# Galileo and the Catholic Church

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In October, 1992 Cardinal Paul Poupard presented to Pope John Paul II the results of the papal-requested Pontifical Academy study of the famous 1633 trial of Galileo.1 He reported the study's conclusion that at the time of the trial, "theologians…. failed to grasp the profound non-literal meaning of the Scriptures when they describe the physical structure of the universe. This led them unduly to transpose a question of factual observation into the realm of faith…(and) to a disciplinary measure from which Galileo 'had much to suffer.'"2 The headlines that followed screamed that the Church had reversed itself on the seventeenth century astronomer and commentators wondered about the impact of the study on papal infallibility. The New York Times snickered that the Church had finally admitted that Galileo was right and the earth did revolve around the sun. Others proclaimed that the Church had surrendered in the alleged war between faith and science.

For over three and a half centuries, the trial of Galileo has been an anti-Catholic bludgeon aimed at the Church. In the 18th, 19th and early 20th century, it was wielded to show the Church as the enemy of enlightenment, freedom of thought and scientific advancement, part of a caricature of an institution dedicated to keeping mankind in a theocratic vice. In the cultural wars of our own day, Galileo is resurrected as a martyr of an oppressive Church, a Church that is the enemy of so-called reproductive advances that would prove as right as Galileo's science and the Church as backwards in opposing them. Galileo has become an all-encompassing trump card, played whether the discussion is over science, abortion, gay rights, legalized pornography, or simply as a legitimate reason for anti-Catholicism itself.3

The story of Galileo and the Church is re-told in Galileo's Daughter4 by Dava Sobel. Throughout the account of Galileo's life, scientific studies, and his difficulties with the Church, Sobel weaves surviving letters to him from his illegitimate daughter, Sister Maria Celeste, a Poor Clare nun. The breathless jacket copy describes the book as the story of "a mythic figure whose seventeenth-century clash with Catholic doctrine continues to define the schism between science and religion." The book itself, however, is a straightforward account of the life of Galileo Galilei that gains poignancy through his daughter's descriptive and loving correspondence. It provides a balanced presentation of the conflict that evolved between Galileo and Church authorities, as well as Galileo's own deep Catholic faith. The austere and devout life of Sister Maria Celeste's small and nearly indigent Poor Clare convent in the seventeenth century, as well as the depth of her piety and intelligence, stand in marked contrast to the bleak portrait often painted by prejudiced observers of the Church on the eve of the so-called European Enlightenment. Readers who expected an anti-Catholic, ultra-feminist manifesto from Galileo's Daughter will be disheartened, or pleased.

If Galileo had never lived, the anti-Catholic culture would have had to invent him. The myth of Galileo is more important than the actual events that surrounded him, much as the famous quote attributed to him was never spoken. After recanting his view of the earth orbiting the sun, he was said to have defiantly muttered aloud as he left the trial chamber, Eppur si muove! ("And yet it does move"). It was a quote known by every school child in Protestant America in the nineteenth century, though it was a legend created nearly 125 years after his death.5 As the jacket cover for Galileo's Daughter confirms, the legend of Galileo became part of the anti-Catholic baggage of Western, particularly English-

speaking culture. Galileo represents the myth of the Church at war with science and enlightened thought.

The World of Galileo

Galileo Galilei was born in Pisa on February 18, 1564,6 the same day that Michelangelo died. If Michelangelo represented the last of the Renaissance, Galileo was born to the world of the Reformation. The Council of Trent, which confirmed the Church's formal response to Martin Luther's revolt of 1517, had ended the year prior to his birth. In England, Elizabeth I had assumed the throne six years before his birth to radicalize – and formalize – Henry VIII's schism with Rome. It was a world where the Bible had become a source for a thousand different theologies that would be the pretext for the Thirty Years War in Galileo's lifetime, a universal European conflagration seen by its greatest historian as the first war of modern nationalism, fought under the guise of religion.7 It was a Europe where witches were burned, the deadly plague still erupted, and the glories of the Renaissance had succumbed to an "unhappy desolation"8 brought on by the breakdown in the unity of Christian culture through Luther's Reformation. Even the flowering of learning that was the Renaissance had been reduced to a rigid slavery to all things ancient.

