

# Almanacs and the Disenchantment of Early America

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When Connecticut minister Ezra Stiles pondered the fate of magic and the occult in 1773, he found them in a state of terminal decay: "The System is broken up, he wrote, the Vessel of Sorcery shipwreck, and only some shattered planks and pieces disjointed floating and scattered on the Ocean of . . . human Activity and Bustle."<sup>1</sup> Many observers shared Stiles' sentiments. A number of Stiles' contemporaries thought magic a product of the nonage of civilization, properly discarded as humanity progressed to higher levels. In his *Brief Retrospect of the Eighteenth Century* (1830), New York minister Samuel Miller argued that during the Renaissance, "*Magic, Alchemy, and Judicial Astrology* were fashionable pursuits, and were interwoven with almost every object of study." But now, Miller claimed, those "play-things of ancient folly" were "justly ridiculed and exploded."<sup>2</sup>

Nor was the perception of the decline of the occult limited to its detractors. Almanac makers, the most prominent public defenders of astrology in eighteenth-century America, voiced similar complaints about the declining interest in the occult. Nathaniel Ames, the most popular New England almanac author in the decades leading to the Revolution, lamented as early as 1729 that "the sublime Sons of Art [adepts in the occult] . . . spring up so thinly, scarce one in a hundred." There were other indications of diminishing levels of astrological knowledge. In 1753 Ames felt obliged to provide a key to astronomical symbols, explaining that they were "not understood by my younger readers." Almanac makers like Ames adapted their texts to declining astronomical literacy, and often simplified the treatment of astrology.<sup>3</sup>

Though astrological learning was ebbing, contemporary observers agreed that magical practices were far from extinct. Even the harshest critics of the occult acknowledged that it retained a core of support among the common people. A New York physician writing in 1801 thought that astrology was "unfashionable" and "foolish," and singled out for special criticism the "miserable relic" of occult belief that persisted among rural farmers. Ezra Stiles followed his observation on the deteriorated state of the occult by noting that magic "subsists among some Almanack Makers and Fortune Tellers." And whatever their worries about their audience, almanac makers such as Ames continued to traffic profitably in astrology in the pages of their annual publications.<sup>4</sup>

What then was the state of magic in eighteenth-century America? Were the reports of its decline, as some have suggested, considerably exaggerated?<sup>5</sup> How can one get beyond anecdotal evidence to obtain a more complete and

considered judgment of its status? In recent years debate on these questions has intensified. Keith Thomas' *Religion and the Decline of Magic* (1971), the source from which most recent English-language scholarship on early modern magic flows, argues that magic declined steeply in England after the Restoration. Herbert Leventhal's *In the Shadow of the Enlightenment: Occultism and Renaissance Science in Eighteenth-Century America* (1976), extends the thesis of occult declension to eighteenth-century America.<sup>6</sup> However, since Jon Butler's influential 1979 article "Magic, Astrology, and the Early American Religious Heritage 1600-1760," most scholarship on magic in eighteenth-century America has emphasized its continuing vigor rather than its infirmity. Recent scholars of the occult in late colonial America, including Butler, Carolyn Merchant, Richard Godbeer, and John Brooke, argue that popular magic, untouched by the currents of the enlightenment, continued to flourish throughout the eighteenth century.<sup>7</sup>

These scholars emphasize the continuity between magical practice in the eighteenth century and that of earlier times. Butler and Godbeer criticize Thomas for generalizing from the ample evidence of the decay of magic among elites to argue for the waning of occultism in English society as a whole. Over the past twenty years scholars have uncovered much new evidence on the abundance of popular magical practices in the eighteenth century. There has been extensive new documentation of the role of cunning men and women (fortune tellers), alleged witches, treasure hunters, dream interpreters, and folk healers. Richard Godbeer typifies recent scholarship when he writes that while educated New Englanders learned to speak and think in the language of the High Enlightenment, most ordinary folk were unaffected by new intellectual currents and "continued to see the world as an enchanted place, filled with occult forces."<sup>8</sup> Jon Butler labels the bifurcation of learned and popular attitudes toward the occult as the "folklorization of magic." Butler writes that magic survived among the "largely illiterate and poor segments" of European and American society while often disappearing from "elite and literate segments of society."<sup>9</sup> The "folklorization thesis" certainly is congruent with much of the available evidence. Surely magic and the occult had little intellectual chic. Nathaniel Low echoed a familiar theme among almanac makers when he wrote in 1762 that "all who write fashionably at this Day, condemn [astrology] . . . as nothing but a meer whim, and all who pretend to knowledge of it, are derided and set as nought as nothings but a parcel of Fantasticks that are with their insipid Delusions endeavoring to impose on the Publick." Thus, Low claimed he intended his almanac only for "those Poor and Illiterate (that are not so biased against the art as the Multitude are)." It is intriguing that Low casts the division not between the learned and the popular classes, but between the "multitude" who have rejected astrology, and those few poor and illiterate stragglers who have not.<sup>10</sup>

But in many respects the sharp cultural divide posited in the “folklorization thesis” is quite problematic. It requires popular folk magic to remain, so to speak, “hermetically” sealed from the influence of the broader culture of Enlightenment over the course of the eighteenth century.<sup>11</sup> But rather than increasingly being isolated, it was increasingly hard to distinguish the purveyors of the culture of popular magic from the disseminators of the Enlightenment. Consider once again Nathaniel Low’s 1762 almanac. After criticizing the learned for their rejection of magic, he went on to note that while his almanac used the best rules of experienced astrologers, “however the Weather is uncertain.” He refused to take responsibility for the accuracy of his predictions, claiming only that he had passively employed the established rules for weather astrology. His loyal readers, Low announced, followed his prognostications at their own risk. Was Low a supporter or detractor of magic? Low’s skin-deep allegiance to occultism was typical of many defenders of magic in eighteenth-century America. Much of the evidence for occult survival reveals on closer examination doubts and confusions about magical practices.<sup>12</sup>

The coming of the ideals of the Enlightenment led to a disenchantment of magic and occultism in eighteenth-century America. There were many paths toward the disenchantment. For some, the disenchantment was an aspect of the High Enlightenment, and led to an outright rejection of magic and the occult in all its forms. But for many others, like Nathaniel Low, the disenchantment had more equivocal results. Many remained attached to some forms of magic, while at the same time proclaiming their allegiance to the principles of the Enlightenment. Some tried to reconcile these apparent contradictions; some did not. But in different ways and to varying extents, the disenchantment influenced almost all persons of European background in early America. Like the “Great Awakening,” the disenchantment was one of the central cultural events of eighteenth-century America. If its public manifestations were subtler, the changes it wrought were in many ways as epochal.

As used by Max Weber, who introduced the notion of disenchantment to the literature of sociology, most notably in his essay “Science as a Vocation,” the “disenchantment of the world” (*Entzauberung der Welt*) was one of the chief characteristics of modern life.<sup>13</sup> One of the main consequences of the “disenchantment” for Weber was the decay of a socially shared sense of the supernatural and the magical. The disenchantment resulted in the diminution of the social strength of the magic and the occult, even when such private beliefs remained widespread. It is, as Weber wrote, the “retreat from public life” of the older supernatural values that is the main measure of the disenchantment. In its wake, conceptions of magic became, as Roy Wallis and Steve Bruce argue, increasingly “individualized, fragmented, and privatized,” and occult belief became more particularized and sectarian.<sup>14</sup>

The hold of occultism on popular culture grew increasingly tenuous after 1700. The efforts to effect a "reformation of manners" in New England and elsewhere, in part by marginalizing the occult, slowly began to bear fruit.<sup>15</sup> In the eighteenth century, the common culture of magic had to survive in the face of the indifference and, more often, the open hostility, of almost every important institution in American society. Keith Thomas, echoing Emile Durkheim, has written that in seventeenth and eighteenth-century England, "magic had no Church, no communion symbolizing the unity of believers." Neither had it an empire, a nation, a mercantile partnership, a political faction, a newspaper, nor a classroom. As a whole, the practice of magic was increasingly peripheral to the broader developments in American culture.<sup>16</sup>

The two most important educational institutions in colonial society, the meeting house and the schoolhouse, both substantially expanded their reach in the eighteenth century, and both imparted a strongly anti-magical and anti-occult message. The progress of natural theology among Latitudinarian-minded Anglicans and the proto-Unitarian New England "Old Lights" favored a divine economy in which God governed best by governing least, by refraining by the display of any supernatural providential intervention in the course of nature. On the other hand, the aggressive assertion of the sovereignty of God by evangelical Christians accepted supernaturalism, but increasingly saw any extra-Christian magic (such as astrology) as an affront to divine power. Traditional magic—hermetic, occult, and largely operating outside of Christian sanction—had no place within either the secularized universe of the High Enlightenment or the Christocentric cosmos of the evangelicals.

