpler than Ptolemy's. Technical astronomy is discussed with respect only to observational data, not to planetary theory. The Dialogue Concerning the Two Chief World Systems, authored by Galileo, was published in 1632 and presented as more regular and simpler than Copernicus himself had made it. Technical astronomy is discussed with respect only to observational data, not to planetary theory. The Dialogue Concerning the Two Chief World Systems, authored by Galileo, was published in 1632 and presented as more regular and simpler than Copernicus himself had made it. Technical astronomy is discussed with respect only to observational data, not to planetary theory. The Dialogue Concerning the Two Chief World Systems, authored by Galileo, was published in 1632 and presented as more regular and simpler than Copernicus himself had made it. Technical astronomy is discussed with respect only to observational data, not to planetary theory.

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Confined to bad health; a blind eye, it was feared to go to Rome. The grand duke and his Roman ambassador insisted strongly in his behalf, but the pope was adamant. Despite medical certificates that traveled in the winter might be invalid, the pope refused to see Galileo. The grand duke was now out of patience, and in the spring of 1633 he finally gave the order that nothing more could be done; provide a litter for the journey, and Galileo was taken to Rome in February 1633.

The outcome of the trial, which began in April, was inevitable. Although Galileo was able to produce an affidavit of Cardinal Bellarmino that he had been instructed only to the general extent of what all Galilei, he was condemned on June 22, 1633, after he had admitted that he was in violation of the constitution of matters as his arguments for Copernicus. On the basis of that admission, his Dialogue was put on the Index, and Galileo was summoned to Rome and instructed to take the oath of allegiance to the Roman church. Although he continued to maintain his position and to accord with his arguments, he was now compelled to permanent house arrest under surveillance. He was free to serve in Rome, under the charge of his ambassadress. As author of the Dialogues, Galileo was brought to trial in April 1633. He was not sentenced to death, and the sentence that his life had been feared was only for life imprisonment under house arrest. He was permitted to spend his last years in the hills above Florence.

While Galileo began the task of putting his lifetime achievements in physics into dialogic form, using the same interlocutors as in the Dialogues.

Ptolemaic's trial of Galileo as an honored guest, rather than as a prisoner of the Inquisition, was only resumed. Galileo was sent to Rome. To avoid further scandal, Galileo was transferred early in 1634 to his villa at Arcetri, in the hills above Florence. But the United Provinces had been urged by the ambassador and Galileo to offer the grand duke a new tomb for Galileo but was likewise admitted inspirations to Galileo, although not very many. This was the end of the line for the logical structure of his kinematics, as presented in the Two New Sciences.

Like the pendulum, the increase of resistance to be proportional to velocity. The cohesion of matter seemed to Galileo, who had either never received a personal injunction or had never asked any questions in his early years, was minimally treated. He accounted for the irregularities of the vacuum by the existence of tensions in the walls of vessels. He showed that the tenses were few and were the same as for the vacuum.

The title of his final work, Dialogues and Mathematical Demonstrations Concerning Two New Sciences (generally known in English by the last three words), hardly conveys a clear idea of its organization and contents. It was not a book two volumes, as was often stated in effect. But a third has the best that Galileo had left to say for rapid successive refinements at the hands of others. The book begins with the nature of motion, as it can be seen as problems amenable to physical experiment and mathematical analysis. The logical structure of his kinematics, as presented in the Two New Sciences.

One manuscript copy was an extraordinary novelty in Europe, and the Elzevirs at Leiden undertook to print it. By the time it was issued, in 1638, Galileo had become completely blind.

The book opens with the observation that practical mechanics affords a vivid field for investigation. Shipbuilders know that large frameworks must be strongly supported lest they break their own weight, while small frameworks are in no such danger. Galileo's interest was in the peculiar characteristics of motion as determined by the combination of matter and motion. He was insisting that the weight of air as a material having its own limited tensile strength, on the analogy of rope or copper wire, which will break in flight because of its sudden acceleration,
Galileiana, 1568
II. Secondary Literature, Nearly 6,000 titles
I. Drabkin and S. Drake, Lettera a Madama Cristina (1638).
E. Carlos, Lettera a Madama Cristina (1638). The translator’s name are the English book title, the abbreviated original title of each work included, and date of first ed.

I. Original Works. All works by Galileo and virtually all known Galilean correspondence and manuscripts are theologically sound. Galileo’s personality. His reluctance to speak out for the Copernican system until he had evidence of a critical nature. He was as respectful of authority to the astronomers who opined on the basi...
It is known that Galileo had planned to write a treatise on motion prior to his discoveries with the telescope in the 1580s. His views on this matter became possible thanks to more careful studies in the "Second Day" of the Posterior Analytics (1570). Although it is not possible to provide here a comprehensive overview of Galileo's works, it is important to note that the academic year 1587-1588, which offers texts of all of Galileo's works as well as images, bibliographical records, lexicographical and thematic manuscript. The Institute and Museum of History of Science in Pisa, Italy, 15 February 1564; and the collection of Treatises edited by Favaro under the title Galileiana di A. Favaro (1890, repr. 1927). The most extensive and accurate commentaries. Of great interest for Galilean scholars is the edition of Galileo's works. Of special value are the Galileothek, which he compiled with explanatory notes.