In the midst of this "unhappy desolation," the era would see the beginnings of modern science, developed from those very same Greek and Roman studies encouraged and supported by the Church in the Renaissance. Contrary to the assorted black legends that have come down to us, most of the early scientific progress in astronomy was rooted in the Church. Galileo would not so much discover that the earth revolved around the sun. Rather, he would attempt to prove with his studies and propagate through his writings the theories of a Catholic priest who had died 20 years before Galileo was born, Nicholas Copernicus.

It was also the Church, under the aegis of Pope Gregory XIII, that introduced the "major achievement of modern astronomy"9 when Galileo was in his teens. The Western world still marked time by the Julian calendar created in 46 B.C. By Galileo's day, the calendar was 12 days off, leaving Church feasts woefully behind the seasons for which they were intended. A number of pontiffs had attempted to correct the problem, but it was Pope Gregory XIII who was able to present a more accurate calendar in 1582. Though Protestant Europe fumed at the imposition of "popish time," the accuracy of Gregory's calendar led to its acceptance throughout the West and, essentially, throughout the world by the 20th century.

Copernicus was born in 1473. Ordained to the priesthood, he studied in Italy where he became fascinated with astronomy. The world generally accepted what the senses told and had been taught since Ptolemy (2nd century A.D.), that the earth is fixed and the suns, stars and planets revolve around it. Through mathematical examination Copernicus came to believe that the sun is the center of the universe and the planets, earth included, revolve around it. He never published his studies in his lifetime, though excerpts of his manuscript would circulate in scholarly circles. (His book – De revolutionibus – appeared as he was on his deathbed in 1543.) Pope Leo X (1513-1521) was intrigued by his theories and expressed an interest in hearing them advanced. Martin Luther, calling Copernicus a fool, savaged his theory, as did John Calvin.10

Copernicus died in 1543 and for the most part the Church raised no objections to his revolutionary hypothesis, as long as it was represented as theory, not undisputed fact. The difficulty that both the Church – and the Protestant reformers – had with the theory is that it was perceived as not only contradicting common sense, but Scripture as well where it was taught that Joshua had made the sun

stand still and the Psalmist praised the earth "set firmly in place."11 The theory also could not be proven by current scientific technology. This is where Galileo would falter, and would "have much to suffer" as a result, "treading a dangerous path between the Heaven he revered as a good Catholic and the heavens he revealed through his telescope."12

Galileo and Copernican Theory

The myth we have of Galileo is that of a "renegade who scoffed at the Bible and drew fire from a Church blind to reason."13 In fact, "he remained a good Catholic who believed in the power of prayer and endeavored always to conform his duty as a scientist with the destiny of his soul."14 Galileo Galilei was raised in Pisa where his father dabbled in business and taught music out of his home. The young Galileo hoped to become a monk but instead studied medicine at the University of Pisa at his father's direction, where he became enthralled with mathematics. He would return to Pisa as a teacher of mathematics and moved on to the University of Padua in the Republic of Venice, where he would eventually secure a high post with the ruling Medici family.

While at Venice, Galileo heard of the invention of a spyglass that allowed one to see objects that were far away. From this spyglass, Galileo would develop the telescope and turn his eyes toward the exploration of the heavens. He produced his first book – The Starry Messenger – detailing his observations in 1610, describing the moons of Jupiter, the location of stars, and that the moon was not a perfect sphere. Galileo had overthrown contemporary astronomy and, while being carved up by fellow scientists, became a controversial celebrity. In 1611 he was celebrated in Rome for his work, receiving a favorable audience with Pope Paul V, and became friends with Cardinal Maffeo Barberini, the future Pope Urban VIII, who would honor the astronomer with a poem.

