Book Review

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Sobel, Dava. *Galileo's Daughter: A Historical Memoir of Science, Faith, and Love.* New York: Walker & Co., 1999. 448 pp. Hardcover. $27.00

Historians of science have affixed a variety of appellations to the name of Galileo Galilei. He has been cast as Galileo the iconoclast, Galileo the vanquisher of Aristotle and champion of Copernicus, and Galileo the mathematician-astronomer. By some, he has been branded Galileo the heretic, and by others, Galileo the humanist. However, a recent book by Dava Sobel succeeds in presenting a side of the man often lost to posterity – the lesser-known story of Galileo the father. Sobel's illuminating biography, *Galileo's Daughter: A Historical Memoir of Science, Faith, and Love,* is structured around Galileo's relationship with his oldest daughter, who lived virtually her entire life as a Catholic nun. Her work chisels through the thick crust of half-truths that have so far obscured Galileo the human, and the unifying strand of the narrative – a daughter's love for her famous father – provides a unique opportunity to criticize the polarizing epithets traditionally appended to Galileo's name.

Although Galileo Galilei never married, he did beget three children by a Venetian woman named Marina Gamba. Contemporary concerns about social compatibility dissuaded the patrician Galileo from wedding his mistress, but he did provide for her welfare, eventually helping arrange her marriage to a gentleman closer to her social station. Throughout his life, Galileo assumed most of the responsibility for fathering their two daughters and one son, but he executed this duty for his first two children by committing them into the hands of the Church. In 1614, Galileo's two daughters, Virginia and Livia, took their vows of claustration into the Convent of San Matteo in Arceteri. In honor of her father's already renowned discoveries of celestial phenomena, the elder Virginia assumed the name Maria Celeste. For the next 20 years until her untimely death, Suor Maria Celeste and her controversial father kept up a vigorous correspondence. Unfortunately, only the daughter's letters have survived to this day; her father's notes were probably destroyed to protect him from incrimination for heresy or to obey the ban eventually placed by the Inquisition on his writings. But the letters of Suor Maria Celeste, which were translated by Sobel, number in excess of 120 separate missives. *Galileo's Daughter* includes only 30 of these without abridgement. They appear at intervals throughout the text, providing a personal background to the story of Galileo's fame and eventual defamation.

There was only one formal trial of Galileo by the Inquisition, but as Sobel notes, "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" (232). The events of 1633 have "ricocheted through history" with the echoes of a hundred different interpretations. Sobel's greatest success in *Galileo's Daughter* is the considerable muting of this great din of debate. Most especially, the biography undercuts the prevailing belief that Galileo's recantation was caused by an intractable clash between science and religion. As Stephen Jay Gould has noted, this vision of Galileo pitching his tent versus Pope Urban VIII "continues to dominate our cultural landscape as a primary symbol, almost automatically triggered whenever anyone contemplates the relationship of science and Catholicism." Sobel mitigates what Gould calls "the cardboard and anachronistic account that views Galileo as a modern scientist fighting the entrenched dogmatism of a church."[1]

In the first place, *Galileo's Daughter* reveals that Galileo's conflict was more with individual churchmen than it was with the church. In fact, many men of cloth – including archbishops and cardinals – were supporters of the Florentine professor. Ascanio Piccolomini, the archbishop of Siena and a fellow Tuscan, even hosted the scientist as his guest of honor while the Holy Office of the Inquisition detained him. He also vehemently protested to the pope and others about the aging Galileo's treatment. Indeed, it was the church's apparent and long-standing consent to Galileo's work that made his arrest so bewildering to him. Although a Vatican commission had passed an edict in 1616 declaring the Copernican system a heresy, Galileo had not been completely muzzled by the Church. Sobel emphasizes that Galileo was only ordered by the edict to present his views as strictly hypothetical. The Church in 1616 had little problem with Galileo as long as the sun-centered model was treated *ex hypothesi* rather than as fact (a provision that interestingly presaged modern evangelical tolerance for the teaching of Darwinism as an unproven theory). In fact, Maffeo Cardinal Barberini – who became Pope Urban VIII in 1623 – was originally included among Galileo's admirers. Sobel reports that excerpts of his books were read to the pope approvingly at dinner, and in 1624, Galileo received a week-long papal audience to discuss the closeness of his philosophy of science to Urban's own views. *The Assayer*, one of Galileo's early books, was dedicated to the pope – his alleged arch-nemesis.

