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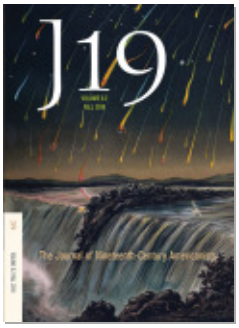

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After hearing Nat Turner's testimony in November 1831 regarding the recent insurrection he had led and reminding him of his inevitable execution, Thomas Gray asked Turner whether he knew anything about "any extensive or concerted plan" among slaves beyond Southampton County, Virginia:

> His answer was, I do not. When I questioned him as to the insurrection in North Carolina happening about the same time, he denied any knowledge of it; and when I looked him in the face as though I would search his inmost thoughts, he replied, "I see sir, you doubt my word; but can you not think the same ideas, and strange appearances about this time in the heaven's might prompt others, as well as myself, to this undertaking."[1]

Turner's response is surprising: he displaced the limited authority of his own word in favor of the greater authority of an external signifier, the "strange appearances about this time in the heaven's," which consisted of a solar eclipse on February 11, 1831, and an unusual blue-green discoloration of the sun that occurred on August 13, 1831.[2] In this moment of their interview, Turner suggested to Gray that these astronomical events could signify to other slaves, independent of interpretive guidance from a leader such as himself, and function as a catalyst for revolts in dispersed geographic locations. In brief, Turner identified the heavens as a medium through which a revolutionary message could circulate.

Understanding the heavens as a medium of communication requires an expanded definition of what counts as media. In the 1830s and 1840s, heavenly phenomena seized the attention of viewers and transmitted information in ways that destabilized the authority of other forms of media such as newspapers or scriptural texts. Not only slaves like Turner but also religious leaders such as William Miller (founder of Second Adventism) read astronomical events as endorsements for their social projects, using them to convene communities of sky watchers and regulate future astronomical interpretation. Reformers like President John Quincy Adams, who wanted to move away from religious modes of heavenly interpretation, scrambled to establish naturalistic modes of sky reading in the wake of public disturbances created by unpredicted astronomical phenomena. Across the spectrum, viewers believed that astronomical events conveyed insurgent information from a divine being about overturning the "natural" order of time and space.

Media scholars often presuppose that media are linked with technology, but before the 1850s, media spanned a broader range of sensory inputs and naturally occurring phenomena. Raymond Williams claims that the twentieth-century construct of media encapsulates three concepts: an older definition in which a medium is a "substance" that enables sensation (such as air carrying sound vibrations) and two newer definitions of media—any technological means for transferring information (such as print or telegraphs) and organized broadcasting services (i.e., news media).[3] By the late nineteenth century, the early definition of media as substances carrying sensory information had folded into the definition of media as objects carrying semantic information, which in the twentieth century became a shorthand term for any news broadcasting organization. In the early nineteenth century, though, a ray of light could count as a medium just as easily as the reading material it illuminated because people believed the ray of light carried information about the cosmos. Discussing humans' mediated relationship to the world, the media theorist Niklas Luhmann writes, "Whatever we know about our society, or indeed about the world in which we live, we know through the mass media."[4] Luhmann's statement refers to a late twentieth-century world rife with technologies of mass communication; however, his claim that mass media structure people's knowledge about the world could apply to the pre-mass-media world of the early nineteenth century, where people obtained knowledge about their world through a range of media, from newspapers to the sky. Finally, pointing out what makes media distinct—more than simply an object or a social practice—W. J. T.

Mitchell foregrounds "the way media address or 'call out' to us."[5] Turner's narrative in *The Confessions* contends that, in a world where people followed the patterns of heavenly bodies, extraordinary astronomical events called out to viewers, who believed they conveyed sensory and semantic information.

Using people's responses to a variety of astronomical phenomena in the heavens across social, geographical, and religious contexts, this essay reconstructs the gravity and logic of Turner's claim about "strange appearances" in the heavens that "might prompt others . . . to this undertaking." To accomplish this task, I piece together from newspapers, pamphlets, almanacs, and religious tracts the interpellative power of astronomical events and people's various (often conflicting) methods for interpreting them. Astronomical events appearing in the heavens seized the attention of viewers across vast geographic regions and were subsequently harnessed by a variety of actors to validate religious and political causes. The first section of this essay examines immediate and gradual responses to the Leonid meteor storm of 1833 from Christian millennial interpreters across the United States; the second examines Nat Turner's religious and scientific deployment of heavenly signs in *The Confessions*; and the third considers John Quincy Adams's rationalist critique of popular responses to astronomical phenomena. At stake in my argument here is a historical understanding of the assumptions and processes that allowed a nonlinguistic medium to communicate information, both to individuals and to viewing communities.

The Heavenly Scroll, Interpellation, and Interpretation

Nat Turner's statement about the eclipse likely sounds like premodern astrology to twenty-first-century readers of *The Confessions of Nat Turner* (1831), who hear the claim through the lens of Mark Twain's *A Connecticut Yankee in King Arthur's Court* (1889), where Yankee Hank uses his knowledge of an eclipse to manipulate his medieval audience. But many communities thought of the sky as a communication medium in the nineteenth century. Astrological divination, based on the assumption that the movements of planets and stars convey meaning relevant to humans, had existed for millennia, and many communities continued to interpret astronomical events—especially spectacular or infrequent ones such as comets—as signs about political upheaval, divine disapproval, or the opportune moment for action.[6]

The growth of nontraditional Christian sects during the Second Great Awakening in the United States increased interpretations of and

commentary on the heavens.[7] In early nineteenth- century America, the Christian Bible informed popular "astrological" beliefs, which frequently portrayed the heavens as a "heavenly scroll"—a medium through which God communicated his divine will. For example, God could communicate by strange movements of the sun (to the prophet Joshua and to King Hezekiah), by the sudden darkening of the sun (with Moses in Egypt and at Jesus's death), and by the strange star that announced Jesus's birth.[8] This list does not include many future-oriented prophecies in which astronomical signs mark significant events.[9] The concept of a "heavenly scroll" had its basis in American evangelical Christianity, particularly Christian millennialism, the belief that Jesus Christ would return to the earth and put the world's political systems to an end as he established his one thousand year reign. "Heavens" captures the double sense of "sky" and "the place where God lives"; "scroll" comes from Hebrew and Christian scriptural passages that compare the sky to a scroll: Isaiah 34:4, "And all the host of heaven shall be dissolved, and the heavens shall be rolled together as a scroll"; Revelation 6:14, "And the heaven departed as a scroll when it is rolled together." Like a panorama, the heavenly scroll unfolded a limited view of a larger divine drama as it revolved from horizon to horizon.[10] Beyond formal religion and grandiose signs, common beliefs about lunar time structured the annual rhythms of the lives of ordinary people, telling them, for example, during what moon phase planting should begin.[11] People paid attention to the skies, especially in a relatively young nation whose citizens believed it would play a role in the Christian millennium.