Galileo had begun his teaching career expounding the earth-centered universe, but his observations through his telescope quickly moved him toward support of the Copernican theory. In the Sunspot Letters(1613) Galileo forcefully argued for a Copernican understanding of the universe and, by his bombast, alienated much of the scientific community that upheld the Ptolemaic principles, particularly many within the Church. Tact and diplomacy were never Galileo's strong points, and his acerbic personality, particularly in scientific debate, made him few friends. His personality would be of little help when his views came under question.

There were many who believed that embracing the Copernican theory was tantamount to heresy and charges of such began to swirl around Galileo. Galileo considered heresy "more abhorrent than death itself"15 and was quick to defend himself. Unfortunately, Galileo would not bow to the temper of his times. Instead of keeping the debate on a theoretical plane involving mathematics, astronomy and observation, Galileo would enter the uncharted waters of theology and Scriptural interpretation. He attempted to explain to a student of his, in response to Christina d' Medici, the grand duchess of the Medici family, how the Copernican theory would not contradict the evidence of Scripture. In a long letter he delved into the relationship of science and Scripture. His essential theory – clear to Catholic understanding today – is that while Scripture cannot err, we can err in our understanding of it. Nature cannot contradict the Bible, and if it appears to do so, it is because we do not adequately understand the deeper Biblical interpretation. Reading astronomical interpretations into Bible passages is a fundamental misuse of the Bible. Scripture serves a more important purpose. As it has been said, the Bible teaches one how to go to Heaven, not how the heavens go.

Essentially, Galileo was slipping into trouble on three accounts. First, despite feeble objections to the contrary, he was teaching Copernican theory as fact rather than hypothesis. Second, the popularity of

his writings brought an essentially "philosophical discussion" into the public arena, requiring some sort of Church response. Third, by elevating scientific conjecture to a theological level, he was raising the stakes enormously. Instead of merely philosophical disputation that many in the Church viewed more as an intellectual game, Galileo – an untrained layman – was now lecturing on Scriptural interpretation.

On December 21, 1614, a young Dominican priest denounced Galileo from a Florence pulpit as an enemy of true religion. Though the Dominican was forced to apologize, the issue was out in the open and began to be discussed in the highest circles in Rome. Pope Paul V, uninterested in scientific debates, passed the matter on to the Holy Office to determine if there were doctrinal issues involved. In 1616, Galileo traveled to Rome to defend himself and continued to forcefully write and argue both on the truth of the Copernican hypothesis, and on proper Scriptural interpretation in the light of scientific developments.

Pope Paul V's theologian was the Jesuit Cardinal Robert Bellarmine. Cardinal Bellarmine was a leading figure in the Catholic Counter Reformation. Though he had the sobriquet "hammer of heretics," Cardinal Bellarmine was a calm, educated, reasonable and saintly prelate. (He would be canonized a saint of the Church.) In 1615, Cardinal Bellarmine had addressed the Copernican debate in a nuanced fashion. He stated his personal belief that the Copernican theory was not viable as it defied human reason. However, he found no reason for it not to be treated as a hypothesis. More important, he noted that if the Copernican theory was ever proven – which he doubted could ever be accomplished – then it would be necessary to re-think the interpretation of certain Scriptural passages. It was a vital point that would be forgotten in 1616 and in the trial of Galileo in 1633.16

In February 1616, a council of theological advisors to the pope ruled that it was bad science and quite likely heresy to teach as fact that the sun was at the center of the universe, that the earth is not at the center of the world, and that it moves. Galileo was not personally condemned, but Cardinal Bellarmine was asked to convey the news to him. Cardinal Bellarmine knew and respected Galileo. He met with Galileo, advised him of the panel's ruling, and ordered him to cease defending his theories as fact. He also asked him to avoid any further inroads into discussion of Scriptural interpretation. Galileo agreed.