Magic was also without a secure haven in the literacy and educational culture of eighteenth-century America. By the end of the century, male literacy rates in New England approached ninety percent, while those in the middle and southern states lagged only somewhat behind. Church adherence rates likewise had steadily increased over the course of the century.<sup>17</sup> Samuel Miller in 1803 described eighteenth-century America as a place of an "unprecedented diffusion of learning," when "elements of literature and science descended from the higher classes of society . . . to the middle, and in some instances, the lower orders of men."<sup>18</sup> David Hall has written of the precarious nature of verbal culture in a literate society in which "oral knowledge is always touched by print." The traditional culture of magic in eighteenth-century America was verbal, and its remaining adherents increasingly partook of a new, dynamic, and resolutely anti-occult intellectual world.<sup>19</sup>

For Weber and others, the long term consequence of the disenchantment was the "rationalization of modern life." In the eighteenth century the disenchantment did not so much give birth to modern rationality as to a teeming intellectual and cultural confusion and eclecticism, in which an extraordinarily wide range of views on the occult and magic had simultaneous currency.

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One of the best places to witness the changing popular reception of the occult and magic is within the pages of the early American almanac.<sup>20</sup> For one thing, as a staple of the colonial press from its beginnings in Massachusetts in 1639, almanacs form a particularly abundant print source. By 1750 over fifty separate almanacs appeared in the colonies annually. By 1800 the number of different almanacs printed annually exceeded 125. Eighteenth-century almanacs had average annual print runs of four to five thousand copies. As early as 1707, a Philadelphia almanac maker wrote of a rival who was printing 5,000 annual copies of his almanac. The pseudonymous "Frank Freeman" considered a run of 3,600 for a 1767 New York almanac a "small impression." The almanacs of Isaiah Thomas had print runs of 3,300 to 4,000 in the early 1780s. On the high end, Robert Bailey Thomas annually sold well over 20,000 copies of the *Farmer's Almanac* in the 1820s, while Nathaniel Ames' almanacs had an annual circulation of between 50,000 and 60,000 at the height of their popularity in the 1750s and 1760s. If we take a fairly conservative estimate of 4,000 copies per edition, by 1800 there were half a million almanacs printed annually, a figure that approaches one per household.<sup>21</sup>

Because of the widespread circulation of almanacs, their readership extended to the peripheries of the literate. As early as 1683, Cotton Mather wrote that the almanac came "into almost as many hands as the *best of books* [the Bible]." Later almanac authors echoed this observation. One critic of almanacs ruefully noted that almanacs "more generally spread around the country than perhaps any other kinds of books." Remote rural communities at times appointed one person to go to the nearest bookseller and purchase sufficient almanacs for everyone in the town. No genre of print in eighteenth-century America had as wide or general circulation as the almanac.<sup>22</sup>

The almanac was a vernacular genre which provided information on a range of topics, from farming and road conditions, currency exchange rates, the tides, and the positions of the planets, as well as the future states of the weather. The almanac was also a vehicle of education. The first published account in the colonies of the Copernican hypothesis appeared in an American almanac. From Benjamin Franklin to David Rittenhouse a sizable number of scientists used the almanac as a means of scientific popularization.<sup>23</sup>

But as Jon Butler noted, the almanac was also the main print source for disseminating occultism in early America. Surely astrology and lunar lore, the most universally accepted of all of the traditional magical arts, had no sturdier institutional redoubt. The astrological features in the standard almanac were numerous, starting with the centerpiece of all almanacs, the astrological and astronomical calendar, known as the ephemeris. Almanac makers used long-standing astrological rules to fashion weather predictions. Discussions of

farming and husbandry often touched on astrological themes, as did many of the essays on scientific issues penned by almanac makers. Perhaps the best-known artifact of astrology in the almanac was the Man of Signs, primarily used as a key to lunar-astral bloodletting (the bleeding of animals) and gelding. The apparent contradiction between the two primary functions of the almanac—as a forum for occultism, and a source of scientific information—would become more obvious, or at least more noticed, over time.<sup>24</sup>

The almanac provides one of the most useful methods of going beyond isolated examples of occult survival and decline to achieve some general measure of the status of the occult in early America as a whole. Perhaps the strongest general evidence for the disenchantment is that as almanac circulation increased in the late eighteenth century, the books' occult contents steadily decreased. At the very least this indicates that audiences continued to purchase and respond favorably to almanacs that were largely free of occultism. The impact of the disenchantment on readers of almanacs was slow and cumulative. By providing repeated examples of how to either reinterpret or entirely discard old magical beliefs, almanacs offered a model for readers on how to adapt to the Enlightenment.

A comparison of two contrasting approaches to astrology—those of John Foster in 1680 and Jared Eliot in 1761—demonstrates the effect of the disenchantment on American almanacs. As the first printer in Boston (all previous Massachusetts imprints were published at Harvard College), Foster is a significant figure in the history of Massachusetts publishing. Though Foster was a Harvard graduate, Foster's almanacs were more popular in character than the ones that had appeared at the college since 1639. Foster was a transitional figure who observed the Puritan strictures against printing weather predictions in almanacs. But he did bend the anti-astrological conventions of early Massachusetts printing to the extent of including in his 1680 almanac the first guide to weather astrology published in North America, the "Natures and Operations of the Seven Planets with the Names given them by Astronomers." Foster described the planets not as physical entities, but as packages of essential qualities, using the four elements and humors, the first principles of Renaissance astrology and Aristotelian physics. For Foster, Saturn was cold and dry, while Jupiter was hot and moist. Mars was "hot and dry in excess, causing extream heat in Summer, and warm air in Winter, likewise Storms of Rain, Hail, Thunder, Lightning." Foster built his astrology around a series of dyads, such as "hot/dry" and "cold/wet." In occult thinking of this sort, as Brian Vickers has argued, "nature is significant not in itself but as a system of signs pointing to other categories" possessing transcendent metaphysical significance.<sup>25</sup>

Some seventy-five years later Jared Eliot, a pioneer of scientific agriculture, defended astrology in a manner vastly different from Foster. Eliot, a Connecticut

minister, graduated from Yale College in 1706, and received a Master of Arts degree from Harvard in 1709. Thereafter he was a physician, as well as minister of a Congregational church in Killingworth, Connecticut. Eliot's work on scientific agriculture reflected the efforts of the Royal Society of London to improve agricultural and industrial production by the introduction of new technologies and a new "experiential" method that carefully tested the efficacy of the new techniques.<sup>26</sup>

Eliot, like many influenced by the Baconian emphasis on practical knowledge, considered the possibility that traditional farming practices, including those pertaining to the influence of the moon, had some underlying validity. In this vein, Eliot's 1761 treatise, *Essays on Field Husbandry*, contained a discussion of whether the old practice of cutting brush when the moon was in the constellation Leo was an effective means of preventing it from growing back. Later almanac makers frequently reprinted Eliot's positive evaluation of lunar influence on agriculture.<sup>27</sup>

Yet there is a defensiveness in Eliot not present in Foster. Any support for astrology, Eliot acknowledged, carried with it the "Imputation of Ignorance and Superstition." As a result, Eliot's account of astrology begins with an emphasis on the human-derived nature of the divisions of the zodiac. The division of the sky into constellations is not "the work of nature, but of Art, contrived by Astronomers for Convenience," and as such does not represent any actual partition in the heavens. Eliot thereby expressed a clear rejection of the occult conviction that underlying natural metaphors (such as the constellations) have a physical reality. Nonetheless he found, to his satisfaction, that the old astrological rules worked. Like many eighteenth-century defenders of astrology, Eliot sought the prestige of Newton's explanation of the lunar pull on the tides to support the folk wisdom. "It is well known," he argued, "that the Moon's Attraction hath great Influence on all Fluids," presumably including those in bushes and shrubs. The center of his defense was the practical and empirically collected evidence in favor of the lunar influence, painstakingly gathered from repeated testings, a process Eliot and others of his time called "experience."<sup>28</sup>

The distinction between Foster and Eliot is the difference between astrology understood as an occult doctrine mixed with an Aristotelian cosmology, and astrology viewed through the lens of Baconian and Newtonian science. To explain astrology Foster invoked the grand cosmic symbolism of the four elements and analogically transferred the properties of the planets and the elements to the weather. The same planet also enhanced the hot/dry choleric temperament or humor in individuals, and governed fates from personal love life to the national destiny. A single astrological relationship shaped all of the happenstances of life.<sup>29</sup>

In Eliot, Aristolian cosmology was nowhere to be found. Gone as well was the common linkage between all of the occult sciences. His interest in astrology was limited to a very specific instance of planetary influence, that of the moon on undergrowth. Whether Eliot was right or not had no bearing on, say, the validity of alchemy or supernatural providences. Eliot's test did not even corroborate the usefulness of the lunar correlation he discusses for other purposes more closely resembling his, such as lunar-based weather forecasting or animal husbandry. Most importantly, where Foster offers no justification for weather astrology beyond the symbolism itself, Eliot rests his case on the empirical testing of evidence. If Foster's conception of astrology was primarily symbolic Eliot's was predominantly instrumental, with little or no symbolic content.