Before addressing why many clergymen changed their minds about Galileo, Sobel shows that their reconsideration could not have been prompted by irreligious defiance. On the contrary, Galileo was a pious Catholic who responded submissively to the 1616 edict. According to Sobel, he once confided to a friend that he thought the crime of heresy was "more abhorrent than death itself" (60). Upon finishing his now classic *Dialogue on Two Systems*, Galileo obediently submitted it to Church censors for approval and dutifully made required corrections. In 1618, responding to a request from the Austrian archduke for a sample of his work, Galileo wrote, "Knowing as I do that it behooves us to obey the decisions of the authorities and to believe them, since they are guided by a higher insight than any to which my humble mind can of itself attain, I consider this treatise which I send you to be merely a poetical conceit" (82-83). It may be tempting to think such comments were disingenuous or sarcastic – Galileo's inquisitors certainly thought he was dissembling when he claimed his intention was to show the inconclusiveness of the Copernican worldview. However, it would be too simplistic to reduce Galileo's motives to rebelliousness. His inner struggle was more complicated than the myth that he punctuated

a half-hearted abjuration with the obstinate whisper, "Yet it [the earth] still moves." "Galileo did not lie under oath," Sobel argues. "He was a Catholic who had come to believe something Catholics were forbidden to believe. Rather than break with the Church, he had tried to hold – and at the same time not to hold – this problematic hypothesis, the image of the mobile Earth" (253-254).

Perhaps the most compelling proof that he did not "break with the Church" is the book's namesake – Galileo's daughter. As a Poor Clare – an order of nuns founded by the first female disciple of St. Francis of Assisi – Suor Maria Celeste was a corporeal spiritual presence in Galileo's life. The fact that Galileo committed her to a convent even as he was making his first telescopic discoveries disconfirms any personal disdain for the Church, and the affection which he came to feel for his daughter disproves any development of dislike for the religious. Maria Celeste's letters are full of pious injunctions to her father, given in full confidence that he believed in their force. "My dearest lord father," she wrote just after the *Dialogue* was placed on the Index of Prohibited Books, "now is the time to avail yourself more than ever of that prudence which the Lord God has granted you, bearing these blows with the strength of spirit which your religion, your profession, and your age require" (279).

Suor Maria Celeste's continued support for her father in spite of his indictment further proves false the perception that all good Catholics were opposed to Galileo. There is little evidence that her father's sentence by the Inquisition caused her any cognitive discomfort; her belief in Galileo was as sincere and steadfast as her belief in God. In one letter, she even informs her incarcerated father that she had his papers removed from his house in Arceteri to protect them from the Inquisition's agents (289). This deliberate disregard for the Church's ban on his writings would make no sense if the conventional picture of ubiquitous hostility between science and religion were true.

Indeed, Galileo himself dismissed the ideological necessity of such animus. Sobel demonstrates that Galileo saw no conflict between the Bible and his theories; his hermeneutics – which denied that a strictly literal interpretation of the Bible was theologically important – were years ahead of his time. A literal reading of Holy Writ, argued Galileo early in his career, would make it "necessary to give God hands and feet and eyes" (63). Like other seventeenth-century scientists, Galileo believed God's book of nature was meant to be read as carefully as his book of revelation, since in truth, the latter spoke little of the former. "Surely," Galileo urged, "if the intention of the sacred scribes had been to teach the people astronomy, they would not have passed over the subject so completely" (65). These views, narrated elegantly by Sobel, provide fresh glimpses of inquiry and faith on the eve of the Scientific Revolution. *Galileo's Daughter* is a thrilling example of the new histories of science and religion that encourage Cambridge physicist and theologian John Polkinghorne: "More careful and balanced scholarship enables us today to perceive the complexity of those times, in which scientific and religious thinkers alike wrestled with the difficulties and unresolved problems attendant upon periods of great intellectual change, and when both kinds of participant were to be found on both sides of the argument."[2]

Galileo's Daughter succeeds on many other levels too numerous to list in detail. Sobel's intricate backdrop of seventeenth-century Italy is a delight. She gives a grippingly realistic account of the bubonic plague that swept the northwest part of the country during Galileo's lifetime. Her story also illuminates the complexity of Italian ducal relations and the political intrigues of the papacy during the Thirty Years War. The scientific views of Galileo and his contemporaries – ranging from the motion of the tides to the composition of the body – are plainly elucidated. Most especially, Sobel's profile of Suor Maria Celeste adds much needed data to the growing body of scholarship on women in the early modern period; her intelligence, quiet strength, and close relationship with her father all shed light on what it meant to be female in the 1600s. This biography of Galileo could easily hold its own as a stand-alone history of pre-modern Italy.

All of these features amount to a picture of Galileo that will set the standard high for future studies of the man whom Einstein called the father of modern science. But by raising the bar for Galileo studies, Sobel has also defined the boundaries of further discourse. The lens of his *daughter's* life – like Galileo's famed telescope – will enable modern readers to bring *his* life into sharper focus. Perhaps this improved vision will dispel antiquated notions about Galileo's recantation as a rebellion against religion. For this devout Catholic and father of a nun, nothing could have been farther from the truth.

NOTES

[1] Stephen Jay Gould, *Rocks of Ages: Science and Religion in the Fullness of Life* (New York: Ballantine Publishing Group, 1999), 71.

[2] John Polkinghorne, *Belief in God in an Age of Science* (New York: Yale University Press, 1998), 77.