When the edict was formally announced, however, Galileo's name or his works were never mentioned, nor was the word "heresy" ever employed. This, along with Cardinal Bellarmine's statement to him, led Galileo to believe that he could still consider the theory as a hypothesis, and to hope that the edict might eventually be reversed. In March, he had a private audience with the pope in which, Galileo reported, he was assured of the pontiff's high esteem and protection. The stain of heresy continued to plague Galileo, however, and he requested and received from Cardinal Bellarmine a letter stating that he had not been made to perform penance for his views, nor forced to recant. He was simply informed that the teachings of Copernicus were found to be contrary to Scripture and should not be defended as truth. With that letter in hand, Galileo moved on to other studies.

In 1623, Cardinal Barberini was elected Pope Urban VIII. With the election of his friend and supporter, Galileo assumed that the atmosphere could be ripe for a reversal of the 1616 edict. In 1624 he headed off to Rome again to meet the new pope. Pope Urban had intimated that the 1616 edict would not have been published had he been pope at the time, and took credit for the word "heresy" not appearing in the formal edict.17 Yet, Urban also believed that the Copernican doctrine could never be proven and he was only willing to allow Galileo the right to discuss it as hypothesis, but not as fact. Galileo was encouraged and would proceed over the next six years to write a "dialogue" on the Copernican theory. It would be that book which resulted in Galileo's famous trial.

The Trial of Galileo

On Christmas Eve, 1629, Galileo finished his manuscript and proceeded to secure permission to publish and review by Church censors. An outbreak of bubonic plague, printing set backs and reviews by the censors delayed final publication of the Dialogue until February 1632. The book was received with massive protest. Galileo had so weighted his argument in favor of Copernican theory as truth – and managed to insult the pope's own expressed view that complex matters observed in Nature were to be simply attributed to the mysterious power of God – that a firestorm was inevitable. His scientific enemies were infuriated with Galileo's often snide and ridiculing dismissal of their views. The Dialogue could also certainly be read as a direct challenge to the 1616 edict.

It is important to understand the mindset of Galileo's tribunal judges, most scientists of the day, and theologians. In its simplest terms, the Ptolemaic construct of a motionless earth at the center of the world made perfect sense. It was the cosmology of the times. First, it was logical to the senses. The sun appeared to rise in the east and set in the west. Mankind could not "feel" the motion of the earth, nor could any experiments known prove such a motion so contrary to the senses. Second, the Ptolemaic system was the teaching of the ancients, and confirmed by the greatest minds of the past, including Aristotle, and the present. A learned man knew the ancients, and the ancients remained the fountainhead of scientific knowledge. Finally, and most important, they read certain passages in Scripture that seemed, by their interpretation, to affirm this science. Unlike Cardinal Bellarmine, they never went deeper into the question of the possibility that Galileo's theory could be proven, and that their interpretation of the Scriptural passages – not Scripture itself – could be wrong.

The difficulty that Galileo encountered with Church authorities, then, was that he appeared to attack the veracity of Scripture by teaching Copernican theory as truth, rather than hypothesis. He had no acceptable proof for his belief that the earth revolved around the sun. He had attempted to make such proofs through an argument based on the earth's tides (a scientifically incorrect one) but 17th century science simply was incapable of establishing that the earth did, in fact, orbit the sun.18 And, finally, he appeared to be openly challenging a Church edict to which he had earlier agreed.

Galileo was told to come to Rome to explain himself and publication of his book was suspended. Due to ill health – Galileo was by now 66 years old – he did not arrive in Rome until February 1633. He was allowed to stay in the comforts of the Florentine embassy. It was at this point that a fearful document emerged from the files of Galileo's dossier in 1616. It purported to prove "that Galileo had been officially warned not to discuss Copernicus, ever, in any way at all. And so, when Galileo had come to Urban in 1624, testing the feasibility of treating Copernican theory as hypothetical in a new book, he had in fact been flouting this ruling. Worse, it now appeared he had intentionally duped the trusting Urban by not having had the decency to tell him such a ruling existed. No wonder the pope was furious."19 Galileo's understanding, based on his conversation with Cardinal Bellarmine, was that the topic could be treated hypothetically and he approached Urban in that spirit.