The relative importance of the symbolic and non-symbolic components of early modern magic has been a matter of considerable debate. For Keith Thomas in *Religion and the Decline of Magic* the bewildering abundance of early modern magical practices lacked "philosophic underpinnings" and formed "a collection of miscellaneous recipes, not a comprehensive body of doctrine." Anthropologist Hildred Geertz argued instead that early modern magic was essentially symbolic in character. All early modern magic, to a greater or lesser extent, she argues, partakes of a symbolic framework that imparts a "culturally unique image of the way in which the world works," a template that provides a key for decoding the relationships between people and the objects of nature.<sup>30</sup>

There is an ongoing tension between the symbolic and instrumental dimensions of early modern magic. Magical acts are never purely symbolic or practical. As Richard Kieckhefer astutely observes, "to assume that magic either has power to coerce external forces or else has nothing but subjective efficacy is to create a false disjunction." But the balance between the symbolic and practical components of magic change over time. Learned magic tends to be highly symbolic, while popular magic is often pragmatic and result-oriented. Learned enlightened anti-magic took its aim squarely at the symbolic contents of traditional occultism, and often championed "popular magic" shorn of its symbolic dimensions. Over the course of the eighteenth century learned anti-occult explanations of the efficacy of magic steadily filtered into popular discourse.<sup>31</sup>

Another way to state this is that those who defended magic in print in eighteenth-century America increasingly viewed it as a form of recipe knowledge, rather than as a form of occult symbolism. Recipe knowledge is derived from specific formulas, which establishes a distinct casual link between a set of antecedent conditions and a consequence, in the form "x, then y." (A typical example of astral recipe knowledge in eighteenth-century almanacs is this advice from the 1799 *Farmer's Almanac*. "January 6. At this quarter of the moon cut fire-wood, to prevent its snapping.") When viewed as recipe



knowledge, magic is a collection of related, but distinct and practical rules, without a superintending purpose or connection.<sup>32</sup>

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The advance of the disenchantment in early American almanacs occurred in two overlapping phases between 1650 and 1800. In the first phase, 1650 to 1730, occult astrology continued to appear in almanacs, but was increasingly subject to a caustic scrutiny. There was a rising sense of the inadequacy of the occult as a predictive science. While early almanac makers challenged the occult, rarely did they reject it outright. Thus, the almanacs often give the impression of inconsistency, with little attempt to reconcile seemingly incompatible occult and anti-occult discourses. In the second phase, occult interpretations of astrology were rejected, and astrology was defended solely on a naturalistic basis.<sup>33</sup>

Almanac makers were extremely well placed to respond to the diverse currents of natural and scientific thought in the late seventeenth and eighteenth centuries. Academic, popular, craft, and folk influences all converged in the early modern print shop. The almanac was the perfect vehicle for the ambitious autodidact to voice his opinions. Those who used almanac publishing as a platform to recognition and success included John Tulley, Daniel Leeds, Nathaniel Ames, Robert Bailey Thomas, and, most famously, Benjamin Franklin. It was a craft for young men. Daniel Leeds and Nathaniel Mather began publishing their almanacs at 16, Daniel George at 17, and Nathaniel Ames at 18. Benjamin Franklin and Robert Bailey Thomas were old men of 26 at the time that their first almanacs appeared.<sup>34</sup>

Franklin's early education (and self-education) provides a clue into the jumble of intellectual influences that shaped many almanac makers. While still in Boston Franklin assimilated a number of religious, philosophical, and scientific influences, transforming the sermons of Cotton Mather in his early "Silence Dogood" letters into a religion of busyness and good works. Religious authors ranging from the "catholick" congregational ministers in Massachusetts, or the radical freethinking authors such as Earl of Shaftesbury and Anthony Collins influenced the 1725 *Dissertation on Liberty and Necessity*, all inspired Franklin with conceptions of the universe that emphasized its beauty, unity, and reasonableness, and its accessibility without relevation.<sup>35</sup>

The Junto Club, the group of young artisans who banded together in 1727, provide another clue into Franklin's early development. The alternative name of the society, the Club of the Leather Aprons, hints at their connections to freemasonry. (Franklin later became an active freemason.) If occult and hermetic traditions had played a crucial role in the shaping of freemasonry, the crystallization of freemasonic ideology in early America had far more to do

with early enlightenment notions of universal benevolence and Newtonian science. Like the almanac, eighteenth-century freemasonry was originally built on occult foundations. But these origins were increasingly forgotten as both the almanac and the freemasons became key disseminators of enlightened principles. Almanac-makers, like others caught in the contending fashions of the time, often found themselves tugged in opposite directions by the occult and anti-magical currents in the broader culture. In his *Autobiography*, Benjamin Franklin wrote of William Parsons, one of the members of the Junto, a club of young self-improvers, as one “bred a Shoemaker, but loving Reading, had acquir’d a considerable Share of Mathematics, which he first studied with a View to Astrology that he afterwards laugh’d at.” There were many almanac makers—humble of background and mathematically adept—who faced similar choices.<sup>36</sup>

The very process of disenchantment, with its intensified a sense of the growing estrangement between occult and non-occult ways of thinking, often fostered searches for intellectually respectable if short-lived syntheses between the two increasingly distinct world views. It was a time of syncretistic thinking, in which many tried to embrace the Newtonian universe on the one hand and aspects of hermeticism on the other. Isaac Newton himself is the best example of this. The vacillations between the “Newtonian” and the occult world views were not the product of backwater parochialism, but were an essential component in the dissemination of the early enlightenment itself. While Newton dallied with hermeticism, occultism and older Aristotelian ways of thought left their marks on the intellectual leaders of colonial America, such as Increase and Cotton Mather, or Charles Morton, a contemporary professor at Harvard College. And the humbler class of persons who comprised the ranks of the almanac makers and readers in eighteenth-century America grappled with the same problems as well.<sup>37</sup>

Samuel Clough, a Boston almanac maker from 1700 to 1708, provides a good example of the vacillating style of the early eighteenth-century almanac. Clough’s intellectual insecurity was no doubt compounded by uncertainty about his social status, a common problem for “self-made” men. He wrote in his 1700 almanac that he was neither a “professor or practitioner” of mathematics. When his calculations were criticized, he replied with asperity that some “will be pleased with nothing that will come from one not brought up to Learning, as it ‘twere impossible that any such should ever achieve by their own Ingenuity.” Clough also appeared to be uncertain about the status of weather astrology. In 1699, recognizing that “the People have been us’d to it in Almanacks of late,” Clough included weather predictions, but also included a warning. “The very Rules that the foretelling of the weather is grounded upon are not to be trusted or depended upon.” Seven years later he took an opposite tack, writing, “the predictions of the weather from the Motions &

Aspects of the heavenly bodies, has been despised by many, as a Science built on Sand, and therefore I think my self obliged to say a word or two in defense of it."<sup>38</sup>

Few almanac makers were without some ambivalence toward traditional occultism. Daniel Leeds, a Philadelphia almanac maker from 1687 to 1713, was among the most active and public disseminators of occult thinking in early America. Leeds had considerable occult learning, and in his almanacs quoted the Hermetic corpus of writings, Renaissance occultists, and seventeenth-century English astrologers such as William Lilly. But Leeds also consistently expressed doubts concerning occult astrology. In his 1693 almanac, for example, after a fairly detailed account of astrological principles, he added two fairly standard deflations of occult astrology offered by almanac makers, namely, that predictions "miss as often as they hit" and that if there was such "Weather [so]me where, though not here, and you will oblige me another Year."<sup>39</sup>

This was not the first time Leeds had criticized astrology. In 1688, in a curious volume entitled *The Temple of Wisdom in the Little World*, he published, among others, the work of the German theosophist and occultist Jacob Boehme. This publication led to Leeds' expulsion from the Quaker movement. However, this compilation also contains the earliest extended critique of astrology and the occult published in America. After the selection from Boehme, Leeds added a personal postscript, which said of occult knowledge that "there is nothing more pernicious, nothing more destructive to the well-being of men, or to the Salvation of our Souls." As for astrology, he pointed out that predictions based on its principles frequently failed to come to pass, and, conversely, that many great events occur which are not presaged in the stars. It is impossible, argued Leeds, for the "rules of Art . . . to give any Certain Judgement of their Effects." His attitude toward astrology was that it was valid in the abstract, but unworkable in particular instances: "There is none that practice it, who rightly understand it, the Rules being partly founded upon a false and uncertain ground." He ended his attack on occultism with some sharp commentary on almanacs:

Let them whose Brains are sick of the Disease  
Be Slaves unto an Ephemerides.<sup>40</sup>

Another almanac maker in eighteenth-century Philadelphia who went through several phases in his attitude toward occult astrology was Jacob Taylor, whose almanacs appeared on and off between 1702 and 1746. In his youth, he was a member of a circle of occult adepts which likely included Daniel Leeds. As he grew older, however, his "fancy for Astrology was grown very cold," and within a few years he came to reject his former associates as "Sons

of Vanity and Ignorance.” He complained that the members of the occult circle could neither “write plain English or spell Common Words.” Only Taylor’s earliest almanacs show indications of a strong attachment to occult teachings. By 1711 he had developed an intermediate position, opposed to the excesses of both “blind superstition” and “mad skepticism.” Fifteen years later he was firmly in the camp of the skeptics. Taylor challenged a central tenet of occultism, the belief that nothing is accidental, and the related notion that all signs have portentous significance. He told the tale of a candle sent aloft on a kite, a mysterious burning flame, interpreted by a group of pompous savants as a sign of the final conflagration, the downfall of Islam, and a portentous comet. The moral was that:

Coxcombs prate  
Of Planets, Signs, they know not what  
And yearly vend their empty Jargon  
More base than lowest Note of Organ . . .  
Our Stargazers (Have at ‘em!)  
Who scarce know how to split an Atom;  
Nor can the mighty Sons of art  
Take the Dimensions of a Fart.<sup>41</sup>

