



The Galileo Affair

Jeremy Miller, O.P.

By 1564, the year of Galileo's birth, Aristotelian philosophy had lost much of its former vitality. It still held sway, nevertheless, in many university circles, although a vast majority of its proponents gave themselves to pedantic quibblings over minutiae and to a hol-

low mouthing of the Stagirite's thought. The astronomy of the day was Ptolemaic, for this squared with Aristotle's earth-centered universe; its virtue lay in that it 'saved the appearances'. But Ptolemy's universe was about to be reshuffled, and Galileo was to have a hand in it.

More than twenty years earlier, in 1543, Nicholas Copernicus had published his *De Revolutionibus Orbium Caelestium* and dedicated it to Pope Paul III. Arguing from the greater of two probabilities, Copernicus opted for a heliocentric world with the earth and the other known planets orbiting the sun in concentric circles. Couched behind a protecting hypothetical preface—covertly inserted by Andreas Osiander to avoid brewing a religious storm—the Copernican world view was greeted, certainly not with outright acceptance, but at least with interest.

In such a milieu Galileo grew up. He spent part of his early life at the University of Pisa studying mathematics and the physical sciences. This led to a teaching position in mathematics at the same university in 1589. He began basing some lectures on his own experiments in mechanics which contradicted Aristotelian positions; disputes with the faculty quickly arose, stoked up still further by Galileo's biting sarcasm. He left Pisa shortly afterward and took a chair of mathematics at the University of Padua. It was here that he avidly took up Copernicus' heliocentric theory, and it was here that he constructed the telescope revealing the moons of Jupiter. This discovery was important, for it deflated the objection against Copernicanism that if the earth orbited through space it would leave its moon behind; here was Jupiter, whose motion was common knowledge, carrying four moons along with it as it swept through space.

With a flourish, Galileo announced his discoveries in *Siderius Nuntius*, together with the news that the moon's surface was pock-marked with irregularities and not the perfect heavenly body his fellow professors reckoned it. *Siderius Nuntius* brought Galileo fame—and trouble. Copernicus' theory became something more than a mere hypothesis to Galileo, in spite of the Scripture texts the Peripatetics fell back on to buttress their argument for an earth-centered universe. From this time on, around 1610, an increasingly rancorous relationship swelled up between Galileo and the Peripatetics; his astronomical discoveries were undermining everything they doggedly stood for.

The university Aristotelians took a new approach; they tried to

impugn Galileo's orthodoxy. But Galileo continued to state his views with as much aplomb as ever. It became popular sport to argue the merits of a literal rendering of certain Scriptural texts as against the Copernican theory—though it must be said that in Galileo's mouth the theory took on stronger tones than mere hypothesis. People were sharply divided. Still, Galileo was lionized by some Roman cardinals; and befriended by such esteemed company, he felt all the more confident in his ideas. But he went one step farther; he entered the theological realm by trying to reconcile Copernicanism with Scripture.

The *Letter to Castelli* was the result,¹ and it triggered his conflict with the Church. The dispute was now in the open; the Dominican Caccini attacked him sharply from a Florentine pulpit. In this letter to a disciple of his, Galileo had laid down principles for the harmony between science and Scripture. This only incensed his adversaries the more, for a layman was now lecturing to them. Cardinal Bellarmine kept the coolest head. In a letter to the Carmelite Provincial, Foscarini, dated May 12, 1615, the Cardinal remarked that he and Galileo would do well "to speak *ex suppositione* and not in absolute terms."² He also felt that if and when a demonstration could be brought forth for the heliocentric theory, one would have to admit that he did not understand the Scriptures in certain places rather than deny the scientific fact. Galileo's Castelli letter was put before the Holy Office by a Dominican named Lorini but found innocent enough.

Had Galileo now let well enough alone and merely taught Copernicanism as a hypothesis, matters would have rested there. But he felt compelled to argue his case and push the Church into a decision on the "new theory"—a commendable step if he could come up with a demonstration as Bellarmine asked. He could not, but he still pressed his opinions boldly. While the controversy was raging over *Siderius Nuntius*, Galileo discovered sunspots. A little later, a minor controversy arose with the Jesuit astronomer Scheiner as to who had discovered sunspots first. This prompted Galileo to write *Letters on Sunspots*, in which he committed himself to Copernicanism.

¹ See F. R. Wegg-Prosser, "Il dialogo di Galileo Galilei Linceo," *American Catholic Quarterly Review*, XXVI (1901), 269.

² F. Sherwood Taylor, *Galileo and the Freedom of Thought* (Library of Science and Culture), London (Watts and Co., 1938), p. 90.

On November 13, 1615, Fr. Ferdinand Ximenes denounced *Letters on Sunspots* to the Florence Inquisition. Two representative propositions were formulated and sent to the Qualificators of the Holy Office in Rome. The following February 24 they decided:

First: The sun is the center of the world, and altogether immovable as to local movement.

