

Ernan McMullin, ed. *The Church and Galileo*.

Studies in Science and the Humanities from the Reilly Center for Science, Technology, and Values. Notre Dame: University of Notre Dame Press, 2005. xiv + 392 pp. index. illus. map. bibl. \$60 (cl), \$30 (pbk). ISBN: 0-268-03483-4 (cl), 0-268-03484-2 (pbk).

Maurice A. Finocchiaro, ed. and trans. *Retrying Galileo, 1633–1992*.

Berkeley: University of California Press, 2005. xii + 486 pp. index. bibl. \$50. ISBN: 0-520-24261-0.

Stéphane Garc a. * lie Diodati et Galil e: Naissance d'un r seau scientifique dans l'Europe du XVII^e si cle*.

Biblioth que d'Histoire des Sciences 6. Florence: Leo S. Olschki, 2004. xx + 446 pp. index. append. illus. tpls. map. chron. bibl.  46. ISBN: 88-222-5416-3.

In 1979 the newly-elected Pope John Paul II expressed the hope that theologians and scholars would reexamine the famous trial of Galileo. He seemed to say that Galileo had, after all, suffered unfairly at the hands of the Church and that a careful reassessment of the record would dispel a number of important cultural myths which had grown up around the trial — for example, that the Church had opposed scientific progress and the free search for truth. The Galileo Commission was convened in 1981, met sporadically over several years, and issued a final report in 1992. In 1979, the pope had argued that Church authorities — in 1616 and 1633 — had not been bold enough in their pastoral duties to see that they were going too far in silencing Galileo. Key participants and outside observers were disappointed with the final report because the Commission backed away from the earnest beginnings of John Paul and returned instead to recognizably nineteenth-century apologies and justifications of the trial.

In spite of this, however, the learned community is satisfied that the commission provided access to all the surviving records of the trial, and the initiative has encouraged significant new research on the Galileo affair and its aftermath. Three recently published books examine the trial and its cultural history and legacy in view of these latest developments and offer some assessment of the commission.

The Church and Galileo grew out of a major conference held at Notre Dame University in 2002. This excellent collection of essays edited by Ernan McMullin offers many valuable insights into various dimensions of the Church's response to Galileo and Copernicus in 1616 and 1632–33, and again in 1992. The authors discuss problems of seventeenth-century exegesis, bureaucratic operation, and trial procedures. There are also good discussions of the intentions of John Paul and the Galileo Commission.

Meanwhile, Maurice Finocchiaro has taken an original and ambitious approach to the study of the development of the myths surrounding the trial in *Retrying Galileo 1633–1992*. He has examined the most significant incidents and documents that together constitute the general cultural reactions to the trial over three-and-a-half centuries, and has included extensive transcriptions of many otherwise inaccessible texts and commentary. This history does clarify the underpinnings of recent views of the trial and the relations between the Church and Galileo.

In *Élie Diodati et Galilée: Naissance d'un réseau scientifique dans l'Europe du XVII^e siècle*, Stéphane Garcia has written a detailed biography of the friend and correspondent of Galileo who oversaw the translation and publication of the *Dialogue on the Two Chief World Systems* as *Systema cosmicum* in 1635, and the *Letter to the Grand Duchess Christina* in 1636. Garcia also gives us a rather intimate view of the character, activities, and reactions of Europe's network of savants in the immediate aftermath of the trial.

The Church and Galileo takes the closest look at the trial itself and all the circumstances surrounding it. The thirteen contributors are alert to the problems and dilemmas perceived by Church theologians and authorities and equally sensitive to their agendas.

Michel-Pierre Lerner first gives us a useful study of the reactions of Church theologians to *De Revolutionibus*, between 1543 and its condemnation in 1616. Lerner finds that three theologians — Tolosani, Clavius, and de Zuñiga — examined *De Revolutionibus* and all agreed that Copernican opinions had been refuted by the ancients, were absurd in philosophy, and were contrary to Scripture and the Church Fathers, but none condemned him. Then, after 1610, three Jesuits — de Pineda, Lorinus, and Serarius — became increasingly hostile as they insisted on the authority of Scripture and suggested that Copernican views were heretical. Lerner finally looks at the three defenses by Galileo, Campanella, and Foscarini and outlines the negative response of Cardinal Bellarmine and the Church authorities.

Why were the Jesuits so implacable on Copernicus before the condemnation of 1616? Irving Kelter tells us they were concerned with the literal and figurative interpretations of passages in Ecclesiastes and the Psalms, but generally not with physical objections to the earth's motion. Kelter speculates that this inflexibility stemmed from institutional Jesuit calls for solid and uniform doctrine — Aristotelian in philosophy and Thomist in theology — but he also argues that the Jesuits were reacting to conflicts between theology and philosophy over authority in cosmology and natural philosophy.

Michael Shank gives us a nice account of the intellectual life of Cardinal Maffeo Barberini, a friend of Galileo who became Urban VIII and then the driving force behind Galileo's trial in 1632. Urban was a traditional voluntarist in philosophy and preferred Osiander's instrumentalism in astronomy. Urban was deeply involved in astrology and in the early 1630s engaged in astrological magic with Campanella, when discomfited by Spanish-inspired astrological intrigues. Galileo blundered into a highly-charged environment when he defended Copernicus and failed to explicitly follow Urban's advice in the *Dialogues*.