Taylor’s campaign against the occult culminated in his final almanac in 1746, a heavy-handed diatribe against astrology, the “Brat of Babylon . . . this filthy Superstition of Heathens.” Taylor offers a number of arguments against astrology (as well as *ad hominen* attacks on astrologers) concluding that it has been “exploded as mortal Poison to Truth and useful knowledge.”<sup>42</sup>

Yet Taylor did not repudiate the idea that planets could exert an influence on the earth and its inhabitants. He based his argument, like most eighteenth-century defenders of astrology, on analogies to the tidal effects of the moon. Neither did Taylor discount the notion that fortune-tellers or cunning men could foretell the future or exhibit strange abilities. But he denied they used occult powers; “they pretend to know by their Art (but there is no such art).” Taylor explained their ability through their contact with angels. As for “modern Sadducees, or palliated Atheists, who laugh at the Notion of Spirits,” Taylor regarded “their derision no more than the grinning of Apes.” Taylor’s commitment to a radical disenchantment entailed neither a rejection of the outward effects of astrological influence on earthly affairs nor a retreat from his fervent piety. Indeed Taylor’s opposition to occultism led to an intensification of his religious belief, since only the power of God—or his angelic messengers—could be the source of all that was marvelous in the universe. In Taylor, currents of the radical enlightenment and Whitefieldian evangelicalism came together, as his notion of divine omnipotence permitted no sources of supernatural

power outside of God himself.<sup>43</sup>

Like his Pennsylvania peers, Massachusetts almanac-maker John Tulley had complex and ultimately unresolved attitudes toward the occult. Tulley's almanacs, which appeared from 1687 to 1702 were the first in Massachusetts (and therefore the first in British North America) to include weather predictions.<sup>44</sup> Though relatively little is known about Tulley, like Leeds and Taylor he seems to have been both well-versed in the occult while retaining his skepticism. Tulley was a non-Puritan, who came to New England after the Great Migration, settling in Saybrook, Connecticut. This was in the heart of Connecticut's "sectarian coast," a hotbed of heterodox occultism. Instructed by local persons of learning in astronomy and mathematics, and presumably astrology as well, his almanacs developed a reputation in Puritan New England for impiety and astrological advocacy. Though he was indeed an adherent of astrology in his almanacs, he leavened his accounts of astrology with profound doubts about the reliability of occult predictions. In 1688 Tulley noted rather cautiously that "what is hinted about the weather is guessed at from the Signs, Planets, and their aspects, ancient writers have often been deceived about the Weather, and therefore I do desire a charitable censure concerning [them.]" Elsewhere in the same almanac he timidly offered that "all predictions do to this belong/That Either they are right, or they are wrong," and mocked the predictions of "Ass-trologers."<sup>45</sup>

Tulley's most extravagant astrological prediction came in 1694 when he offered a somewhat premature prognostication of the death of Louis XIV, going beyond the somewhat tolerated terrain of weather astrology. The next year another New England almanac-maker, Christian Lodowick, attacked Tulley for the "Soul bewitching Vanity of Star-Prophecy." (Despite Lodowick's cogent objections to weather astrology, he also included weather predictions in his almanac.) In response to Lodowick, Tulley employed the usual excuses of almanac makers, blaming the errant prediction on his printer, and emphasizing the inaccuracy of traditional astrological rules. He asked readers to keep in mind that all predictions can be off by a few days or a few hundred miles without seriously marring their accuracy. Finally, Tulley acknowledged that God can supersede all astrological weather prediction.<sup>46</sup>

The ambiguous presentation of the occult in early almanacs is perhaps most evident in the treatment of the Man of Signs, or the "anatomy," as it sometimes was called. As a guide to astrological medicine, it related the internal organs of the body to specific constellations. According to various estimates, the Man of Signs appeared in about three-quarters of the almanacs published around 1760, then declined to about one-third by the end of the century. Often accompanying the Man of Signs was disparaging commentary indicating that its presence was solely due to the interest in astrology of less educated readers. For example, Samuel Clough's 1703 almanac proclaimed:

The Anatomy must still be in  
Else Th' Almanac's not worth a pin  
For Country-Men regard the Sign  
As though "Twere Oracle Divine.<sup>47</sup>

Many have read such commentaries as an indication that skeptical almanac makers were including occult material against their better judgment.<sup>48</sup> While there was no doubt some truth behind these protestations, this is at best only a partial explanation for difference shown by almanac makers. The underlying recipes for the Man of Signs, the positions of the Moon in the Zodiac, appeared in almost every almanac well into the nineteenth century, even in almanacs that failed to print the Man of Signs itself. (Robert Bailey Thomas' *Farmer's Almanacs* rarely printed the Man of Signs, but regularly contained a column on the "moon's position" that listed the parts of the body most susceptible to lunar influence.) Moreover, the relationships contained in the Man of Signs remained constant, and consisted of ancient astral lore well known in Roman times. There really was little reason to print it annually.<sup>49</sup>

What the Man of Signs' detractors objected to was not the accompanying information about the moon's influence on the body, but the illustration itself. The standard representation of the Man of Signs was of a man with the constellations pointing to parts of his body. This drawing, which had a history dating back to the Middle Ages, depicted the occult relationship between the microcosm of the body and the macrocosm of the heavens. By the eighteenth century the underlying occultism of the image of the Man of Signs had become an embarrassment. It invoked an entire symbolic framework for interpreting the universe that was increasingly the subject of ridicule. (This may be one reason for the association of the Man of Signs with bumpkinish rusticity.) Rather than taking the occult world view at face value, it was easier to either not print the illustration, or print it with a mocking commentary. In either case the message was clear—trust the practical recipes, but not the related occult symbolism.<sup>50</sup>

As a whole, early almanac makers who employed the occult treated it as a lesser form of knowledge, indeterminate in its operations, uncertain in its results. This was a short step from treating the occult as a form of fiction. The notion of the occult as fictional, a lie binding author and audience, culminated in the Poor Richard almanacs of Benjamin Franklin. Franklin modeled Poor Richard on Joseph Addison's and Jonathan Swift's pseudo-astrologer, Isaac Bickerstaff. Many early works of fiction, such as Daniel Defoe's *Robinson Crusoe*, Swift's *Gulliver's Travels* or some of Franklin's own hoaxes, displayed a carefully crafted verisimilitude, playing with the epistemological expectations of readers to find true accounts in textual narratives. With Poor Richard, Franklin again questioned the boundaries between the factual and the fictional. He took the

almanac, a very practical and utilitarian genre, and reveled in its unreality and fictional nature. Franklin undermined the occult through an ironic affirmation of its pretensions to knowledge.<sup>51</sup>

In his depiction of Poor Richard, Franklin generally contrasted the impractical fictions of the ne'er-do-well astrologer with the earnest truths about diligence and hard work displayed elsewhere in the almanac. The Poor Richard persona borrowed many of the characteristic rhetorical devices of Franklin's fellow almanac makers—a tendency to quarrel with his rivals, a certain superciliousness in tone, lamentations about the fallen state of astrology—and extended them to the point of ridiculousness. In 1753, for instance, Poor Richard complacently stated of his weather prognostications “that there's not a single One of them . . . but when comes to pass *punctually* and *precisely* on the very Day, in some place or other on this little *diminutive* Globe of ours.” In 1738 Poor Richard's Wife Bridget, concerned about the lack of sufficient good weather in the almanac, brought editorial intrusion to new levels when she “scatter'd here and there, where I could find some room, some *fair, pleasant & sunshiny* & C., for the Good-Women to dry their Clothes in.”<sup>52</sup>

At his slyest, Franklin criticized other almanac makers for doing what he himself did so well—providing a mixed message about the validity of astrology. In the course of Franklin's famous running joke about the alleged death of his rival Titan Leeds (the son of Daniel Leeds), Poor Richard criticized Leeds for his negative comments on astrology. Like his father, Titan Leeds combined sympathetic comments on astrology with anti-occult jests. Franklin wrote in 1736, “'Tis plain to every one that reads his two last Almanacks (for 1734 and 35) that they are not written with the *Life* his Performances use [sic] to be written with . . . nothing smart in them but [Samuel Butler's] *Hudibras's* Verses against Astrology at the Heads of the Months in the last, which no Astrologer but a *dead one* would have inserted.”<sup>53</sup>

\* \* \* \* \*

By the middle decades of the eighteenth century, it is difficult to find any almanac maker who openly defended occult astrology. Even those most closely tied to the traditions of occultism questioned their own inclusion of such material in their publications. Joseph Stafford, a Connecticut physician, fortune-teller (and sometime fortune-hunter), and dedicated occultist, wrote almanacs between 1737 and 1744. Only once did Stafford attempt to explain the principles behind astrology in his publications. He wrote in 1739 “both Scriptures . . . and large Experience,” (that is, empirical verification) demonstrated the validity of astrology. Stafford concluded by conceding that “God does many times act quite contrary to them [the rules of astrology] in the Government of the world,” an acknowledgment of the superiority of both the divine and natural realms to the working of the occult.<sup>54</sup>