Galileo's trial did not take place before 10 cardinals as it is often pictured. Participants were Galileo, two officials, and a secretary. Galileo's defense was his letter from Cardinal Bellarmine, and the claim that the Dialogue did not, in fact, support the Copernican theory. His first defense was probable. He was certainly not aware of the more restrictive notice in his file and in all likelihood an enemy had placed it there. It is doubtful that Galileo was being duplicitous in his understanding that he could discuss the Copernican theory as hypothesis, or that he had purposely misled the pope. Either would have been out of character for a man who was essentially a loyal son of the Church. His second defense, however, does not stand much scrutiny. The Dialogue was clearly a presentation and defense

of the Copernican hypothesis as truth, though Galileo would certainly respond that he thought of it as scientific truth, not theological truth. In his subsequent meetings with the tribunal, he confessed that ambition and poor writing might have conveyed an intent he did not mean and promised that he would make any correction to the book that was deemed necessary.

Seven of the 10 tribunal cardinals signed a condemnation of Galileo. The condemnation found Galileo "vehemently suspected of heresy" in teaching as truth that the Earth moves and is not the center of the world. He was found guilty in persisting in such teaching when he had been formally warned not to do so in 1616. His book was prohibited, he was ordered confined to formal imprisonment, to publicly renounce his beliefs, and to perform proper penance. Two additional articles – claiming he had fallen away from Catholic practice and that he had obtained an imprimatur for the Dialogue deceitfully – Galileo refused to admit and they were withdrawn. Galileo signed a handwritten confession.

The finding against Galileo was hardly infallible. Though certainly an irate pope had been consulted in the condemnation, the document had little to do with defining doctrine. It was the finding of one canonical office, not a determination by the Church that set out a clear doctrinal interpretation. Rene Descartes, the French philosopher and friend of Galileo, noted the censure was not confirmed by a Council or the pope but "proceeds solely from a committee of cardinals."20 This was disciplinary action, not doctrinal definition in intent. Three of the cardinals avoided signing it altogether. Galileo would continue to have friends and supporters within the Church, including the archbishop of Sienna who would provide him with his residence for part of his "house arrest." At the same time, however, the condemnation was also unjust. Clearly, the Church tribunal had handled a bad situation badly, and the personal umbrage of Pope Urban VIII over being "duped" by Galileo had its impact as well. Galileo's subsequent imprisonment was little more than house arrest at the Florentine embassy and later at the residence of the Archbishop of Sienna and finally at a house in Acetri. While Galileo would continue to conduct important scientific studies – and publish books on those studies – the fact remains that his condemnation was unjust. And even a comfortable imprisonment is still imprisonment. Most of all, Galileo personally suffered by the condemnation that seemed to mean that his faith was lacking and his reputation ruined because of it. The theologians who interrogated him acted outside their competence and confused the literary nature of Scripture with its theological intent.21

Galileo died in 1642 and Pope Urban VIII two years later. In 1741, Pope Benedict XIV granted an imprimatur to the first edition of the complete works of Galileo. In 1757, a new edition of the Index of Forbidden Books allowed works that supported the Copernican theory.