Within this context of religious sky reading, where the heavenly scroll marked annual or cosmic timing, astronomical signs interpellated people. Nat Turner claims that an eclipse could "prompt" people to follow a certain course of action. His claim entails three parts of a larger process: first, that astronomical signs caught humans' attention; second, that the signs contained meaning which people could decipher; and third, that people would actually bother to interpret the signs. As for the first step, astronomical signs did catch people's attention, especially during unpredicted events like meteor showers or the appearance of undocumented comets.

The most dramatic example of an unpredicted event was the Leonid meteor storm of November 1833, an event which twentieth-century astronomers designated the most dazzling meteoric display in at least three centuries.[12] Frederick Douglass describes this event "when the heavens seemed about to part with its starry train" in *My Bondage and*

My Freedom (1855).[13] In this display, viewers from across the United States (and not just Alabama) saw anywhere from 50,000 to 150,000 meteors per hour or fourteen to forty-one meteors per second.[14] Many newspaper accounts described shooting stars falling like snow or in "a serpentine form" or "swords of fire above the earth" (see fig. 1).[15] The light from the shower was so bright that some people awoke in their houses thinking that it was morning or that "there was a fire near at hand."[16]

No one expected the Leonid meteor storm because astronomers hadn't yet figured out what meteors were, let alone how to predict the time or location of their occurrence. On the night of November 12, when the shower began, its brilliance astonished onlookers, who concluded that the meteor shower was a sign of the end of time and began to panic. Newspaper editors from across the United States ran brief articles on November 13 and 14, 1833, describing how they were suddenly awakened in the night by panicked citizens beating on their doors. In one example from the *Augusta Courier*, the editor writes, "We never saw anything like it. We were waked by a neighbor, who had been aroused in a similar manner by one who supposed the World was coming to an end, as the Stars were falling."[17] Many newspaper editors, consequently, rushed off a brief account of the phenomenon to which they hoped other newspapers would respond in order to determine whether the phenomenon was local or national.[18]

Many reports recorded that people interpreted the meteor shower as a message from God, written out on the heavenly scroll, forecasting the end of the world. Whether it was "Judgment Day," the "last trump," or "the end of the world," observers pointed to passages in the Bible to authenticate their Christian millennialism. Along these lines, Frederick Douglass wrote, "I was not without the suggestion, at the moment, that it might be the harbinger of the coming of the Son of Man."[19] The meteor showers threw observers from many regions across the United States into a panic: they ran through the streets, repented, or spent the night in intense uncertainty.[20] The editor of the *Baltimore Gazette* described people's responses this way: "We were amused at the different effects produced upon the few beholders,—some in dreadful affright, predicted the end of the world, others of more stern souls were sure that it at least prognosticated some dreadful war; whilst the Philosopher, smiling at their simplicity, calmly viewed the Phenomenon, wonderful as it was."[21]

While media theorists such as Luhmann, Friedrich Kittler, and Marshall McLuhan argue that a medium's characteristics determine how people use it, Lisa Gitelman asserts that what people believe about a

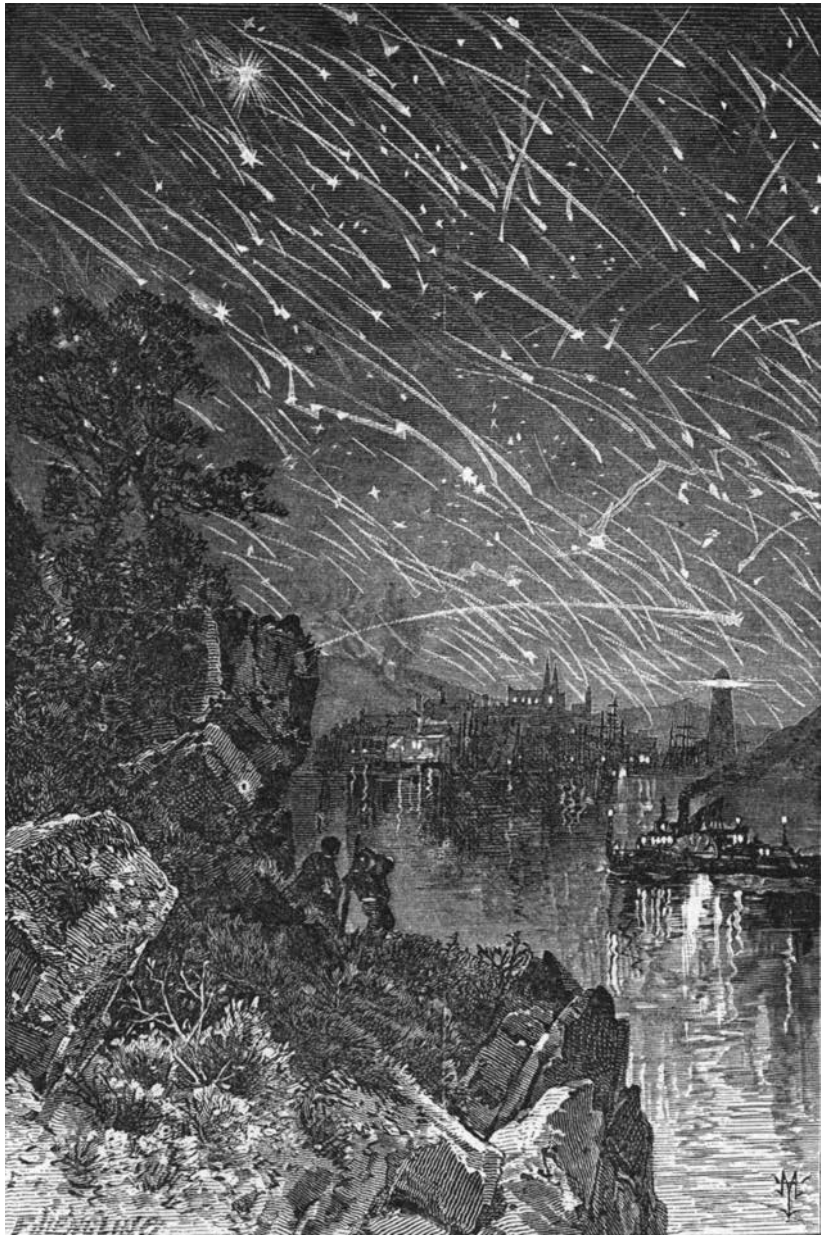

Figure 1. *Remarkable Meteoric Display on the Mississippi*, artist's rendering of Leonid meteor storm from R. M. Devens, *Our First Century* (Springfield, MA: C. A. Nichols & Co., 1876).

medium matters at least as much as its characteristics: "communication is a cultural practice, a ritualized collocation of different people on the same mental map, sharing or engaging with popular ontologies of representation."[22] For Gitelman, a communication medium's impact on users is not predetermined but varies according to what users think about that medium. While unpredicted astronomical events carried the potential to dazzle onlookers, how viewers responded to such hailing power depended on their religious, secular, or scientific education. Christians who thought of the heavens as God's scroll interpreted astronomical events as divine signals. Viewers imagined themselves as connected to a larger communicative process. First, the heavenly scroll interpellated people. The light from the meteor storm interrupted the order of natural events: people talked about getting up to start milking because they thought it was day or about having sufficient light from the meteors to read by; it also interrupted the order of daily routines: people ran through the streets and under houses, repented of their wicked ways, and intruded upon their sleeping neighbors in the middle of the night. Consequently, the interruption demanded an explanation, which people supplied from their beliefs and corroborated in conversation with religious or print-based communities.