Similarly, Nathaniel Bowen, a Massachusetts almanac maker of the 1720s and 1730s who was quite familiar with the astrological literature of the previous century, took pains to separate himself from occult interpretations of astrology. In his 1727 almanac he defended weather astrology, but also conceded that there was no certain knowledge of the future. All astrological knowledge, concluded Bowen, came from empirically obtained "dear-bought Experience." He contrasted his conjectural version of astrology with the spurious certitude of occult astrologers. Bowen suggested that the latter were in league with the devil and proposed—probably not with total seriousness—that hanging occult astrologers for witchcraft would be a fitting punishment.<sup>55</sup>

Five years later, in his final almanac, Bowen laid down his pen with the complaint that "the Contempt with which a writer of Almanacs is looked on, and the Danger he is in, of being accounted a Conjuror, should seem sufficient to deter any man from publishing anything of this kind." Whatever the true views of Bowen and Stafford on the occult, both men felt it necessary to emphasize the anti-occult basis of their astrology in public statements. Public dissembling was quite common among believers in the occult in the early modern period. Michael Winship argues that Cotton Mather likely disguised his continuing allegiance to supernaturalism after the mid-1690s in an effort to make his work seem more in tune with the scientific currents of the era. The pressure on people with public reputations of any sort to reject occultism was great. Ridicule and the accompanying loss of social respectability was one of the great weapons of the Enlightenment.<sup>56</sup>

By the middle of the century, the justification of weather astrology, as a natural and anti-occult science was increasingly common among almanac makers. This second wave of the disenchantment in almanacs crested during the second half of the eighteenth century. The most notable and influential effort along these lines was that of Nathaniel Ames, of Dedham, Massachusetts. Ames who published an annual almanac from 1727 to 1764, and was probably the most successful almanac maker in eighteenth-century America, selling upwards of 50,000 copies annually at the height of his popularity.<sup>57</sup>

Ames had an extensive knowledge of occult astrology. He frequently cited the works of seventeenth-century astrologers such as William Lilly and Henry Coley. In 1730 he reprinted a poem by Coley on the "mystique tye" between the heavens and the earth. Ames was not afraid to use judicial astrology (the astrology of personal fate), and he defended it late into his career. In one almanac he even explained the coming of the Great Awakening as a consequence of the conjunction of Jupiter and Saturn. Despite his background, Ames became a dedicated opponent of occultism, unwavering in his commitment to the reconciliation of astrology with the New Science.<sup>58</sup> He published the *Man of Signs* only twice, very early in his career, and with disparaging commentary. He promised to "use no Charms, nor filthy Conjurations/But sublime



Geometric Demonstration" in his almanac. Aristotelian physics has no place in Ames' almanacs. The boundlessness of the Newtonian universe fascinated him. He saw the planets as solid, habitable, and quite distant globes, and was intrigued by the possibility of life on other planets. Ames even speculated on the likely physiques and mental processes of Venusians and Martians.<sup>59</sup>

Ames provided several non-occult explanations for astrology. He rejected the idea that occult powers were qualitatively distinct from the regular forces of nature. Magicians and so-called witches, Ames argued, were generally persons of advanced knowledge whose ability to manipulate nature through rational means awed the vulgar. Ames maintained that the planets influenced all terrestrial substances (the air, plants and animals, the human body) on the basis of a force analogous to lunar gravitation's pull on the tides. He attributed to the moon, often the least important planetary body in classical astrology, the most important heavenly influence on the weather, thereby discarding much of the traditional structure of astrology. Though he rejected the occult, he argued that popular weather lore provided a basis to reconstruct astrology. In a rather back-handed tribute to vernacular weather acumen, Ames maintained that "The Full Moon faces the World with so grand and serious a Look, that even Shepherds, and Plowmen, old Women &c., are not Ignorant of its Effects."<sup>60</sup>

This interest in popular lunar lore on the part of Ames and others reached its apogee with Herschel's Moon Table, a near-ubiquitous feature of American almanacs and magazines from 1800 to 1850. It purported to be the work of the eminent British astronomer Sir William Herschel, the discoverer of Uranus. In reality it was a codification of traditions that predicted the weather from the position of the moon. With the imprimatur of a famous scientist, and a concise tabular form, the table epitomized the transformation of occult astrology into rational recipe knowledge.<sup>61</sup>

For Ames, true astrology had existed in antiquity. Over the centuries, the art had become corrupted with occult accretions. Ames' astrology attempted to return Urania (the muse of astronomy) to her original condition, prior to her seizure by a "Barbarous Crew" whose "savage Rapes deflower'd her blooming Honour." This defilement reduced astrology to the level of witchcraft. By spurning the occult, and paying careful attention to the verification of weather prognostics through "Experience," Ames hoped to return astrology to its former standing as an empirical science.<sup>62</sup> This involved paying close attention to time-honored weather prognostics:

The long liv'd Patriarchs as their Flocks they Fed  
 Observ'd the Wandering Glories Over-Head  
 Trac'd all their Laws of Motion and from thence  
 By sage Experience learn'd their Influence.<sup>63</sup>

But Ames' attempted synthesis of astrology with Newtonian physics did not prove long-lasting. What one generation sees as a prudent compromise between old and new, the next is likely to reject as outmoded and insufficiently rigorous. The various attempts to recast astrology as an empirical science had little lasting impact. Though one could reduce astrology to rational recipe knowledge, it was another matter to prove to the satisfaction of objective observers that the correlations between astronomical formations and meteorological occurrences had a demonstrable link. The underlying rationale of astrology resides in the conviction of a transcendent connection between the planets, the weather, and human welfare. The systematic keeping of meteorological records confirmed none of the specific claims made for lunar or planetary influence on the weather. By 1820, even popular agricultural publications rejected the notion of the lunar influence on the weather and the growth of plants.<sup>64</sup>

By the late eighteenth century an increasing number of almanac makers rejected astrology outright.<sup>65</sup> The person who exemplified this trend was Robert Bailey Thomas, the author of the *Farmer's Almanac* from its inception in 1793 until his death in 1846. If Ames tried to provide new ways to demonstrate the validity of older beliefs such as astrology, Thomas argued that the new and thoroughly non-astrological understanding of nature had its roots in older theories of approaching nature. Starting with his first almanac, Thomas helped perfect the image of the sagacious New England farmer, mistrustful of book learning and abstractions, who grounded his wisdom in hard-earned empirical verification of recipe knowledge. Though Thomas rejected astrology as such, he used the remnants of such thinking, especially the belief in regular patterns in the weather and the agricultural year, to create a generalized notion of weather wisdom and practical farming, based on close observation of the annual weather cycle. For Ames popular weather recipes were conflated with astrology. Thomas went one step further, largely replacing astrology with meteorological folklore.<sup>66</sup>

What was strikingly absent from the *Farmer's Almanac* was any debate or discussion of astrology. The *Farmer's Almanac* was about farming and scientific agriculture, directed at people with their feet on the ground, and not at those with their heads in the stars. For Thomas, astrology was unimportant, at best the source of a few useful recipes. Though the weather predictions in the *Farmer's Almanac* had an obvious source in older notions of lunar cycles, Thomas almost never discussed this in print. Thomas' almanacs represent the triumph of the popular disenchantment, presenting a version of forward-looking New England folk culture that was rational, scientific, and free of entanglements with astrology or the occult.<sup>67</sup>

By the late eighteenth century almanac makers were directly commenting on the decline of occultism among their readers. A Philadelphia almanac in 1793 claimed that "the influence of the Constellations on the human body . . .

is now much considered. Even Aunt Deborah, though she yet *has her notions*, forgets to look for the sign when her advice is asked about bleeding.” For some the disenchantment led to a split between intellect and sentiment, a lingering attachment to magic by people who otherwise rejected occultism. Dudley Leavitt reported in his 1812 almanac that many people who rejected astrology as whimsical or conjectural still somewhat guiltily consulted the almanac to ascertain the positions of the moon. The effect of the almanac on popular culture was a slow and cumulative destabilization of the traditional role of magic and the occult.<sup>68</sup>

At the same time, the highly rationalistic version of the traditional New England magic culture in Robert Bailey Thomas’ *Farmer’s Almanac* did not represent the full range of vernacular attitudes toward magic and the occult in early nineteenth-century America. But then, no single approach did. Occultism played a smaller role in the vernacular culture than it had a century and a half earlier. For instance, Maine midwife Martha Ballard, a contemporary of Robert Bailey Thomas, was a practitioner of folk medicine and was certainly familiar with the older traditions of magic and the occult. While Ballard made use of astrology, like Thomas, this was only one element—and not a particularly important one at that—of her understanding of nature and medicine. As her biographer notes, Ballard’s medical practice lacked a single central theoretical framework. Her miscellaneous medical world view was a collection of heterogeneous recipes, culled from many oral and printed sources. Much like Thomas, Ballard saw traditional magic as a potential source of formulae, and little more.<sup>69</sup>

Other occult sciences, especially physiognomy, developed new disenchanted forms. At the same that popular compilations of magic lore such as the *Book of Knowledge* continued to print the traditional astrological drawing of the relation of facial features to the planets, physiognomy acquired a new respectability.<sup>70</sup> Samuel Miller in *The Retrospect of the Eighteenth Century* was, as we have seen, resolute in its opposition to occultism, but he saw much potential in non-occult physiognomy. Miller hoped that once the “unnatural connection” of physiognomy to the occult was ended, the science would provide a “power little short of complete intuition into the hearts, intentions, and intuitions of men.”<sup>71</sup> As Max Weber long ago pointed out, the disenchantment often involved the rationalization of irrational beliefs. Throughout the nineteenth century, rationalized physiognomy and its close pseudo-scientific relative, phrenology, had a large and loyal following. The belief in the underlying power of magic—the effort to gain power over nature and human activities through secret knowledge—long outlived the decay of occultism.<sup>72</sup>

The disenchantment won no final victory. Indeed, the belief and practice of magic remain an important part of American culture to the present day. If weather astrology has largely faded from print, in the less obviously falsifiable

form of predictions on personal fate and romantic involvements, astrology retains a wide audience, as any glance at a daily newspaper will confirm. The disenchantment of the eighteenth century was not the end of a process, but was the beginning of the continuing confrontation, adjustment, and redefinition of the boundaries between magic and the culture of scientific rationality.<sup>73</sup>

# Notes

1. The author deeply thanks Barbara Bianco, Patricia Bonomi, Jane DeLuca, Tami Friedman, Walter Friedman, David Jaffee, Robert Snyder and Daniel Soyer for their comments on earlier versions of the manuscript.