The Myth of Galileo

"There was only one trial of Galileo, although legends – even experts and encyclopedias – often speak of two, erroneously counting Galileo's 1616 encounter with Cardinal Bellarmine as a preliminary trial, leading up to the second, more sustained interrogation of 1633 that left Galileo kneeling before his inquisitors, or in a dungeon by some accounts, or even in chains…There was only one trial of Galileo, and yet it seems there were a thousand – the suppression of science by religion, the defense of individualism against authority, the clash between revolutionary and establishment, the challenge of radical new discoveries to ancient beliefs, the struggle against intolerance for freedom of thought and freedom of speech. No other process in the annals of canon or common law has ricocheted through history with more meanings, more consequences, more conjecture, more regrets."22

Galileo's trial came to mean far more than it did when it actually took place. As his contemporary Descartes realized, it could even be argued that it was a small victory for science. Despite the ire with

Galileo, the earth as the unmoving center of the universe was not set forth as Catholic doctrine infallibly defined, "either by Council or pope." While there is no doubt that Galileo suffered personally, the Church continued to support scientific studies. Prior to and during Galileo's time, as well as after, the Church remained in the forefront of the new sciences. (Part of the reason for Galileo's fall was the animosity his style and beliefs engendered among competitive scientists within the Church, particularly among the Jesuits. While Galileo had been feted by Jesuit scientists early in his career, he had soon locked horns with any number of them, which made him a target for competitive jealousies.)

The Galileo affair soon entered the mythological corpus of Western Protestantism and secularism as symbolizing the Church as anti-intellectual, anti-science and anti-freedom. By the 18th century enlightenment, Galileo provided "unequivocal evidence of the conflict between truth and superstition."23 In the 19th century, "scientism" had become its own religion, much as it lingers today. In an era where intellectuals viewed science and scientific method as the only means to attain truth, Galileo was resurrected and canonized a martyr. "By the second half of the 19th century the condemnation of Galileo had come to be seen in messianic terms. The figure of Galileo took on an almost divine role in the redemption of mankind from the dogmatism of the past….The legend of Galileo came to be considered a central chapter in a long history of warfare between science and religion. Increasingly, this metaphor of warfare served as an important tool for the modern world's understanding of its own history."24

The trial of Galileo is most often portrayed in terms that it clearly was not: Galileo the scientist arguing the supremacy of reason and science over faith; the tribunal judges demanding that reason abjure to faith. The trial was neither. Galileo and the tribunal judges shared a common view that science and the Bible could not stand in contradiction. If there appeared to be a contradiction, such a contradiction resulted from either weak science, or poor interpretation of Scripture. This was clearly understood by Cardinal Bellarmine. The mistakes that were made came from Galileo's own personality and acerbic style, the personal umbrage of the Holy Father, jealous competitive scientists, and tribunal judges who erroneously believed that the universe revolved around a motionless earth and that the Bible confirmed such a belief.

Conclusion

The Galileo case had, of course, been long settled when in 1981 Pope John Paul II asked that a pontifical commission study the Ptolemaic-Copernican controversy of the sixteenth and seventeenth centuries. What was the purpose of revisiting the controversy? As Cardinal Poupard explained in the commission's report to the Holy Father, "It was not a question of conducting a retrial but of undertaking a calm, objective reflection, taking into account the historical and cultural context."25

In his report, Cardinal Poupard briefly summarized the findings. Referring to Cardinal Bellarmine's letter of 1615, if the "orbiting of the Earth around the sun were ever to be demonstrated to be certain, then theologians…would have to review biblical passages apparently opposed to the Copernican theories so as to avoid asserting the error of opinions proven to be true." The difficulty in 1616 – and 1633 – was that "Galileo had not succeeded in proving irrefutably the double motion of the Earth…. More than 150 years still had to pass before" such proofs were scientifically established.26

"The philosophical and theological qualifications," Cardinal Poupard concluded, "wrongly granted to the then new theories about the centrality of the sun and the movement of the earth were the result of a transitional situation in the field of astronomical knowledge and of an exegetical confusing regarding cosmology…(T)heologians…failed to grasp the profound, non-literal meaning of the Scriptures when

they describe the physical structure of the created universe. This led them unduly to transpose a question of factual observation into the realm of faith."27