The time that was required to sort out what had happened in print media reflects how signs on the heavenly scroll circulated more widely and more rapidly than information in print. People used the common practice of reprinting articles from other towns' newspapers to figure out what had happened and gradually came to an understanding of the scope of the event, though not what caused it. For example, on November 14, the *Baltimore Gazette* reprinted articles from the *Washington Telegraph*, the *Alexandria Gazette*, and the *Philadelphia Chronicle* with this introductory note: "*The Atmospheric Phenomenon*, mentioned in our paper of yesterday, was observed in several other places, and attracted as much attention, and produced as much surprise, as it did among many of our citizens."[23] Printers in large central cities like Baltimore and Washington, DC, needed five days (from Tuesday night to the next Monday's paper) to realize that it was an event that occurred at least across the United States.[24]

The interpretation of the meteor storm as a divine message about the end of the world was eventually countered by a scientific explanation. By January 1834, Denison Olmsted (professor of math and natural philosophy at Yale) had collected enough data on the event to give a partial debriefing.[25] Olmsted's two articles in the *American Journal of*

Science and Arts offered a counternarrative in which celestial bodies entered earth's atmosphere while orbiting the sun in their regular track. Ultimately, these articles were supposed to neutralize the meteor storm's superstitious meanings. However, they did little to standardize people's collective memories of the meteors or to change the minds of the people who staunchly held onto their belief that the meteors signaled the second coming of Christ.

One of the Leonid meteor storm's viewers, William Miller, famously interpreted heavenly signs as communication from God about the end of the world and started a religious movement. For Miller and his Second Adventists—members of one of the most popular Christian millennial movements in America during the 1830s and 1840s—the heavens bridged a communication gap between humans and God. God communicated through heavenly signs, which his followers interpreted alongside passages from scripture as signals of divine timing and instructions for specific action.

Miller constructed his views in the late 1820s and early 1830s through an intensive and extensive study of Hebrew and Christian scriptures and observation of astronomical events, including the Leonid meteor storm of 1833. On the scriptural side, Miller believed the books of Daniel and Matthew contained predictions about when Jesus Christ would return to the earth and what signs would precede this event. Miller read passages from the book of Daniel regarding specific numbers of "weeks" and "times" until the Messiah's return as codes for the number of years before Jesus would return to earth a second time.[26] Miller verified his readings of Daniel with the astronomical events to which he believed another end-of-the-world passage, in Matthew 24, referred:

> Immediately after the tribulation of those days shall the sun be darkened, and the moon shall not give her light, and the stars shall fall from heaven, and the powers of the heavens shall be shaken: And then shall appear the sign of the Son of man in heaven: and then shall all the tribes of the earth mourn, and they shall see the Son of man coming in the clouds of heaven with power and great glory.[27]

Miller identified the darkening of the sun with an atmospheric event that happened in New England on May 19, 1780: a dense cloud blotted out the sun, sending people into a panic.[28] (Significantly, he didn't use an eclipse

as his example, probably because the scientific explanation for an eclipse was better known than other events, thus more easily disregarded as a unique divine sign.) The Leonid meteor storm of November 1833 dramatically fulfilled the second part of the prophecy—"and the stars shall fall from heaven"—marking the time right before the Son of man's return. Not long after the meteor storm, around 1836, Miller began his public ministry. Through scriptural and heavenly reading, Miller predicted that Jesus would return between March 1843 and November 1844: God was going to return, end all earthly governments, and set up a new divine order while Miller and his followers watched from safety.[29]

In addition to coinciding with the Leonid meteor storm in 1833, Miller's prediction about the world ending in 1843 or 1844 coincided with the appearance of a highly visible comet in March 1843.[30] Although they were familiar with comets, astronomers hadn't been able to predict the arrival of this particular comet, which was reported to have been so bright that it was visible during the middle of the day and looked for a while as if it would collide with the sun.[31] Once again, an astronomical sign interpellated viewers, this time matching the prediction of a religious leader. Miller had predicted at least ten years previously that Jesus would come back and the world would end in March 1843; the comet fit neatly with the narrative of Matthew 24: "And then shall appear the sign of the Son of man in heaven." To Second Adventists, the comet confirmed Jesus's imminent return.[32] Adherents used the comet as a sign to persuade other people to convert to Second Adventism and even to take more extreme measures; some sold all their property, refused to harvest their crops, and even climbed trees in the hope of being nearer to the heavens when Jesus returned. When the comet disappeared, the urgency which Second Adventists tied to the comet faded as the projected time of Jesus's return—sometime before autumn 1844—drew closer to its final opportunity. When the world didn't end, the Second Adventists faced what some called "the Great Disappointment."[33]

Both the viewers of the Leonid meteor storm and Second Adventists assumed that an astronomical event could be a direct divine signal about the end of the world. The main difference is that viewers of the Leonid meteor storm assumed the end was going to occur soon and perhaps immediately, whereas Miller and his followers worked out a slower and more complex interpretation of the divine sign using scriptural evidence to support their claims. In this context, Nat Turner's claim that heavenly signs communicated to him was not unusual.

Solar Eclipse as Mass Communication Event

Like Miller and viewers of the Leonid meteor storm, Turner read the heavens as divine communication. Turner, however, demonstrated a greater awareness of how, when, and where astronomical events occurred, and he embraced a kind of scientific astronomy as part of his revolutionary program. Although Turner's astronomy isn't scientific by modern standards, his account of observing the heavens is more methodical and considers more features of astronomical events than other religious leaders' accounts. During their interview, Turner gave Gray an account of his observation of astronomical phenomena starting in 1825, of his interpretation of the eclipses of 1831, and of his assumption that an eclipse could communicate to other people.[34] Altogether, Turner's account of the divine signs he observed positions the heavens as a key site for divine communication, both with him as a prophet and with other observers. Some scholars interpret Turner's discussion of sky reading as a hoax, either on his part or Gray's, pointing to the fact that the eclipse explanation appeared in early newspaper accounts of the revolt as evidence for their view.[35] However, I recommend that we take Turner's account of his visions seriously.