In this essay, magic refers to a form of social activity, the attempt to "exercise of a preternatural control over nature by human beings with the assistance of forces more powerful than they," Valerie I. J. Flint, *The Rise of Magic in Early Medieval Europe* (Princeton, N.J., 1991), 3. Magic is here further understood as the exercise of supernatural powers outside of the context and sanction of Christian practice; see Richard Kieckhefer, *Magic in the Middle Ages* (Cambridge, Eng., 1989), 8-16. The "occult" is used here to describe a belief system that acknowledges there are powerful "hidden" forces that fall outside of generally accepted explanations of natural phenomena, see Brian P. Copenhaver, "Natural Magic," Hermeticism, and Occultism in Early Modern Science," in David C. Lindberg and Robert S. Westman, ed., *Reappraisals of the Scientific Revolution* (Cambridge, Eng., 1990), 261-301, and Robert Galbreath, "Explaining Modern Occultism," in Howard Kerr and Charles L. Crow eds., *The Occult In America: New Historical Perspectives* (Urbana, Ill., 1986), 15-20. It is important to recognize that while magic and the occult are broadly overlapping concepts—most occultists believe in the reality of magic, and most practitioners of magic acknowledge the occult—they are not identical. One can perform magic outside of the context of occult belief, and not all believers in the reality of occult forces defend or practice magic.

2. Ezra Stiles, *Literary Diary of Ezra Stiles*, ed. Franklin B. Dexter (New York, 1910) I, 385-6; Samuel Miller, *A Brief Retrospect of the Eighteenth Century* (New York, 1803), I, 430-431.

3. Nathaniel Ames, *An Astronomical Diary; or An Almanack for . . . 1753* (Boston, 1752); Nathaniel Ames, *An Astronomical Diary; or An Almanack for . . . 1751* (Boston, 1750).

4. "Observations on the Influence of the Moon on Climate and the Animal Economy," *Medical Repository and Review of American Publications*, 4 (1801), 286-287, cited in Herbert Leventhal, *In the Shadow of the*

*Enlightenment: Occultism and Renaissance Science in Eighteenth-Century America* (New York, 1976), 38.

5. Jon Butler has suggested that Stiles' perception of the decay of the occult was the result of his personal antipathy toward magic, *Awash in a Sea of Faith: Christianizing the American People* (Cambridge, Mass., 1990), 88. But Stiles, a frequent dabbler in the kabbalah and alchemy, was quite open to the consideration of occultism; see John L. Brooke, *The Refiner's Fire: The Making of Mormon Cosmology, 1644-1844* (Cambridge, Eng., 1994), 92-93; Leventhal, *In the Shadow of the Enlightenment*, 251-257.

6. Keith Thomas, *Religion and the Decline of Magic* (New York, 1971), 641-668; Leventhal, *In the Shadow of the Enlightenment*, 261-271. See also Bernard Capp, *English Almanacs, 1500-1800: Astrology and the English Press* (Ithaca, N.Y., 1979), 238-269. For a discussion of the possible decline of occultism in the eighteenth-century French almanacs see Robert Darnton, "The Social History of Ideas," in *The Kiss of Lamourette: Reflections in Social History* (New York, 1990), 240-243.

7. Jon Butler, "Magic, Astrology, and the Early American Religious Heritage, 1600-1760," *American Historical Review* 84 (1979), 317-346. For other works arguing for the continued strength of magic in the eighteenth-century see Butler, *Awash in a Sea of Faith*; and "The Dark Ages of American Occultism, 1760-1848," in Kerr and Crow, eds., *The Occult in America*, 58-78; Richard Godbeer, *The Devil's Dominion: Magic and Religion in Early New England* (Cambridge, Eng., 1992); Carolyn Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England* (Chapel Hill, N.C., 1989); Brooke, *The Refiner's Fire*. See also the essays in Peter Benes, ed. "Wonders of the Invisible World: 1600-1900," comprising the *Annual Proceedings of the Dublin Seminar for New England Folklife* 17 (1995). For a similar account of the survival of magic in eighteenth-century English almanacs see Patrick Curry, *Prophecy and Power: Astrology in Early Modern England* (Princeton, N.J., 1989).

8. Godbeer, *The Devil's Dominion*, 227. See also Michael Winship, "Prodigies, Puritanism and the Perils of Natural Philosophy: The Example of Cotton Mather," *William and Mary Quarterly*, 3rd Series, 51 (1994), 105.

For an early anticipation of some of the recent critics of Thomas, see E. P. Thompson, "Anthropology and the Discipline of Historical Context," *Midland History*, 1 (1972), 41-55. Recent scholarship on the enlightenment has also emphasized its limited nature, and its appeal to elites. Henry May has argued that "many, probably most people" in eighteenth-century America were not effected by the main current of the Enlightenment, *The Enlightenment in America* (New York, 1976), xiv. See also Gordon Wood, *The Radicalism of the American Revolution* (New York, 1992), 329.

9. For folklorization see Butler, *Awash in a Sea of Faith*, 28-30, 89-97; for similar statements see Carolyn Merchant, "The Animate Cosmos of the Colonial Farmer," *Ecological Revolutions*, 112-145; Godbeer, *The Devil's Dominion*, 223-234.

12. Nathaniel Low, *An Ephemeris for the Year 1762* (Boston, 1761).

13. Max Weber, "Science as a Vocation," in *From Max Weber: Essays in Sociology*, trans. and ed. H. H. Gerth and C. Wright Mills (New York, 1946), 129-156; On the "disenchantment of the world," see Peter L. Berger, *A Far Glory: The Quest for Faith in an Age of Certainty* (New York, 1992), 24-46; Vincent Descombes, *The Barometer of Modern Reason: On the Philosophies of Current Events*, trans. Stephen Adam Schwartz (New York, 1993), 126-145.

14. Roy Wallis and Steve Bruce, "Secularization, The Orthodox Model," in Stephen Bruce, ed., *Religion and Modernization: Sociologists and Historians Debate the Secularization Thesis*, (Oxford, 1992), 22; Bryan Wilson, ed., *Religion in Secular Society: A Sociological Comment* (London, 1966); Steven Sharot, "Magic, Religion, Science, and Secularization," in Jacob Neusner, Ernst S. Freirichs, Paul Virgil McCracken Flesher, ed., *Religion, Science, and Magic: In Concert and Conflict* (New York, 1989), 261-284.

Weber and later sociologists of religion have used "disenchantment" to describe both the secularization of religious faith and the decline of magical practice. This paper, while drawing on the sociological analysis of secularization, considers only magic and the occult. How the decline of magic relates (either as a cause or effect) to a diminished importance of religion is an intriguing issue, but one that falls outside

the scope of this paper. The extent of religious secularization in eighteenth-century America is a matter of considerable contention. The evidence for a disenchantment of occult and magical belief is far more impressive. Its impact proved broader and its consequences longer lasting than any decline in religious piety. Indeed, the reduced cultural significance of the occult was in part a consequence of the resurgence of an explicitly Christian supernaturalism. If one is looking for the influence of the disenchantment on organized religion, it is just as likely to be found in the Great Awakening as in expressions of rationalized piety.

15. Richard P. Gildrie, *The Profane, The Civil, & the Godly: The Reformation of Manners in Orthodox New England, 1679-1749* (University Park, Penn., 1994).

16. Jon Butler, *Awash in a Sea of Faith*, 89; Keith Thomas, *Religion and the Decline of Magic*, 640; Emile Durkheim, *The Elementary Forms of the Religious Life*, Joseph Ward Swain, trans. (New York, 1915), 60. For the weakness of occultism among eighteenth-century freemasonic lodges see John Brooke, *The Refiner's Fire*, 97.

