and in general his lamenting the decline of human-centered space exploration seems shortsighted in this regard. The Moon is a much more complex, politically contested temporal object in the digital age. Mapping has gone far beyond the surface of the Moon since 1959, when the Soviets returned the first images of the dark side of the Moon—outward to its magnetic and gravity fields and inward to its geological and chemical composition. The Soviets mapped magnetic fields initially with Luna 10 in 1966 (they did not find much of one), and then the United States did the same digitally for the Moon's surface with Lunar Prospector's (1998) electron reflectometer. Lunar Prospector also used gamma rays to measure surface composition, neutrons to measure hydrogen in the crust, alpha particles for gas venting, and doppler measurements for what NASA called the "first truly operational gravity map of the Moon." Currently, Chinese Yutu rovers use an array of sensors and perform core samples to understand the geology of the Moon, while India has been trying to do the same with the Chandrayaan landers. Robots with computer memory rather than humans armed with print technology will map the Moon in the twenty-first century and increasingly computers will read these "maps." Haddad's basic question "When does a depiction of the moon become a lunar map?" (1) remains vitally important.

As the "space age" intersects the "digital age," mapping has been completely transformed for both the Earth and the Moon. The temporal dimension envisioned by Hevelius has become far more broadly and complexly schematized. The broader goals of Riccioli and Grimaldi to suggest the non-human aspects of the Moon also seem relevant. What happens when machine memory and learning encounters and maps an object whose temporal dimensions go beyond human framing and even human reading?

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Aislinn Muller

The Excommunication of Elizabeth I: Faith, Politics, and Resistance in Post-Reformation England, 1570–1603. St. Andrews Studies in Reformation History. Leiden: Brill, 2020. Pp. x + 242. Hb, \$151.00.

The bull *Regnans in excelsis* proclaimed Queen Elizabeth I's crimes to the Catholic world in 1570. Pope Pius V deprived her of her "pretended claim" to

the kingdom because of her heresy and notorious support of heretics. She had been anathematized; moreover, anyone continuing to honor and obey her could suffer the same penalty: "And we command and forbid all and sundry among the lords, subjects, peoples and others aforesaid that they have not to obey her or her admonitions, orders or laws. We shall bind those who do the contrary with a similar sentence of excommunication" (*Recusancy and Conformity in Early Modern England*, ed. Ginevra Crosignani, Thomas M. McCoog, SJ, and Michael Questier; with the assistance of Peter Holmes [Toronto: PIMS, 2010], 89). Catholics risked eternal damnation for their profession of loyalty and allegiance to their monarch. Caught between Scylla and Charybdis, Catholics had little room for maneuver. Debates over the nature and extent of papal disposing power and canonical doubts about the bull's validity because of inadequate promulgation, did not resolve their quandary. The government meanwhile worried that Catholic fidelity to Rome would override their allegiance to the crown. How then could Elizabeth be certain where their sympathies lay? Inadvertently, Rome had added a powerful weapon to the Elizabethan anti-Catholic arsenal. For the readers of this journal, I shall concentrate on Jesuit involvement.

The papal instructions to Jesuits Robert Persons and Edmund Campion as they embarked for England in 1580 explained that the bull "is forever binding on her and the heretics, but indeed in no way binding on Catholics, under present circumstances [*rebus sic stantibus*], but then and only then, when the same bull can be put into public execution" (*The Correspondence and Unpublished Papers of Robert Persons, SJ. Volume 1: 1574–1588*, ed. Victor Houlston, Ginevra Crosignani, Thomas M. McCoog, SJ [Toronto: PIMS, 2017], 88). Catholics could acknowledge Elizabeth as queen *rebus sic stantibus*, under present circumstances. These circumstances could end suddenly at the pope's discretion. In an otherwise comprehensively researched monograph, the author has somehow overlooked Michael L. Carrafiello's "*Rebus sic stantibus* and English Catholicism, 1606–1610," *Recusant History* 22 (1994): 29–40.

Yet, while Gregory was nuancing the bull for English Jesuits, he was also sponsoring an expeditionary force in Ireland armed with papal banners and accompanied by Nicolas Sander. Neither Campion nor Persons—nor, indeed, Superior General Everard Mercurian—know of the Irish adventure. William Allen, prefect of the English mission, did know and, as Gerard Kilroy has shown (*Edmund Campion A Scholarly Life* [Farnham: Ashgate, 2015], 134–35), kept it secret lest Mercurian decide against the mission. Rome pursued an ambivalent policy that bordered on duplicitous.