Turner's first vision in 1825 established his role as a prophet capable of interpreting heavenly signs. His first vision occurred when he returned to his master after having run away for about a month: "And about this time I had a vision—and I saw white spirits and black spirits engaged in battle, and the sun was darkened—the thunder rolled in the Heavens, and blood flowed in streams."[36] Turner's description of the sun being darkened reflects what happens during a solar eclipse, and his language maps the mechanics of a solar eclipse onto a racialized conflict. Just as the moon—which appears black during a solar eclipse—temporarily blocks out the white light of the sun, Turner similarly sees a battle in the heavens between white and black spirits, mirroring the language of racial conflict on earth. Turner then says, "I heard a voice saying, 'Such is your luck, such you are called to see, and let it come rough or smooth, you must surely bare it.'"[37] The voice tells Turner that he is called to see such visions, pointing to the darkening of the sun as a repeatable sign and framing "the Heavens" as a space that mediates communication between a divine being and humans like himself. *The Confessions*' narrative renders the sun and moon as signals for action. Suggestively, the voice calls Turner to "*bare* it." Perhaps what Turner meant (and Gray misrecorded) was to "*bear*" the metaphorical burden of his calling or to

"carry" his message about revolt to others as a spiritual medium or prophet, but Gray records this word as "bare." Reading this way, the divine voice calls Turner to *reveal* to his fellow slaves not a specific message about revolt but rather the sun's ability to signal revolt. Turner the "barer" acts as prophetic teacher who shows other people what to do when they see eclipses.[38]

Turner's second vision, sometime before 1828, casts his knowledge of the heavens as scientific—not in a fully modern sense, but more methodical than, for example, Miller's knowledge. The Spirit appeared to him again: "And it appeared to me, and reminded me of the things it had already shown me, and that it would then reveal to me the knowledge of the elements, the revolution of the planets, the operation of tides, and changes of the seasons."[39] The spirit revealed scientific knowledge to Turner: how the elements (perhaps indicating the "four elements"[40]), the planets, the tides, and the seasons worked. All four can be seen as concerning astronomy. Knowledge of "the revolution of the planets" stands out as the most obvious astronomical knowledge, but the tides pertain to the lunar orbit, and the seasons involve the slope of earth's axis of rotation as it revolves around the sun. Readers of *The Confessions* have noted Turner's scientific knowledge about making paper and gunpowder, which Gray cross-examines him about, but his knowledge about planets also constitutes scientific knowledge.[41] Turner's science subsequently takes on interpretive meaning:

> And from the first steps of righteousness until the last, was I made perfect; and the Holy Ghost was with me, and said, "Behold me as I stand in the Heavens"—and I looked and saw the forms of men in different attitudes—and there were lights in the sky to which the children of darkness gave other names than what they really were—for they were the lights of the Savior's hands, stretched forth from east to west, even as they were extended on the cross on Calvary for the redemption of sinners.[42]

Since the people around Turner were not able to understand "the lights in the sky"—the stars, moon, and sun—the Spirit gives Turner a heuristic. "Behold *me* as I stand in the heavens" suggests divine presence in heavenly signs and identifies the heavens as the place where the Holy Ghost will communicate to Turner. After this vision of the heavens, Turner found similar forms of men written in blood on corn leaves, showing him that Jesus was laying down his yoke of bearing sin and returning

from heaven to earth for judgment.[43] Although he never spells out how the day of judgment aligned with his revolt, Turner hints that the signs had national referents, as the original date of the revolt was July 4. Once again, Turner's role was to read the signs and teach other slaves how they signaled a specific course of action.

Overall, the recurrence of Turner's encounters with the Spirit forms a major theme of the pre-revolt section of *The Confessions* and of my argument that his knowledge of astronomical phenomena was methodical. Gray records other celestial signs that Turner mentions: a loud noise on May 12, 1828; the eclipse on February 11, 1831, which was the signal that "I should arise and prepare myself, and slay my enemies with their own weapons"; and the sun's second blockage or discoloration on August 13.[44] Turner's first audible encounter with the Spirit happened again a year later; Turner's first vision of the sun being darkened, as I discussed above, recurred in a similar fashion at a later date; the eclipse sign in 1831 occurred in February and recurred in August ("the sign appeared again").[45] The second half of the pre-revolt section of his narrative revolves around his discussion of recurring sensory phenomena. In short, Turner shows how the Spirit taught him mastery over the science of astronomy by narrating the recurrence of signs he observed. Turner's methodical observations of heavenly signs differed from Miller's. Miller sought astronomical events in the past to justify his scriptural predictions of the future; he also assumed the signs would not recur—if they did, they would nullify their original message. But Turner emphasizes the fact that astronomical signs recur, allowing for him to learn how to read them, justifying his decision to lead a revolt, and leaving open the possibility of future communication through signs.

Turner's prophetic status shifts significantly, though, during Gray's cross-examination at the end of *The Confessions*—a shift which ultimately aligns with Turner's knowledge of how astronomical signs appeared and recurred. Gray asks him the question on everyone's mind: whether Turner was part of a larger coordinated insurrection. Turner responds, apparently spontaneously, by generalizing the ability of the heavens to communicate: "But can you not think the same ideas, and strange appearances about this time in the heaven's might prompt others, as well as myself, to this undertaking."[46] This moment in Gray's cross-examination reiterates Turner's emphasis on astronomical signs in the early part of his narrative, and it accomplishes two insurrectionary purposes.

First, it demonstrates Turner's knowledge of how eclipses circulated spatially and repeatedly across the country. The 1831 edition of the

American Almanac and Repository of Useful Knowledge visually represents the national scale of the perspective Turner describes through a detailed fold-out map attached to its fly page. "A Map of the eclipse of Feb.^{y} 12th, in its passage across the United States" shows the pathway of the eclipse through a shaded area that covers parts of Louisiana, Mississippi, Alabama, Georgia, South Carolina, North Carolina, Virginia, Maryland, Delaware, New Jersey, Massachusetts, and Nova Scotia.[47] Moreover, the *American Almanac* in particular emphasized the prolific nature (and profitability) of solar eclipses in the 1830s: the editors state that they began publishing the almanac in 1830 precisely because of the "five large eclipses of the sun" visible to Americans in the next seven years.[48] (Because of their initial success, the 1834 edition of the *American Almanac* repeated the map scheme of the 1831 edition and published another fly-page pull-out map that displays both the previous eclipse of February 12, 1831, and that year's eclipse on November 30, 1834; see fig. 2.) The map encourages thinking of the eclipse as a national event by framing the geographic space of the eclipse within the national boundaries of the United States and its territories.

Second, Turner's response to Gray made his role as interpreter and prophet transferrable to all slaves. If people assumed God was on the other side of the heavenly scroll—as Turner and many Virginians did—then having the ability to understand divine messages on that scroll gave an interpreter divine sanction to take the actions the heavens signaled. Turner in this moment divests his own messianic role while still claiming divine sanction for his revolt. He extends heavenly reading beyond the idiosyncratic prophet viewing the heavens to a large community spread across an interstate territory. All one needs to do to follow his example is watch the heavens for eclipses, which will signal the same message of revolt. In this sense, we can understand Turner as crafting a narrative that could function as instructions for other slaves to do what he did. Turner knew that Gray was taking notes and that he was going to write something that would be published in some capacity. If, as Thomas Parramore suggests, Turner viewed Gray as a means for reaching a broader audience, then his testimony constitutes an attempt to educate other slaves on how to read the heavenly scroll and even coordinate synchronized action.[49] Incidentally, Gray's text did sell well and many whites feared the circulation of his text for the ways in which it would inspire copycats. After the Leonid meteor storm, on November 15, 1833, the Richmond *Enquirer* republished an article from the Richmond *Constitutional Whig* which encouraged white slave owners