Ernan McMullin discusses the basics of biblical exegesis according to Augustine and comments on the theological strategies of Galileo and Foscarini. McMullin explains that Augustine had outlined relevant principles of exegesis to deal with the problematic language of Genesis: the Holy Spirit did accommodate language to the understanding of the people being addressed, there could be no conflict between faith and reason, the business of Scripture was salvation not

philosophy, and interpretations should not expose Scripture to ridicule. In a related article, McMullin assesses the condemnation of Copernicus in 1616 and concludes that Bellarmine bears much of the responsibility. He had been a professor of astronomy in his early career, but, unlike most Jesuits, was strongly anti-Aristotelian and preferred to appeal to Scripture for proofs in cosmology. He therefore believed there would never be a convincing demonstration of Copernicus's ideas and acted to quell the efforts of Foscarini and Galileo.

Annibale Fantoli studies the import of the two versions of the injunction that Paul V and the Church served upon Galileo through Bellarmine in 1616. Bellarmine gave Galileo a letter recounting the warning that prohibited the defense of Copernicus but not discussion. The presence of a harsher version of the injunction in the record in 1632 is attributed to the intervention of the Father Commissary Segizzi in 1616. Fantoli examines this in detail and provides useful insights into Vatican legal procedures, but concludes that the injunctions had no decisive influence on the trial.

Francesco Beretta examines the documentary record that emerged from the Vatican archives as a result of the Galileo Commission. External evidence and internal clues lead him to conclude that the record is complete and "no revolutionary new documents will be forthcoming" (204). In a second article, Beretta notes points of comparison between the cases of Galileo and his colleague Cremonini, who was accused of denying the immortality of the soul. Beretta points out that both were condemned for failing to strongly refute the heretical positions they discussed and that this is reflected in trial documents.

Mariano Artigas, Rafael Martinez, and William R. Shea consider whether other, non-Copernican factors might have influenced the trial, especially the issue of atomism. They concur with recent refutations of Pietro Redondi's views and focus on recently revealed documents they attribute to the Jesuit Melchior Inchofer, who was asked by Inquisitors to consider whether passages in Galileo's *Assayer* exposed the astronomer to charges of heresy. Inchofer believed that Galileo might be liable, but the Inquisitors apparently decided that the charge would be more difficult to maintain and put it aside.

Stéphane Garcia contributes an account of Galileo's relapse in his collaboration with Diodati to publish the *Two Chief World Systems* and the *Letter to the Grand Duchess Christina*, and affirms that Galileo did try to work around the constraints the Church had placed on him. John Heilbron outlines events over the 150 years following the trial, noticing first the efforts, up to 1670, to enforce the condemnation and the search for heresies among Catholic writers. After 1670, matters turned in the other direction, and the Church began its long holding action of face-saving formulae and apologetics. Michael Sharrat and George Coyne each reflect on the dialogue between science and religion and assess the success of the Galileo Commission. Both welcomed the Commission, but suggest the outcome fell short of what was needed to dispel the myths surrounding the trial.

Retrying Galileo 1633–1992 is a good complement to *The Church and Galileo*. Finocchiaro shows that all the myths that grew up around the trial of Galileo

took shape after the event in a long succession of retrials up to the present day. Finocchiaro reproduces the corrections made to *De Revolutionibus* and many versions of the official announcements of Galileo's abjuration propagated around Europe after 1633. He traces the efforts of Descartes to ascertain the meaning of the trial for his manuscript, *Le Monde*, and reviews the anti-Copernican and anti-Galilean efforts of Inchofer and Riccioli, among others. There are interesting surprises: the claim that Urban was angry, in 1632, because his own position was stated by Simplicio has no basis in fact. The story was first suggested a few years after the trial, at which time an exchange of letters between Galileo's friends and authorities near the pope offered the reassurance that no offense had been taken — yet the story continues to circulate today. The retrials increasingly became defenses of the Church's actions as the elements of geokineticism and heliocentrism were confirmed and the Church relaxed its grip on astronomy and cosmology. There is an extensive treatment of the official removal of the ban on Copernicus during the Settele affair (1820), of the work of Wohlwill, Duhem, Gemelli, Brecht, Koestler, Paschini, and, finally, of the Galileo Commission. Finocchiaro says that the commission became increasingly anti-Galilean and suspects that John Paul distanced himself from its final report in his summary address. All in all, *Retrying Galileo* is a gold mine for the historiography of the trial.

Stéphane Garcia's *Élie Diodati et Galilée* is a welcome treatment of the intellectual life of savants outside the official circles of the Church in the first half of the seventeenth century. Diodati, son of an important Italian-Swiss Calvinist family, served as a diplomat for the government of France and traveled in Germany, Italy, France, Holland, and England. Garcia describes Diodati's commitment to the new philosophy and his pivotal recognition of the importance of contact and correspondence and the role of the discreet intermediary in strengthening and deepening the level of philosophical discussion. Diodati personally met with a large number of geographically scattered scholars and philosophers who pursued a surprising diversity of interests, and he belonged to informal clubs and societies in Paris that met regularly to promote the same interests. Garcia explores what can be gathered about the activities of these groups and the nature of scientific networks half a century before the birth of the Royal Society in Britain. It becomes clear that the savants believed in the need for freedom to pursue philosophy and, like Galileo, recognized that the Church was committing a fateful error in its condemnation of Copernicus precisely because it restrained the liberty of scientific investigation with questionable literal interpretations of Scripture.

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