In his response to these conclusions, Pope John Paul II reminded the audience that in the relationship of science and religion "the distinction between the two realms of knowledge ought not to be understood as opposition…. Humanity has before it two modes of development. The first involves culture, scientific research and technology, that is to say, whatever falls within the horizontal aspect of man and creation, which is growing at an impressive rate. In order that this progress should not remain completely external to man, it presupposes a simultaneous raising of conscience as well as its actuation. The second mode of development involves what is deepest in the human being when, transcending the world and transcending himself, man turns toward the One who is the Creator of all. It is only this vertical direction that can give full meaning to man's being and action because it situates him in relation to his origin and end…The scientist who is conscious of this twofold development and takes it into account contributes to the restoration of harmony."28

If there is a war between science and religion, it is not a battle based on any denial from the Church of the need for scientific progress. Rather, it is a philosophy of science that has adopted "scientism," a "religion of science" that scornfully disregards faith. It is far more common today for science to declare war on faith, than faith to object in any way to true science and its search for truth. "I am in favor of a dialogue between science and religion, but not a constructive dialogue. One of the great achievements of science has been, if not to make it impossible for intelligent people to be religious, then at least to make it possible for them not to be religious…(G)ood people can behave well and bad people can do evil; but for good people to do evil – that takes religion."29 Thus spoke Steven Weinberg, Nobel Prize winner for his work on the theory of particles and fields. His sentiments would have horrified Galileo.

SUMMARY POINTS

*The trial of Galileo in 1633 has been an anti-Catholic bludgeon aimed at the Church. Galileo has become an all-encompassing trump card, played whether the discussion is over science, abortion, gay rights, legalized pornography, or simply as a legitimate reason for anti-Catholicism itself.

*The myth of Galileo is more important than the actual events that surrounded him. Galileo represents the myth of the Church at war with science and enlightened thought.

*Most of the early scientific progress in astronomy was rooted in the Church. Galileo would attempt to prove the theories of a Catholic priest who had died 20 years before Galileo was born, Nicholas Copernicus. Copernicus argued for an earth that orbited the sun, rather than a fixed earth at the center of the cosmos.

*Copernicus died in 1543 and the Church raised no objections to his revolutionary hypothesis as long as it was presented as theory. The difficulty that both the Church – and the leading Protestant reformers – had with the theory is that it was perceived as not only contradicting common sense, but Scripture as well.

*The myth we have of Galileo is that of a renegade who scoffed at the Bible and drew fire from a Church blind to reason. In fact, he remained a good Catholic who believed in the power of prayer and endeavored always to conform his duty as a scientist with the destiny of his soul.

*In 1615, Cardinal Robert Bellarmine noted that if the Copernican theory was ever proven then it

would be necessary to re-think the interpretation of certain Scriptural passages.

*In February 1616, a council of theological advisors to the pope ruled that it was bad science and quite likely contrary to faith to teach as fact that the sun was at the center of the universe, that the earth is not at the center of the world, and that it moves. *Galileo's name or his works were never mentioned in the edict, nor was the word "heresy" ever employed. This led Galileo to believe that he could still consider the Copernican theory as hypothesis.

*Galileo met with Pope Urban VIII and believed he had permission to re-visit the Copernican debate.

*In 1632, Galileo published the Dialogue. The Dialogue could be read as a direct challenge to the 1616 edict, as it forcefully argued the truth of the Copernican system. It was greeted with skepticism from the Church and the scientific community of the day.

*In his trial in 1633, Galileo was found "vehemently suspected of heresy" in teaching as truth that the earth moves and is not the center of the world. He was found guilty in persisting in such teaching when he had been formally warned not to do so in 1616. His book was prohibited, he was ordered confined to formal imprisonment, to publicly renounce his beliefs, and to perform proper penance.

*The finding against Galileo was hardly infallible. The condemnation had little to do with defining doctrine. It was the finding of one canonical office, not a determination by the Church, that set out a clear doctrinal interpretation.