Figure 2. "A Map of the eclipses of Feb.^{y} 12th 1831 and Nov. 30th 1834 in their passage across the United States," from the *American Almanac and Repository of Useful Knowledge* (Boston: Gray & Bowen, 1834). The shadow from Louisiana to Massachusetts is the central path of the 1831 eclipse, and the shadow from Arkansas to South Carolina is the central path of the 1834 eclipse. Image from Michael Zeiler, "Historical Solar Eclipse Maps," *365 Days of Astronomy Podcast*, September 25, 2011, accessed June 2, 2014, http://www.eclipse-maps.com/Eclipse-Maps/PodcastHistoricalEclipses.html.

to be extra cautious because "great celestial phenomena are apt to produce superstitious ideas and a restlessness among the negroes."[50]

Countering Millennial Readings of the Heavenly Scroll

Just as slave owners wanted to maintain control over modes of heavenly reading that might lead slaves to revolt, state leaders wanted to maintain control over heavenly interpretation more broadly because of how it threatened social stability. Second Adventism, for example,

threatened to upset local markets when people sold all their belongings or chose not to plant crops because they expected the world to end. Regarding England in the eighteenth and nineteenth centuries, Maureen Perkins writes, "Prophecies had always been suspected by civil authorities . . . Prophecy was closely linked with millenarianism, and civil authorities were fearful of the widespread expectation of an end to earthly government."[51] As in England, American political leaders and social reformers (such as the publishers of the *American Almanac*) responded to millennial interpretation with a call for the public to understand heavenly observation as a matter of objective scientific inquiry rather than divine communication.

William Miller wasn't the only leader disappointed by events that didn't follow the appearance of the Great Comet of 1843; John Quincy Adams was just as disappointed by widespread disregard for scientific modes of observation. In a speech to the Cincinnati Astronomical Society at the dedication of the first nationally affiliated observatory in November 1843, President John Quincy Adams celebrated the observatory as a two-pronged means of bolstering American international prestige: first, by constituting a physical marker of American achievements, and second, by discouraging modes of reading the heavens that might threaten civil governments. According to Renée Bergland, Adams's speech responded to the American scientific community's disappointment over the comet of 1843, which made them aware of the lack of American observatories capable of making scientific observations in a regular, institutionalized way.[52] Indeed, although he never explicitly mentioned the recent comet, Adams made national shame a theme of his speech and a motivation for establishing the first national observatory. Specifically, Adams bemoans how America ignored the English astronomer Sir William Herschel's discovery that Uranus was a planet in 1781; as the self-professed "patroness of science," America should have been most open to such a rational discovery.[53] Adams breaks off from this obscure complaint, saying, "The theme is painful—let me pass it over."[54] Returning to the purpose of the Cincinnati observatory, Adams says, "FELLOW-CITIZENS!—The Astronomical Society of the city of Cincinnati, have determined to wipe the reproach from the fair fame of our beloved country."[55] For Adams and the scientific community, a nation's international reputation directly correlated to its astral-observation technologies.

Adams's belief that astronomy supported the work of nationalism was motivated by a less obscure threat to the nation, a threat deeper than

scientific apathy. His speech returns many times to the challenges civil governments encounter when astronomical events interpellate people who interpret them improperly. Regarding eclipses and comets specifically, Adams says, "Terror and consternation spread universally, at these sports of nature with the passions of man, while their causes remain unrevealed. But when once disclosed they are found to be among the simplest and most harmless operations of nature."[56] He provides a detailed explanation of solar eclipses, lunar eclipses, and comets, arguing that understanding such events helps people to see them as "harmless." This protracted explanation sounds pedantic in the speech, given that Adams's audience likely already shared his knowledge of scientific astronomy, but his rant shows that he and his listeners were concerned about public ignorance, and it serves as a call for broader public education.

Furthermore, Adams's anxieties about public ignorance registered the challenge his nationalist goal faced in regard to mass circulation. Novels and newspapers helped readers to imagine the nation, as Benedict Anderson has famously argued, but those media were limited in the number of people they reached.[57] Almanacs circulated more broadly across social strata than most books, and civil leaders welcomed scientific almanacs' lists of calculations (like those in the *American Almanac*) because they feared that a superstitious populace would interpret astronomical phenomena as signs of the end of earthly government.[58] By contrast to print media, eclipses and comets (and meteors, though he doesn't mention them) constituted a substantive obstacle to Adams's nationalist goals—and to the influence of print in Anderson's account—because of how they "spread terror and consternation universally." Masses of otherwise unreachable people witnessed astronomical phenomena and were interpellated by them.[59] Turner imagines exactly this aspect of the heavenly scroll as productive for an insurrection.

Although Adams perceives religious interpretation of the heavens as a threat to the nation, he takes care not to disparage religion explicitly in his speech. In fact, he quotes the Christian Bible to support his argument, although he mistakes both the content and purpose of the text he alludes to: "[Thales of Miletus] was contemporary with the prophet Jeremiah, and with king Ahaz, whose sun dial was the subject of a miracle, which proves beyond all question, that the use of the dial was familiarly known and had been so for ages, in the kingdom of Judah."[60] Adams shows his tenuous knowledge of the Bible, confusing Jeremiah for Isaiah and Ahaz for Hezekiah.[61] More importantly, though, Adams misses the main point of the story—the fact that the sun's movement was

a miraculous sign to Hezekiah directly from God—and instead celebrates a scriptural precedent for using scientific instruments such as sundials. In this moment, Adams maps his preferred understanding of the relationship among people, heavenly signs, and God. Whereas Miller and Turner saw the heavenly scroll as a medium God used to communicate with people on earth, Adams saw it as an object of study—a mechanism set in motion by a God now removed from the system.

Later in his speech, Adams relegates religious schemas like Miller's and Turner's to the distant prebiblical past by framing them as the views of superstitious peoples "in the state of nature." "He believes that *they* [the stars] are susceptible of sensual and of sordid impulses; that they are rivals in love and ambition, and that heaven is as discordant as earth—a perpetual scene of civil wars, and insurrections, never totally suppressed."[62] Adams's rhetorical choice of "primitive men" nevertheless hints that they still existed and continued to threaten the stability of civil government, thus disparaging groups that interpret astronomical events as meaningful signs. He and his audience would have likely thought of the ongoing social discord caused by William Miller and the Second Adventists, who at the time of Adams's speech were still anticipating the end of the world, that year or the next. Despite its being twelve years past, the audience would also have remembered Nat Turner's violent insurrection and may have made the connection to its association with a solar eclipse.

Ultimately, Adams hoped the observatory would stabilize American society by removing Americans' religious lens for interpreting astronomical phenomena. To support this goal, Adams called for the mutually reinforcing union of institutionalized government and scientific practice: science should standardize people's understanding of the heavens by making the heavens an object of study, reducing threats to civil authority from signifying heavenly scrolls. In return, governments must support the sciences financially. Adams viewed sundials, telescopes, observatories, and scientific almanacs as stabilizing media—not only technological tools but also symbols and enforcers of stability that circulated a protocol for a politically nonthreatening way to interpret astronomical events. His speech indexes the fact that a scientific understanding of the heavens was precarious in the nineteenth century and required convincing people that the heavens were not a communicative medium.