Censure: All have said that the said proposition is foolish and absurd in philosophy, and formally heretical, inasmuch as it expressly contradicts the opinions of the Holy Scriptures in many places according to the proper sense of the words. . . .

Second: The earth is not the center of the world and is not immovable, but moves as a whole, also with a diurnal motion.

Censure: All have said that this proposition must receive condemnation in philosophy; and with respect to theological truth it is at least erroneous in faith.³

This was signed by the eleven Qualificators. Although Pope Paul IV did not sign he certainly accepted the decision, since he directed Bellarmine to admonish Galileo to abandon his opinions, and should he refuse, then:

the Commissary [of the Holy Office] is to enjoin on him before a notary and witnesses, a command to abstain altogether from teaching or defending this opinion and doctrine and even from discussing it; and, if he does not acquiesce therein, that he is to be imprisoned.⁴

Thus reads the Inquisition file report of Thursday, February 25, 1616.

What follows is crucial yet very mysterious. The Inquisition file report for the very next day states that the Commissary-General, Michelangelo Segizi, O.P., *did command* Galileo not "to hold, teach, or defend it [Copernicanism] *in any way whatsoever*, verbally or in writing; . . . which injunction the said Galileo acquiesced in."⁵ The authenticity of this February 26 file report has been a subject of much dispute. It was awkwardly arranged among the records and not filled out in proper form. Was it never issued to Galileo but later slipped into the files? Assuming that Galileo offered no resistance to Bellarmine, was it issued unnecessarily by Segizi overstepping his bounds? Or did it have to be issued to a recalcitrant Galileo? ⁶ What-

³ *Ibid.*, pp. 91-92.

⁴ Quoted by Georgio de Santillana, *The Crime of Galileo* (Chicago: University of Chicago Press, 1955), p. 122.

⁵ *Ibid.*, p. 126 (emphasis added by the present author).

⁶ For a fuller account and analysis, see Jerome Langford, *Galileo, the Church and Science*, soon to be published by Mentor-Omega Books (The New American Library).

ever the story, the mysterious injunction was never made public. All we know is that on March 3, Ballarmine reported to the next meeting of the Congregation of the Inquisition that Galileo had submitted (*acquievit*).

On March 5, 1616, the Congregation of the Index publicly decreed that the heliocentric theory was "false and altogether opposed to the Holy Scripture" and prohibited all books espousing it.⁷ Galileo was never mentioned, although other authors were.

Not long afterward, calumnies against Galileo's character began to circulate concerning his supposed abjuration, and he went to Bellarmine for a written statement he could use to defend his integrity. Bellarmine, in a letter dated May 26, 1616, formally denied that Galileo *abjured* any opinion or was punished; Galileo, he merely stated, was informed that the Copernican theory was "contrary to the Holy Scriptures and therefore cannot be defended or held." There is no mention of an injunction.⁸

Galileo went back to Florence and a quiet existence. In 1623 Maffeo Cardinal Barberini, and old friend of Galileo who had opposed the decree of 1616, was elected Pope as Urban VIII. Returning to Rome, Galileo was warmly received by Urban and discussed the decree with him. Urban adamantly refused to revoke the decree but allowed Galileo to write of these matters provided he keep his tone clearly hypothetical.

Encouraged, Galileo labored until 1630 on "a most ample confirmation of the Copernican system."⁹ What resulted—the *Dialogue on the Great World Systems*—went beyond hypothesis. Galileo sought permission from Niccolò Riccardi, the Master of the Sacred Palace, to publish it. Riccardi was skeptical, then agreed provided certain passages were reworked. Galileo returned to Florence to do it. When hints of intrigue appeared he attempted to have the *Dialogue* published immediately, and from Florence. Riccardi hedged, then agreed to turn the matter over to the Inquisitor of Florence on condition that his own recommendations would be embodied.

Its publication in 1632 caused an uproar, especially among those with a vested interest in Aristotelianism. When the pope heard of the somewhat shady dealings to obtain an *Imprimatur*, as well as the

⁷ De Santillana, *op. cit.*, p. 123.

⁸ *Ibid.*, p. 132.

⁹ *Ibid.*, p. 173.

non-hypothetical character of the work, he ordered publication ceased. He then appointed a three-man commission to examine the whole affair. Their verdict was that (1) Galileo had treated Copernicanism not as an hypothesis but as a fact, and (2) Galileo had violated the unpublicized injunction of 1616 forbidding him to treat of the Copernican theory in any way.¹⁰ This letter came as news to Urban and Riccardi, who evidently knew nothing of the injunction.

Tempers were piqued. Galileo had long before alienated the Jesuits with his scathing attacks against their philosophers. Then, too, the Pope saw himself caricatured in the *Dialogue* as portrayed by Simplicio, a simpleton holding Aristotelian views and offering the same positions he himself had expressed to Galileo years before. So Galileo was arraigned before the Roman Inquisition, charged with violating "Bellarmine's injunction" of 1616. The unfortunately ambiguous wording in the charge, "Bellarmine's injunction," could either be erroneously referring to Segizi's injunction or be reflecting the three commissioners' opinion that the *Dialogue* violated Bellarmine's oral admonition "not to defend or hold."