*While Galileo would continue to conduct important scientific studies – and publish books on those studies – the fact remains that his condemnation was unjust. The theologians who interrogated him acted outside their competence and confused the literary nature of Scripture with its theological intent.

*Galileo died in 1642. In the 19th century, "scientism" became its own religion. In an era where intellectuals viewed science and scientific method as the only means to attain truth, Galileo was resurrected and canonized a martyr.

*The trial of Galileo is most often portrayed in terms that it clearly was not: Galileo the scientist arguing the supremacy of reason and science over faith; the tribunal judges demanding that reason abjure to faith. The trial was neither. Galileo and the tribunal judges shared the view that science and the Bible could not stand in contradiction.

*The mistakes that were made in the trial came from Galileo's own personality and acerbic style, the personal umbrage of Pope Urban VIII who believed Galileo had duped him, jealous competitive scientists, and tribunal judges who erroneously believed that the universe revolved around a motionless earth and that the Bible confirmed such a belief.

*Galileo had not succeeded in proving the double motion of the Earth. More than 150 years still had to pass before such proofs were scientifically established.

*"Theologians…failed to grasp the profound, non-literal meaning of the Scriptures when they describe the physical structure of the created universe. This led them unduly to transpose a question of factual observation into the realm of faith." (Cardinal Paul Poupard in his presentation to Pope John Paul II on the results of the papal-requested Pontifical Academy study of the Galileo trial.)

*If there is a war between science and religion, it is not a battle based on any denial from the Church of the need for scientific progress. Rather, it is from certain segments of the scientific community that have adopted a religion of science that scornfully disregards religious faith. It is far more common today for certain scientists to declare war on faith, than faith to object to science and its search for truth.

FOOTNOTES

1Origins v.22, n 22, 374-375 Galileo: Report on Papal Commission Findings, Cardinal Poupard

2(Ibid. No. 5)

3Catholic League for Religious and Civil Rights, Annual Report (1999). Citation of letter published in the New York Daily News, October 15, 1999: "Frankly, the Catholic Church needs to be bashed! Lest we forget, these are the folks who brought you the Crusades, the Inquisition, the trial of Galileo…."

4Galileo's Daughter, Dava Sobel (Walker & Company, New York, NY, 1999)

5 This famous declaration of Galileo first was attributed to him a little over a century after his trial by a French writer.

6For biographical information on Galileo, the best current resource is Sobel's Galileo's Daughter. See above.

7The Thirty Years War, C.V. Wedgwood (Random House, 1938; Book of the Month Club edition, 1995)

8The Renaissance, Will Durant (Simon & Schuster, 1953; Easton Press edition, 1992) p. 728

9The Age of Reason Begins, Will and Ariel Durant (Simon & Schuster, 1961; Easton Press Edition, 1992) p. 594

10Sobel, p. 5

11Joshua 10: 12-13; Psalm 93: 1

12Sobel, p. 5

13Ibid, p. 11

14Ibid, p. 12

15Ibid, p. 60

16Origins, Cardinal Poupard, No. 2

17Sobel, p. 137

18It would not be until 1851, over 200 years later, that the rotation of the earth was scientifically verified.

19Sobel, p. 235

20Cited in Sobel, p. 286

21Lessons of the Galileo Case, Pope John Paul II Address to the Pontifical Academy of Science, October 31, 1992. No. 2

22Sobel, pp. 231-232

23Catholic Dossier, July-August, 1995. "The Legend of Galileo: The Warfare Between Science and Religion," William A. Carroll, p. 16. (It is one of the ironies of our own time that the Church is now portrayed as "unenlightened" because it teaches that there are universal truths that can be known.)

24Ibid. p. 16

25Origins, Cardinal Poupard, No. 1

26Ibid, No. 3

27Ibid, No. 5

28Pope John Paul II, No. 14

29Cited in First Things, February 2000, p. 92