Conclusion

At stake in this historical moment was not so much a debate between science and religion over who was right but rather a popular cosmology

of how the heavens operated as a medium of communication. For Miller, Turner, and even Frederick Douglass, the heavens were a means by which God communicated with humans. As such, the mechanism of the heavenly scroll entailed broader capabilities for communicating with or coordinating action among communities of people, as Turner's *Confessions* suggests. Of course, no other wide-scale revolt followed a major astronomical event in the United States. Nevertheless, placing Turner's deployment of the 1831 solar eclipse and popular responses to the 1833 Leonid meteor storm at the center of our understanding of astronomy's place in American culture changes the resonance of references to astronomy later in the nineteenth century. For example, the protagonist of Martin Delany's novel *Blake* (1859)—who coordinates collective action among slaves across the South—witnesses a scene like the Leonid meteor storm. Henry David Thoreau, Walt Whitman, and Herman Melville figure John Brown as a meteor in their reflections on his life and execution.[63] How might our understanding of their literary choices change by tracing their origin to astronomical events in the 1830s and 1840s? More broadly, understanding the heavenly scroll as a medium should push us to consider what other kinds of nonwritten and nonlinguistic media people used to communicate in the early nineteenth century and how those media fit into popular structures of belief and practice.

Notes

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1. Nat Turner and Thomas Gray, *The Confessions of Nat Turner: And Related Documents*, ed. Kenneth Greenberg (New York: St. Martin's Press, 1997), 54.

2. Concerning the event on August 13, one observer wrote in the *Charleston Courier* on August 16, 1831, "The *light* of the Sun had so far diminished, that at noon it presented an appearance precisely similar to that of the late Solar eclipse . . . except that it tinged every object on which its rays fell, with a very sensible blue color . . . The latter circumstances we regard as among the most extraordinary optical appearances that have ever fallen under our observation."

3. Raymond Williams, *Keywords: A Vocabulary of Culture and Society* (New York: Oxford University Press, 1983), 203.

4. Niklas Luhmann, *The Reality of the Mass Media* (Stanford, CA: Stanford University Press, 1996), 1.

5. W. J. T. Mitchell, "Addressing Media," in *What Do Pictures Want? The Lives and Loves of Images* (Chicago: University of Chicago Press, 2005), 207.

6. For more on astrology, see Roger Beck, *A Brief History of Ancient Astrology* (Malden, MA: Blackwell, 2007). Beck claims that astrology goes as far back as the Babylonians (ca. 1000 BCE). Renée Bergland also traces a tradition from the Greek historian Plutarch to Shakespeare and Milton that reads comets as signs specifically about political revolution in *Maria Mitchell and the Sexing of Science: An Astronomer among the American Romantics* (Boston: Beacon Press, 2008), 58–60.

7. Aubin, Bigg, and Sibum note that the number of observatories increased from fewer than thirty-six to over two hundred over the course of the nineteenth century; they write, "The observatory, we argue here, was essential in ensuring the growing social and cultural significance of the mathematical, physical, and cosmological sciences in the nineteenth century. It was

simultaneously indispensable in constructing elements of the modern western state and society—among others, European and colonial expansion and the emergence of a public enthusiastic about scientific and technological developments." *The Heavens on Earth: Observatories and Astronomy in Nineteenth-Century Science and Culture*, ed. David Aubin, Charlotte Bigg, and H. Otto Sibum (Durham, NC: Duke University Press, 2010), 2. Regarding the circulation of the Second Great Awakening, Laura Scales notes, "The period was marked by the explosion of revivalism and the rise or popularization of many religious movements, including Methodists and Baptists in the South, Transcendentalists and Unitarians in New England, and Spiritualists, Millerites, and Shakers in New York," in "Narrative Revolutions in Nat Turner and Joseph Smith," *American Literary History* 24, no. 2 (2012): 229n4.

8. Joshua 10:12–13; 2 Kings 20:9–11; Exodus 10:21–22; Mark 15:33; Matthew 2:1–11. All biblical citations come from the King James Version, which was commonly used in nineteenth-century America.

9. For example, Luke 21:25: "And there shall be signs in the sun, and in the moon, and in the stars; and upon the earth distress of nations, with perplexity; the sea and the waves roaring"; Revelation 8:12: "And the fourth angel sounded, and the third part of the sun was smitten, and the third part of the moon, and the third part of the stars; so as the third part of them was darkened, and the day shone not for a third part of it, and the night likewise." Cf. Revelation 8:12.

10. For more on panoramas and the temporality in which they unfolded their visual narratives, see Melissa Gniadek, "Seriality and Settlement: Southworth, Lippard, and *The Panorama of the Monumental Grandeur of the Mississippi Valley*," *American Literature* 86, no. 1 (2014).

11. See Emily Pawley, "Reading the Man of Signs, or, Farming in the Moon," *Common-Place* 14, no. 4 (Summer 2014).

12. A meteor "storm" is the name for an especially intense meteor shower. See Joe Rao, "The Return of the Leonid Meteors," *Sky & Telescope* 96, no. 5 (1998): 40. Walt Whitman also observed this event. See Richard Maurice Bucke, *Notes and Fragments: Left by Walt Whitman and now edited by Dr. Richard Maurice Bucke, one of his literary executors* (Folcroft, PA: Folcroft Library Editions, 1972).

13. Frederick Douglass, *My Bondage and My Freedom*, in *Frederick Douglass Papers*, vol. 2, ed. John W. Blassingame, John R. McKivigan, and Peter P. Hinks (New Haven, CT: Yale University Press, 2003), 245.

14. Rao, "The Return of the Leonid Meteors," 40.

15. From the *Baltimore Gazette*, November 13, 1833, 2, and November 14, 1833, 2, respectively (*America's Historical Newspapers*); the *Baltimore Gazette* reprinted the November 14 article from the *Washington Telegraph*. The "serpentine forms" indicate how extreme this storm was. As Richard Sanderson points out, meteors travel only in straight lines, but when so many are traveling at once, they create the illusion that individual meteors are swerving on erratic or serpentine paths; Richard Sanderson, "The Night of Raining Fire," *Sky & Telescope* 96, no. 5 (1998): 34.

16. *Massachusetts Spy*, November 20, 1833, reprinted from the *Baltimore Patriot*.

17. Qtd. in Sanderson, "The Night of Raining Fire," 32.

18. See "Brilliant Phenomenon," in the *Charleston Courier*, November 14, 1833, 2, and "The Meteoric Phenomenon," in the *New York Commercial Advertiser*, November 14, 1833, 2, which refers to Philadelphia newspapers' account of the meteors and invites comparison of the phenomenon by claiming the display was more significant in New York. By searching digitized nineteenth-century newspapers and secondary sources that reprinted excerpts from nondigitized newspapers, I turned up articles and reprinted articles about the meteors from states across the United States: Arkansas, Tennessee, Alabama, South Carolina, Virginia, Washington DC, Maryland, Pennsylvania, New York, and Massachusetts.