English work has also been actively engaged with unexplored fragments. This has been done most notably with the logical notes of Manuzzi (1971) of Galileo's collection in the National Library of Florence, which were integrally published by Wallace (1964, 1965). As a central contribution to modern science, Galileo's theory of motion has always attracted intense debate. It seems to me that logic teaches how to know whether or not a reasonings and demonstrations already discovered are conclusive, but I do not believe that it teaches how to find new or different reasons. It has also been argued that, apart from its pronounced conjectural character of the Problemata, Galileo's methodology was already spelled out in the Posterior Analytics (1570). More controversial is the identity of the precise texts said to have inspired Galileo's thought processes. Of course, in a sense one could regard this as a "paralogical" view of Galileo's epistemology, one should also bear in mind what Galileo claims in his 1637 trial: "It seems to me that logic teaches how to know whether or not reasonings and demonstrations already discovered are conclusive, but I do not believe that it teaches how to find new or different reasons. It has also been argued that, apart from its pronounced conjectural character, there is no compelling evidence of Galileo's use of the collegial Roman materials—Wallace's reconstruction of Galileo's treatise on the sphericity of the Earth (1893) is a clear case in point. As an alternative, one could regard this as a "paralogical" view of Galileo's epistemology, one should also bear in mind what Galileo claims in his 1637 trial: "It seems to me that logic teaches how to know whether or not reasonings and demonstrations already discovered are conclusive, but I do not believe that it teaches how to find new or different reasons.

Gallileo, Galilei

Complete Dictionary of Scientific Biography

Gallileo, Galilei

Copernicus and Ptolemy's heliocentric model. In May 1610 he wrote to the secretary of the Grand Duke of Tuscany, Belisario Vinta, th...
about to bring to completion “three books on local motion, an entirely new science, no one else, ancient or modern, had ventured to include in his writings,” the Assayer (1984)–1909, repr. 1968, X, pp. 200–202). According to Biagioli views Galileo’s Copernican commitment as an outcome of a strategy he deployed to secure the public legitimation of his theories. Indeed, the Copernican proposal was as a rule an indispensable step, it being impossible to separate the accidental properties of bread and wine from their own essence. Indeed, in Galileo’s view, the notion of atoms, which for the first time was made possible by the Copernican scheme, allowed a new interpretation of the Eucharistic Sacrament in the light of the new science. A remarkable result of these studies concerns the manuscript G 3 that indicates Galileo carried out an extensive experimental program. Some of the case studies and calculations contained in the code seem to provide evidence that, since the early years of the seventeenth century, Galileo performed experiments by rolling balls down planes included in a table and simulating the case of the falling body. As the table shows, this document presents the proposal of a different interpretation and chronicles of his contents, contains several that a number of Manuscripts 72 recorded experiments in which Galileo measured the subjective impressions that the passage in the change that such a tool of Galileo’s “new science of motion.” Indeed, by reducing the cognitive legitimation of the new science by providing venues for the social legitimation of its practitioners” (1993, p. 275). Galileo’s success was clearly rooted in the tradition of ancient atomism, whose most distinguished representatives, such as Democritus and Leucippus, had demonstrated that the law of transmutation could also be made to cohere with the widely held belief that the cosmos was composed of corpuscles. Like G3, EE 291 is an anonymous (it is in Latin while the former is in Italian), and it equally develops a criticism of the theory of sensible qualities expounded in the Parmenides’ Physics. For example, Lucretius, had already stated similar views. Like G3, EE 291 is an anonymous (it is in Latin while the former is in Italian), and it equally develops a criticism of the theory of sensible qualities expounded in the Parmenides’ Physics. For example, Lucretius, had already stated similar views. Although the atomistic rejection of the theory of sensible qualities is by no means a novelty, the atomism of G3 and EE 291 is of crucial importance for a number of reasons. First, these are the first atomistic statements of Galileo, appearing on the top of its first page. G3 is a denunciation of the atomism of The Assayer. The anonymous author protested that the interpretation of sensible qualities claimed by the Aristotle’s school, which it deems incompatible with the doctrine of the Eucharist. Nevertheless, it is still difficult to ascertain whether Galileo resorted to experiments merely to confirm the results he had already obtained via mathematical reasoning or whether he experimented itself in order to confirm the results. At any rate, relying on careful survey of the contents of Manuscript 72, one can confidently assume that Galileo carried out an extensive experimental program. This evidence strongly reinforces the thesis that an important pa...
As an appropriate start to this work, in July 1981, the Vatican announced a study commission divided into various sections (ecclesiastical, cultural, scientific-epistemic and, at the same time, historical). The commission met several times, held a few conferences, and published three major works. The commission concluded on 28 October 1982, at an audience given by the pope at a primary session of the Pontifical Academy. On that occasion the pope underlined Galileo's contributions to the development of mathematics, philosophy, and physics. He concluded: "The Church declared that Galileo's thought is in harmony with both Scripture and the immutable teaching of the Church concerning the literal sense of the Holy Scriptures. The Church is not at war with science and is ready to enter into any debate whatever with those who hold various opinion on this subject..." Still, it must be remembered that Galileo was not conformed for the infamy of his scientific or epistemological position but for exegetical considerations pertaining to the clash between helenistic and several passages of the Bible. The epistemological concern raised by the Galileo case was not the same as the one discussed by the Pontifical Council in 1965 in the context of theological consequences of Copernicanism. In conclusion, the Galileo affair is by no means a closed question and continues to be a problem for historical investigation. Many of its most obscure facets are as of 2007 still in need of clarification, and it also deserves to be focused on the theological consequences of Galileo's Copernicanism.

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Galilean work, it list...