17. For levels of literacy in eighteenth-century America see Harvey J. Graff, *The Legacies of Literacy: Continuities and Contradictions in Western Culture and Society* (Bloomington, Ind., 1987), 163-172, 248-257; Kenneth A. Lockridge, *Literacy in Colonial New England: An Enquiry into the Social Context of Literacy in the Early Modern West* (New York, 1974); William J. Gilmore, *Reading Becomes a Necessity of Life: Material and Cultural Life in Rural New England, 1780-1835* (Knoxville, Tenn., 1989). For the expansion of religious observance in eighteenth-century America see Patricia U. Bonomi, *Under the Cope of Heaven: Religion, Society, and Politics in Colonial America* (New York, 1986), 87-130, and Patricia U. Bonomi and Peter R. Eisenstadt, "Church Adherence in the Eighteenth-Century British American Colonies," *William and Mary Quarterly*, 3rd Series 39 (1982), 245-86. For the spread of consumer culture and its relation to the enlightenment see Richard L. Bushman, *The Refinement of America: Persons, Houses, Cities* (New York, 1992).

18. Samuel Miller, *A Brief Retrospect of the Eighteenth Century* (New York, 1803), II, 424-429. For the dissemination of the culture of

- the Enlightenment see Lawrence Cremin, *American Education: The Colonial Experience, 1607-1783* (New York, 1970); Richard D. Brown, *Knowledge is Power: The Diffusion of Information in Early America, 1700-1865* (New York, 1989); David Jaffee, "The Village Enlightenment in New England, 1760-1820," *William and Mary Quarterly*, 3rd Series, 47 (1990), 327-346.
19. David D. Hall, "The Uses of Literacy in New England, 1800-1850," in William Joyce et al., *Printing and Society in Early America*, ed. (Worcester, Mass., 1983), 11-12.
20. The best of modern studies of American almanacs are Marion Stowell Barber, *Early American Almanacs: The Colonial Weekday Bible* (New York, 1977), and John Stanley Wenrick, "For Education and Entertainment: Almanacs in the Early Republic, 1783-1815," (Claremont Graduate School, Ph.D. Thesis, 1974). Valuable older studies include Moses Coit Tyler, *A History of American Literature, 1607-1765* (1878, reprint New York, 1962), 363-373; George Lyman Kittredge, *The Old Farmer and His Almanac* (1904; reprint Cambridge, Mass., 1920).
21. Daniel Leeds, *The American Almanac for 1707* (Philadelphia, 1706); [Frank Freeman], *Freeman's New York Almanac for 1768* (New York, 1767); Clifford Shipton, *Isaiah Thomas* (Rochester, N.Y., 1948), 44; Wenrick, "For Education and Entertainment," 26; Samuel Briggs, ed. *The Almanacs of Nathaniel Ames* (Cleveland, Ohio, 1891), 20.
22. "Observations on the Influence of the Moon on Climate and the Animal Economy," *Medical Repository and Review of American Publications*, IV (1801). Wenrick, "For Education and Entertainment," 13. In a discussion of New York almanacs, Shane White has argued that "almanacs can get us closer to a 'popular mentalité' than any other printed source in eighteenth-century America," *Somewhat More Independent: The End of Slavery in New York City, 1770-1810* (Athens, Ga., 1991), 130.
23. Harry Woolf, "Science for the People: Copernicanism and Newtonianism in the Almanacs of Early America," in Jerry Dobrzycki ed., *The Reception of Copernicus' Heliocentric Thesis* (Dordrecht, Holland, 1972), 293-310; Chester E. Jorgenson, "The New Science in the Almanacs of Ames and Franklin," *New England Quarterly* 8 (1935), 555-561.
24. For the role of the almanac in transmitting the occult, Butler, *Awash in a Sea of Faith*, 80-83; Leventhal, *In the Shadow of the Enlightenment*, 13-65; Carolyn Merchant, *Ecological Revolutions*, 133-143; Godbeer, *The Devil's Dominion*, 122-152.
25. John Foster, *An Almanack* (Boston, 1679). Brian Vickers, "Introduction," in *Occult and Scientific Mentalities in the Renaissance*, Brian Vickers, ed., (Cambridge, Eng., 1984), 9.
26. For Jared Eliot see Christopher Grasso, "The Experimental Philosophy of Farming: Jared Eliot and the Cultivation of Connecticut," *William and Mary Quarterly*, 3rd Series 50 (1993) 502-528.
27. Jared Eliot, *Essays Upon Field Husbandry in New England and Other Papers, 1748-1762*, Harry J. Carman and Rexford G. Tugwell ed. (New York, 1934, 123-124. Eliot's comments are reprinted in William Waring, *The New-Jersey Almanack for 1794* (Trenton, N.J., 1793); Nathan Daboll, *The New-England Almanack and Gentlemen and Ladies Dairy for 1794* (New London, Conn., 1793); Robert Bailey Thomas, *Farmer's Almanack for 1803* (Boston, 1802); Nathaniel Low, *An Astronomical Diary, or an Almanack for 1807* (Boston, 1806).
28. Jared Eliot, *Essays Upon Field Husbandry in New England and Other Papers, 1748-1762*, Harry J. Carman and Rexford G. Tugwell ed. (New York, 1934), 123-124.
29. S. J. Tambiah, "Form and Meaning of Magical Acts: A Point of View," in Robin Horton and Ruth Finnegan ed., *Modes of Thought: Essays on Thinking in Western and non-Western Societies* (London, 1973), 199.
30. Thomas, *Religion and the Decline of Magic*, 636-637, 668. Hildred Geertz, "An Anthropology of Religion and Magic, I," *Journal of Interdisciplinary History*, 71-89 6 (1975); Keith Thomas, "An Anthropology of Religion and Magic, II," *Journal of Interdisciplinary History*, 6 (1975), 91-109.
31. Richard Kieckhefer, "The Specific Rationality of Medieval Magic," *American Historical Review* 99 (1994), 813-836. The most prominent recent advocate of the rationalist approach to magic has been Robin Horton. See his influential article, "African Traditional Thought and Western Science," originally published in 1967, reprinted with other articles on similar topics, in Robin Horton, *Patterns of Thought in Africa and the West* (Cambridge, Eng., 1993), 197-258. See

also Hans H. Penner, "Rationality, Ritual, and Science," in Jacob Neusner, Ernest S. Frerichs, and Paul Virgil McCracken Flesher eds., *Religion, Science and Magic: In Concert and in Conflict* (New York, 1989), 11-26, and I. C. Jarvie and Joseph Agassi, "The Problem of the Rationality of Magic," in Bryan Wilson ed., *Rationality*, 172-193.

32. Robert Bailey Thomas, *The Farmer's Almanac for 1799* (Boston, 1798). For the development of recipe knowledge in the early modern period, see William Eamon, *Science and the Secrets of Nature: Books of Secrets in Medieval and Early Modern Culture* (Princeton, N.J., 1994) 93-133; Thomas L. Haskell, "Capitalism and the Origin of the Humanitarian Sensibility, Part I," *American Historical Review*, 90 (1985), 357-359; "Persons as Uncaused Causes: John Stuart Mill, The Spirit of Capitalism, and the Invention of Formalism," in Thomas L. Haskell and Richard F. Teichgraber III eds., *The Culture of the Market: Historical Essays* (Cambridge, Eng., 1993), 469-474. See also Lorraine Daston, "The Factual Sensibility," *Isis* 79 (1988), 452-467.

33. John Ray, *A Collection of English Proverbs* (Oxford, 1670). The first to comment on what he called the "hithering and thithering" of American almanacs in their treatment of the occult was George Lyman Kittredge, *The Old Farmer and his Almanack*, 60-61. For negative comments on astrology in English almanacs, see Capp, *English Almanacs, 1500-1800*, 39-40, 203-204.

34. For the convergence of different cultural forces in early modern print shops see William Eamon, *Science and the Secrets of Nature*, 94-96, 105; Elizabeth L. Eisenstein, *The Printing Revolution in Early Modern Europe* (Cambridge, Eng., 1983), 98-107, 255-278. For the age of almanac authors see Showell, *Early American Almanacs*, 42; Ames, *The Almanacs of Nathaniel Ames*, 12. Bernard Capp has noted an abundance of young almanac makers in seventh-century England without college education, *English Almanacs, 1500-1800*, 235-237.

35. John Corrigan, *The Prism of Piety: Catholic Congregational Clergy at the Beginning of the Enlightenment* (New York, 1991); Esmond Wright, *Franklin of Philadelphia* (Cambridge, Mass., 1986), 14-56; Benjamin Franklin, *Writings* ed. J. A. Leo Lemay (New York, 1987), 1321.

36. Benjamin Franklin, "Autobiography," in *Writings* ed. Leo LeMay, 1362; William Pencak, "Politics and Ideology in *Poor Richard's Almanac*," *Pennsylvania Magazine of History and Biography* (April 1992), 183-211. For the ambivalence of the freemasons toward the occult see Steven C. Bullock, *Revolutionary Brotherhood: Freemasonry and the Transformation of the American Social Order, 1730-1840* (Chapel Hill, N.C., 1996), 9-49; John L. Brooke, *The Refiner's Fire: The Making of Mormon Cosmology, 1664-1844* (Cambridge, England, 1994), 91-104.

37. Charles Morton, *Compendium Physicae*, ed. Samuel Eliot Morison (Boston, 1940); Cotton Mather, *The Christian Philosopher*, Winton U. Solberg ed., (Urbana, Ill., 1994). See also Charles Webster, *From Paracelsus to Newton: Magic and the Rise of Modern Science* (Cambridge, Eng., 1982); Betty Jo Teeter Dobbs, *The Janus Faces of Genius: The Role of Alchemy in Newton's Thought* (Cambridge, England 1991).