19. Douglass, *My Bondage and My Freedom*, 245.

20. Despite confusion in the general populace, many newspapers from slave states focused conspicuously on slave populations in their descriptions of the chaos. The *Huntsville Democrat* of November 14 writes, "Our town was the scene of great commotion, particularly among the blacks, who were praying and shouting in every direction, thinking the Day of Judgment had come" (quoted in Nicholas Hamner Cobbs, "The Night the Stars Fell on Alabama," *Alabama Review* 22, no. 2 [1969]: 149). The *Nashville Whig* contained a similar story: "In the country, we understand, great consternation seized the Negroes, many of them believing that the 'end of the world' was at hand . . . A gentleman of intelligence and veracity informs us that his whole neighborhood for three miles round was in commotion, particularly the black population whose apprehensions were fearfully excited" (quoted in Cobbs, "The Night the Stars Fell on Alabama," 152). The *Arkansas Gazette* ran a similar story on November 27 about the meteors with a similar

detail: "Among the ignorant and suspicious, particularly the blacks, it created considerable alarm" (quoted in Mary L. Kwas, "The Spectacular 1833 Leonid Meteor Storm: The View from Arkansas," *Arkansas Historical Quarterly* 58, no. 3 [1999]: 319).

21. *Baltimore Gazette*, November 13, 1833, "A Shower of Fire." Cf. *Richmond Enquirer*, November 15, 1833, "Brilliant Phenomenon": "We have conversed with many persons who were so fortunate as to be awake at the time, or who were called up from their beds to witness so unusual and superb a scene."

22. Lisa Gitelman, *Always Already New: Media, History, and the Data of Culture* (Cambridge, MA: MIT Press, 2006), 7. Friedrich Kittler's landmark study *Grammophone, Film, Typewriter* (1986) begins, "Media determine our situation, which—in spite or because of it—deserves a description" (xxxix). Marshall McLuhan in *Understanding Media* (1964) describes the "personal and social consequences of any medium" as the *result* of "the new scale" introduced by a medium rather than a contributing factor in how media are used (7). Kittler, *Grammophone, Film, Typewriter*, trans. Geoffrey Winthrop-Young and Michael Wutz (Stanford, CA: Stanford University Press, 1999); McLuhan, *Understanding Media: The Extensions of Man* (Cambridge, MA: MIT Press, 1994).

23. *Baltimore Gazette*, November 14, 1833.

24. See *Baltimore Gazette*, November 18, 1833, 2, and the *Daily National Intelligencer* (Washington, DC, November 18, 1833, 3, which reprinted the *New York Commercial Advertiser* article from November 14, 1833 (*America's Historical Newspapers*).

25. Denison Olmsted, "Observations on the Meteors of November 13th," *American Journal of Science and Arts* 25, no. 2 (1834); 26, no. 1 (1834) (*American Periodicals*). Olmsted's first article says less about what substantively caused the phenomenon and more about what kinds of things people consistently observed from a variety of locations across the United States. Olmsted collected scientific observations of the meteors from New Haven, Connecticut, to Augusta, Georgia, and to Bowling Green, Missouri. His data put the event into a national frame. Part 2 of Olmsted's contribution to the *American Journal of Science and Arts* in July 1834 hypothesizes that what people saw was the result of a cluster of celestial bodies that orbit the sun in an unusual track entering earth's atmosphere, which is close to what actually happened. For more information on scientists' growing understanding of meteors from Aristotle to the nineteenth century, see Mark Littmann, "Struggling to Understand Meteors," *The Heavens on Fire: The Great Leonid Meteor Storms* (New York: Cambridge University Press, 1998), 35–52.

26. Prophecies about "weeks" come from Daniel 9, and prophecies about "time, times, and a half" come from Daniel 12.

27. Matthew 24: 29–30. Richard Abanes and Anne Devereaux Jordan both discuss this prophecy and its interpretation, though not in direct connection with Miller. They assume and imply through their brief discussions that these events played a major part in his predictions. However, their analysis relies more on R. M. Devens's entries in *Our First Century* than on any account of Miller's. Abanes, "Miller's Millennial Madness," *End Time Visions: The Road to Armageddon?* (New York: Four Walls Eight Windows, 1998), 217–18; Jordan, *The Seventh Day Adventists: A History* (New York: Hippocrene Books, 1988), 31.

28. Even by 1876, when R. M. Devens recorded the event in *Our First Century*, it wasn't clear what caused the phenomenon. In fact, it wasn't an astronomical phenomenon but an atmospheric one; forest fires raging miles away created a cloud large enough to cast several states into darkness. Relevant to my point in this section, Devens's account records the tendency of astronomical events to unsettle civil government: the government authorities of one state who are holding legislative meetings move to adjourn since the world is obviously coming to an end. One legislator argues that they should continue their work because if God truly was returning that day, that man wanted God to find him doing his duty. Devens, *Our First Century* (Springfield, MA: C. A. Nichols & Co., 1876).

29. William Miller, *Evidence from Scripture and history of the second coming of Christ about the year 1843: Exhibited in a course of lectures* (Boston: Joshua V. Himes, 1842) (*Sabin Americana*). *Evidence from Scripture* was published at least four different times: 1836, 1838, 1840, and 1842 (*Sabin Americana*). For more on William Miller's visions, see Richard Abanes, "Miller's Millennial Madness."

30. Devens, "Sudden Appearance of a Great and Fiery Comet in the Skies at Noonday.—1843," *Our First Century*, 425–26. The comet was visible for roughly the full month of March, and Devens includes accounts of scientific observations of the comet from around the globe.

31. Bergland traces the history of comets (which nonscientists often confused with meteors in the nineteenth century: "Comets continued to symbolize violent political change for more

than a thousand years"; they also symbolized "rebellion against authority" (*Maria Mitchell and the Sexing of Science*, 58, 59).

32. Writing in 1876, Devens reflects on the significance of the Great Comet for Second Adventists: "There were, too, some persons who, without regarding it [the comet], like many of the then numerous sect called Millerites, as foretokening the speedy destruction of the world, still could not gaze at it untroubled by a certain nameless feeling of doubt and fear." Devens, *Our First Century*, 425. Devens's entry is the only reference I can find that Millerites were actually interpreting the comet along the lines of their theological beliefs, and his visual images juxtapose the arrival of the comet in the heavens with the arrival of Jesus from the sky. Devens's adoption of Millerites as a representative sample of people who viewed the comet from a millennial perspective suggests that smaller Christian millennialist sects saw the comet as significant for their views.

33. Abanes, *End Time Visions*, 226.

34. The biggest problem for reading *The Confessions of Nat Turner* alongside newspaper reports of the revolt is that the eclipse explanation for the cause of the revolt appears in news accounts before Turner's capture on October 30, 1831. The revolt was stopped by August 23, and the eclipse explanation appeared in newspapers by late September, a full month before Turner's capture. Coupled with the fact that we don't have Turner's authorial voice but rather Thomas Gray's record of his testimony, it seems easy to conclude that the eclipse explanation is not the full story. But this conclusion doesn't take into account the way people understood astronomical events at the time. Crucially, Turner's account of his astronomical knowledge in *The Confessions* pushes back against the assumption that the eclipse was a decoy explanation for the revolt's real inspiration.