Muller underplays Mercurian's aversion to even the slightest suggestion that there was a political dimension to the mission, an anxiety that permeated

discussions surrounding its foundation of the mission and the instructions for missionaries. Thus, I question Muller's claim that "both Jesuit and seminary priests *seem* to have considered transmitting the bull to the laity as an important part of their ministry" (64, italics mine). Mercurian's instructions forbade importing any object "proscribed under pain of death, such as Agnus Deis, blessed grains etc; nor will they keep them on their persons henceforward." Mercurian also commanded them "to refrain from talk against the queen and not allow it in others" (*Correspondence and Unpublished Papers*, 83).

Bulls are not explicitly mentioned in the instructions, but 13 Eliz. II, c. 2 made their transmission and possession treasonable offences. The two Jesuits may have ignored the instructions and had taken a risk, but what is the evidence? Intelligence received by Henry Brooke, Lord Cobham, ambassador to France, between January and April 1580 (actually before the departure of the Jesuits from Rome) should have been scrutinized more thoroughly before being offered as confirmation (129). The Elizabethan convention of reproducing a document in its refutation, the author correctly observes, "did more to increase access to the papal bull in England than Catholic efforts to smuggle copies of the sentence from Rome" (113).

Regnans in excelsis, the proverbial sword of Damocles, was posed perilously over Elizabeth's head. Periodically, certain English and Irish Catholics invoked it and requested its re-promulgation to legitimate invasions or rebellions. James Fitzmaurice Fitzgerald invoked the bull to justify his rebellion in 1571. His Jesuit cohort David Wolfe, not mentioned by Muller, repudiated his allegiance to Elizabeth because of the bull. In one memorial to King Philip II and Pope Gregory XIII from May 1582, Persons and Allen stressed that the pope must reiterate the bull and order "all to take up arms against her, under pain of excommunication if they fail to do so, and granting a plenary indulgence to all who, being penitent and having the intention of confessing, shall take up arms or die in this undertaking on behalf of the faith" (*Correspondence and Unpublished Papers*, 339). Similar requests were made in preparation for the 1588 Armada (*Correspondence and Unpublished Papers*, 660, 675). Hugh O'Neill, earl of Tyrone, and his supporters, urged Rome to confirm Elizabeth's excommunication to aid their "Faith and Fatherland" uprising in the 1590s.

Why has it taken so long for a historian to tackle one of the most significant events of the reign of Elizabeth I? Every textbook mentions the excommunication with a combination of horror and disdain but little elaboration. Was a wider, more thorough investigation considered off limits for mainstream historians and of interest solely to Roman Catholics? Muller copiously chronicles the demand for the queen's excommunication, the bull's proclamation and transmission, and its consequences, real and imaginary, on the government

and the Catholics. In so doing she opens up areas for future research. For example, Pope Pius IV's proposal at the Council of Trent in the summer of 1563, merits further investigation. Unfortunately, the author did not include a transcription and translation of the bull; I recommend that a conscientious reader have one at hand.

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Stephan Bauer

The Invention of Papal History: Onofrio Panvinio between Renaissance and Catholic Reform. Oxford-Warburg Studies. New York: Oxford University Press, 2020. Pp. xi + 262. Hb, \$90.00.

The Invention of Papal History joins a series of renovating studies that, over the last decade, have drawn out controversial practices that transformed early modern historical writings into vectors for political and theological debates. Far from a disembodied history of ideas, Stephan Bauer delivers an intellectual biography of the Augustinian church historian, Onofrio Panvinio (1530–68), that brings to life the social complexity that underpinned his work on church history.

Bauer considers the correlation between changes in historical methodology and the state of Catholic Reformation before the era dominated by Cardinal Cesare Baronio and his famous *Annales ecclesiastici* (1588–1607). Bauer's book animates a short-lived period of historiographical experimentation, which favored the development of critical history and of which Panvinio was a clear representative. Thanks to a great command of sixteenth-century intellectual history that contextualizes Panvinio's work and archive, Bauer demonstrates how, in the 1550–60 period, church history operated as a shared field of inquiry among scholars of multiple confessions. Bauer challenges the myth that ecclesiastical history was governed by an almighty papacy controlling every aspect of its production, and his book provides a superb addition to recent game-changing work dedicated to the Catholic Reformation by scholars who insist on the creative and ubiquitous influence of history-writing in all aspects of the reforms across the Catholic world.

In the first two chapters, Bauer introduces his reader to Panvinio's trajectory from his birthplace in Verona. He follows Panvinio's education and professional trajectory across the Italian Peninsula (Naples and Rome), and parts