Galileo, now approaching seventy, pleaded that Bellarmine had only forbidden him to hold or defend the theory but had not restrained him from "teaching it in any way whatsoever." (When summoned to trial, Galileo was never informed of the existence of Segizi's injunction—the trump card of the Inquisitors—but was told merely that he had violated "Bellarmine's injunction.") However, the three court examiners said that a careful reading of the *Dialogue* clearly showed that heliocentrism was not only proposed; it was also held and defended. When asked what opinion he in fact held, and what his intentions had been in writing the *Dialogue*, the elderly man said that since 1616 he had held for the Ptolemaic universe and quite intended to make the Copernican arguments appear feeble. The sincerity of this could be questioned; to mollify was, obviously, a wise move. As to the threats of torture invoked late in the proceedings, they appear to have been just that—threats, never really meant to be implemented.

¹⁰ Wegg-Prosser, *op. cit.*, p. 453. The authenticity of this controverted injunction of February 26 is crucial; it poses a more stringent obedience than Bellarmine's oral admonition which was duly recorded and filed under February 25.

On June 22, 1633, in the Dominican Convent of the Minerva, the following verdict was given:

We declare . . . you have rendered yourself . . . vehemently suspected of heresy—namely, of having believed and held the doctrine—which is false and contrary to the sacred and divine Scriptures—that the sun is the center of the world and does not move . . . that the earth moves and is not the center of the world; and that an opinion may be held and defended as probable after it has been declared and defined to be contrary to the Holy Scriptures.¹¹

Galileo thereupon abjured the Copernican theory, and the censures annexed to the charges were commuted. He was released into the custody of Niccolini, the Florentine ambassador, and given the Penitential Psalms to say weekly for three years. He devoted his remaining years to the study of mechanics, wherein he was to make his true and lasting contributions to science.

Concluding Observations

Many have seen in Galileo's condemnation a refutation of papal infallibility. If this were so, one would have to show that a papal *ex cathedra* declaration, proclaimed in an absolute and irreformable manner, were involved. In point of fact, none is.

If such a dogma had been involved, would Bellarmine have taken the position he did on Copernicanism, namely, that if it could be demonstrated we would have to admit we did not understand the Scriptures in certain places? Then there is the letter of Urban VIII to Cardinal di Zoller in which he states: ". . . the Holy Church had not condemned the opinion of Copernicus nor was it condemned as heretical, but only as rash; and, moreover, if anyone could demonstrate it to be necessarily true, it would no longer be rash."¹² Gassendi, writing in 1640, said that he knew it not to be a matter of faith that the earth was at rest, as the Cardinals said at that time. There are numerous other witnesses to show that the decrees of 1616 and 1633 could have hardly been *ex cathedra* statements.

Secondly, Galileo advanced his views in most undiplomatic ways; he had a very dogmatic and sarcastic pen. Remember that Catholic countries were sensitive to arbitrary interpretations of Scripture, and that unproven scientific propositions—true as they could have been—

¹¹ Taylor, *op. cit.*, p. 167.

¹² *Ibid.*, p. 109.

calling for a reinterpretation of classically understood Scripture texts were not without danger. Did Galileo have a demonstration? Laplace answered for the scientific world: No.

All too often, and this has only added misery to misfortune, Church apologists have striven to put Galileo in an unfavorable light and play down the uneasy features of the condemnation. The Galileo affair was not a question of papal infallibility, and one should have the intellectual integrity to admit readily that the Holy Office Qualificators of 1616 erred in calling the heliocentric theory "formally heretical." Considerations could be advanced which would set the decision in an understandable perspective, but objectively speaking it remains erroneous.

A more urgent consideration suggests itself, however. Admit the mistake, yes, but more important, learn from it. Learn that theology and science, when most true to themselves, are never at variance. The Scriptures are difficult enough to understand; if the theologian closes his eyes to the scientific world, as did the pious Aristotelian professor who refused on principle to look into Galileo's telescope, he will effectively blot out from view many means to aid him in penetrating the Scriptures. A dialogue between religion and science must be encouraged, for the betterment of both.

Even during the Galileo affair, one courageous Dominican had the foresight to perceive this. Tommaso Campanella, standing practically alone among his confreres, made the following observation:

I must confess I do not understand how destruction of the authority of Holy Scripture will result from the doctrines of Galileo. On the contrary . . . to inquire is to find riches. . . . It is unnecessary that the investigations of Galileo be suppressed, a misfortune that is about to occur. Our enemies will seize eagerly on this action and proclaim it abroad.¹³

Let it never be proclaimed abroad again that the Church refuses dialogue with science. As Pope Pius XI has been quoted as saying, "One Galileo case is enough." Instead, let the proclamation be: "To inquire is to find riches."

¹³ Tommaso Campanella, *Apologia pro Galileo*, trans. by Grant McColley, *Smith College Studies in History*, 22 (April-July, 1937), pp. 71, 74-75.