35. Some historians have labeled this part of *The Confessions* apocryphal and have argued that Gray included it to distract from more disconcerting evidence and alleviate white fears of more widespread revolt. David F. Allmendinger Jr., for example, argues that this statement is Gray's fabrication. Similarly, Patrick Breen argues that the eclipse was an explanation offered by whites. See Allmendinger, "The Construction of *The Confessions of Nat Turner*," and Breen, "A Prophet in his own Land: Support for Nat Turner's Rebellion in Southampton's Black Community," in *Nat Turner: A Slave Rebellion in History and Memory*, ed. Kenneth S. Greenberg (New York: Oxford University Press, 2003). The court records reference his visions, but they dismiss it: "he went on to detail a medley of incoherent and confused opinions about his communications with God, his command over the clouds which he had been entertaining as far back as 1826":"Extract from the Court Records of Southampton County, Virginia," in *The Southampton Slave Revolt of 1831: A Compilation of Source Material*, ed. Henry Irving Tragle (Amherst: University of Massachusetts Press, 1971), 222.

36. Turner, *The Confessions of Nat Turner*, 46.

37. Ibid. Same in Tragle, *The Southampton Slave Revolt of 1831*, 309.

38. Scales argues that Nat Turner adopted a religious stance that made him into an active medium during the Second Great Awakening, obtaining, as she claims, divinity itself rather than merely access to divinity ("Narrative Revolutions in Nat Turner and Joseph Smith"). Conversely, during the First Great Awakening, people sought the latter—divine access or a kind of passive "mediumship." As for Nat Turner, I have trouble seeing how his visions convey the status of divinity rather than access to divinity; it depends on what the medium of communication is. Scales sees Nat Turner's visions as being mediated by a voice, which she interprets as an internal voice and, therefore, something that is a part of his own subjectivity. But if the eclipse is the main medium we should pay attention to, the communication is external, which is why Nat Turner has to teach other people to interpret what he does. The key question is how much emphasis we place on the disembodied voice. Ultimately, I interpret Turner's goal to be reproducing his reading processes rather than centralizing authority in himself.

39. Turner, *The Confessions of Nat Turner*, 47.

40. The *Oxford English Dictionary* records a use of "elements" in use from 1788–1834 by entries in which "elements" refers to the data needed to calculate the orbit of a heavenly body (7.a.).

41. Kenneth Greenberg in his introduction to *The Confessions* groups Nat Turner's knowledge into two categories: "sacred and secular knowledge" (2). Greenberg explicitly classifies paper and gunpowder-making as scientific knowledge, but he groups Nat Turner's reading the heavens for signs with his reading of blood on corn and leaves, presumably placing these in the category of "sacred knowledge" (3). Greenberg thus calls Turner a "semiotic rebel" because of his ability to read signs (2). As for readers' greater focus on gunpowder, James Sidbury writes, "Historians have often and rightly cited that near-monopoly [in 'firepower'] as a chief obstacle

to any successful slave insurrection." See Sidbury, *Ploughshares into Swords: Race, Rebellion, and Identity in Gabriel's Virginia, 1730–1810* (New York: Cambridge University Press, 1997), 66.

42. Turner, *The Confessions of Nat Turner*, 47.

43. Ibid.

44. Ibid., 47–48.

45. Ibid., 48.

46. Ibid., 54.

47. *American Almanac and Repository of Useful Knowledge for the Year 1831: Comprising a calendar for the year; astronomical information; miscellaneous directions, hints, and remarks; and statistical and other particulars respecting foreign countries and the United States*, vol. 2 (Boston: Gray and Bowen, 1831). The *American Almanac* was published in Boston, New York, Philadelphia, Baltimore, and Cincinnati from 1830 to 1860.

48. Ibid.

49. Thomas C. Parramore, "Covenant in Jerusalem," in Greenberg, ed., *Nat Turner*, 73.

50. Richmond *Enquirer*, November 15, 1833, 3, reprinted from the *Constitutional Whig*.

51. Maureen Perkins, *Visions of the Future: Almanacs, Time, and Cultural Change, 1775–1870* (New York: Clarendon Press, 1996), 96.

52. Bergland, *Maria Mitchell and the Sexing of Science*, 65.

53. John Quincy Adams, *An Oration Delivered Before the Cincinnati Astronomical Society, on the Occasion of Laying the Corner Stone of an Astronomical Observatory, on the 10th of November, 1843* (Cincinnati: Shepard & Co., 1843), 59.

54. Ibid., 60.

55. Ibid., 65.

56. Ibid., 27.

57. Anderson writes, "The slow, uneven decline of these interlinked certainties, first in Western Europe, later elsewhere, under the impact of economic change, 'discoveries' (social and scientific), and the development of increasingly rapid communications, drove a harsh wedge between cosmology and history . . . Nothing perhaps more precipitated this search, nor made it more fruitful, than print-capitalism, which made it possible for rapidly growing numbers of people to think about themselves, and to relate themselves to others, in profoundly new ways" (36). Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (New York: Verso, 1991).

58. In *Visions of the Future*, Maureen Perkins characterizes almanacs as one of the most popular forms of literature among working-class populations. At the beginning of the nineteenth century, reformers began to use almanacs—which previously relied heavily on astrological content—to discourage astrological reading and encourage scientific reading of astronomical events. Perkins discusses the *British Almanac*, launched in 1828, as a paradigm reform almanac, which expunged superstitious astrological content and encouraged scientific understanding through its text. The *Churchman's Almanac for 1831*, published in New York City by the Protestant Episcopal Press, claims that "almanacs disseminate more widely than, perhaps, any other species of tracts, whatever of amusement or instruction they may contain. Reflecting persons have on these accounts, long regarded and employed them as very proper vehicles for the diffusion of the precepts of economy, morality, and religion." See Teresa A. Goddu, "The Antislavery Almanac and the Discourse of Numeracy," *Book History* 12 (2009): 129–55.

59. His phrase "sports of nature" draws from a view of nature exemplified in a 1780 poem "Lusus Naturae; or, The Sports of Nature: A Poem" (*Eighteenth-Century Collections Online*). In the poem, an omnipotent and benevolent but distant God looks on while Nature, embodied as a female, plays and entertains herself on earth.

60. Adams, *An Oration Delivered Before the Cincinnati Astronomical Society*, 30.

61. 2 Kings 20: 9–11.

62. Adams, *An Oration Delivered Before the Cincinnati Astronomical Society*, 45–46, emphasis in original.

63. Martin Delany, *Blake, or, The Huts of America*, in *Anglo-African Magazine* (1859); Henry David Thoreau, "The Last Days of John Brown" (1860); Herman Melville, "The Portent (1859)" from his *Battle Pieces* (1866); Walt Whitman, "Year of Meteors" (1859–60). See also Kent Ljunquist, "'Meteor of the War': Melville, Thoreau, and Whitman Respond to John Brown," *American Literature* 61, no. 4 (1989): 674–80, and especially Brit Russert, "Delany's Comet: Fugitive Science and the Speculative Imaginary of Emancipation," *American Quarterly* 65, no. 4 (2013): 799–822.