38. Samuel Clough, *The New-England Almanac for 1700* (Boston, 1699); Samuel Clough, *The New-England Almanac for 1699* (Boston, 1700); Samuel Clough, *The New-England Almanac for 1706* (Boston, 1705).

39. Daniel Leeds, *An Almanack and Ephemerides for . . . 1693* (Philadelphia, 1692). For discussions of Daniel Leeds see Butler, *Awash in a Sea of Faith*, 82-83, John L. Brooke, *The Refiner's Fire*, 40.

40. Daniel Leeds, "Postscript to all Students in Arts and Sciences, and to Astrologers in Particular," in *The Temple of Wisdom for the Little World* (Philadelphia, 1688), 114-124. This curious book, which starts with the theosophy of Boehme—which seems to have interested Leeds primarily for its angelology—and ends with the essays of Francis Bacon, can be read as either a defense or an attack on occultism. At best, Leeds is extremely careful to limit the scope of the occult to those narrowly specified areas of knowledge that do not conflict with either the principles of natural philosophy or religion.

41. Jacob Taylor, *An Almanack for the Year 1711* (Philadelphia, 1710); Jacob Taylor, *A Compleat Ephemeris for 1726* (Philadelphia, 1725). For more on Taylor see Butler, *Awash in a Sea of Faith*, 89-90. Barber, *Early American Almanacs*, 150 suggests that Taylor's early and later almanacs had different authors. Although this is not impossible, the autobiographical



nature of his 1746 almanacs would seem to weigh against this. See also the tribute to Taylor by Benjamin Franklin, "Poor Richard, 1747," Franklin, *Writings*, LeMay, ed., (New York, 1987), 1240.

42. Jacob Taylor, *Pensilvania. 1746. An Almanack and Ephemeris for 1746* (Philadelphia, 1745).

43. Taylor, *Pensilvania. 1746* (Philadelphia, 1745). For the influence of the disenchantment and the Enlightenment on the spread of evangelical Christianity see Nathan O. Hatch, *The Democratization of American Christianity* (New Haven, Conn., 1989), 35-36.

44. For heterodox occultism in Connecticut see Brooke, *The Refiner's Fire*, 78-87. For Tulley's background see David D. Field, *A Statistical Account of the County of Middlesex in Connecticut* (Middletown, Conn., 1819), 104. For a reference to Tulley as "heathenish" (a possible reference to his interest in the occult) see Samuel Briggs, ed., *The Essays, Humor, and Poems of Nathaniel Ames* (Cleveland, Ohio, 1891), 19.

45. John Tulley, *An Almanack of the Coelestial Motions for . . . 1688* (Boston, 1688).

46. John Tulley, *An Almanack for 1695* (Boston, 1694); Christian Lodowick, *New-England Almanack for 1695* (Boston, 1694); John Tulley, *An Almanack for 1696* (Boston, 1695). See the helpful discussion of Tulley and Lodowick in Godbeer, *The Devil's Dominion*, 144-150.

47. Samuel Clough, *The New-England Almanac for 1703* (Boston, 1702). The same commentary appeared in Nathan Bowen's 1723 almanac with the following couplet added, "Do Not Mind that Altogether/Have some regard to Wind and Weather," *The New-England Diary, or Almanack for 1723* (Boston, 1722). After 1703, Clough replaced the Man of Signs with a table, conveying similar information that he claimed was easier to understand. Further examples of the disparagement of the Man of Signs include Jacob Taylor, *An Almanack for 1726* (Boston, 1725); [Andrew Franklin], *Poor Robin, The Rhode-Island Almanack for 1732* (Newport, 1731); Isaiah Thomas, *Thomas' Massachusetts, Connecticut, Rhode-Island, New-Hampshire, and Vermont Almanack for 1800* (Worcester, Mass., 1799). Leventhal, estimated that the Man of Signs appeared in about seventy-five percent of the almanacs around 1760, *In the*

*Shadow of the Enlightenment*, 32; Wenrick, "For Education and Entertainment" suggested that one-third of the almanacs from 1783 to 1815 included the Man of Signs, "For Education and Entertainment," 12.

48. Leventhal, *In the Shadow of the Enlightenment*, 35-37; Butler, *Awash in a Sea of Faith*, 88-89; Merchant, *Ecological Revolutions*, 133-138; Wenrick, "For Education and Entertainment," 12-13.

49. For the history of the Man of Signs in antiquity and medieval Europe see Kittredge, *The Old Farmer and his Almanac*, 55-59; Robert S. Gottfried, *Doctors and Medicine in Medieval Europe, 1340-1530* (Princeton, N.J., 1986), 180-102. For the popularity of the folk beliefs related to the Man of Signs see Thomas, *Religion and the Decline of Magic*, 196-297.

50. A parallel to the rejection of occult symbolism in favor of rational astrology by almanac makers can be found in the rejection by astronomer and astrologer Johannes Kepler of the fanciful depictions of the cosmos by the English occultist Robert Fludd, see Robert S. Westman, "Nature, Art, and Psyche: Jung, Pauli, and the Kepler—Fludd Polemic," in *Occult and Scientific Mentalities in the Renaissance*, Brian Vickers, ed. (Cambridge, Eng., 1984).

51. For the unstable boundaries between fact and fiction in early eighteenth-century English literature see Michael McKeon, *The Origins of the English Novel, 1600-1740* (Baltimore, Md., 1987), 131-175; Lennard J. Davis, *Factual Fictions: The Origins of the English Novel* (New York, 1983).

52. [Benjamin Franklin], *Poor Richard 1738* (Philadelphia, 1737), [Benjamin Franklin], *Poor Richard Improved, 1751*, reprinted in Franklin, *Writings*, 1207, 1276.

53. [Benjamin Franklin] *Poor Richard, 1735* (Philadelphia, 1734), reprinted in Franklin, *Writings*, LeMay, ed., 1195.

54. Joseph Stafford, *Almanack for . . . 1740* (Boston, 1739). For Stafford's occult background see Brooke, *The Refiner's Fire*, 50-53.

The porous boundary between the occult and non-occult is further revealed in Stafford's first almanacs, a continuation of the notoriously anti-astrological Poor Robin almanacs of James Franklin (the brother of Benjamin Franklin). Both before and after Stafford's almanacs of 1737 and 1738 (published by Franklin's widow), the Poor Robin almanacs broadly lampooned astrology,

see Poor Robin, *The Rhode-Island Almanack for . . . 1732* (Newport, R.I., 1731); Poor Robin, *The Rhode-Island Almanack for . . . 1739* (Newport, R.I., 1738).

55. Nathan Bowen, *Almanack . . . 1727* (Boston, 1726).

56. Nathan Bowen, *Almanack . . . for 1732* (Boston, 1731). For traditions of occult dissimulation see Perez Zagorin, *Ways of Lying: Dissimulation, Persecution, and Conformity in Early Modern Europe* (Cambridge, Mass., 1990), 255-288; Michael Winship, "Prodigies, Puritanism and the Perils of Natural Philosophy: The Example of Cotton Mather," *William and Mary Quarterly*, 3rd Series 51 (1994), 91-105.

57. For Nathaniel Ames see Samuel Briggs, *The Essays, Humor, and Poetry of Nathaniel Ames*, 22-44; Winifred E. A. Bernard, *Fisher Ames: Federalist and Statesman, 1758-1808* (Chapel Hill, N.C., 1965), 3-19.

58. If Ames had a model for his scientific views, it likely was Cotton Mather's *The Christian Philosopher*, frequently cited in Ames' almanacs. For Mather's influence on the American Enlightenment see Cotton Mather, *The Christian Philosopher*, Winton U. Solberg ed., (Urbana, Ill., 1994) xcii-cxx.

59. Nathaniel Ames *An Astronomical Diary, or an Almanack for 1730* (Boston, 1729); Nathaniel Ames *An Astronomical Diary, or an Almanack for 1734* (Boston, 1733). In his final almanac he was still defending judicial astrology, "Astrology has a Philosophical Foundation: the caelestial Powers that can and do agitate and move the whole Ocean; have also the Force and Ability to change and alter the Fluids and Solids of the Body . . . [and] has a great Share and Influence in the Actions of Men," *An Astronomical Diary, or an Almanack for 1764* (Boston, 1763). Ames used the Man of Signs in 1729 and 1730. For Ames' discussions of life on other planets see his accounts in his almanacs of 1728, 1735, 1737, 1748, and 1749. For the treatment of life on other planets by eighteenth-century American almanac makers see Michael J. Crowe, *The Extraterrestrial Life Debate, 1750-1900: The Idea of a Plurality of Worlds from Kant to Lowell* (Cambridge, Eng., 1986), 106-110.

60. Nathaniel Ames, *An Astronomical Diary, or an Almanack for 1747* (Boston, 1746); Nathaniel Ames, *An Astronomical Diary, or an Almanack for 1738* (Boston, 1737). For other attempts of Ames to use Newtonian physics

to explain astrology see *An Astronomical Diary, or an Almanack for 1764* (Boston, 1763).

61. The earliest American example of Herschel's lunar table I have located is in the *Philadelphia Gazette*, Jan. 2, 1797. After the first appearance of Herschel's moon table in the Farmer's Almanac in 1834, it appeared regularly for many decades. The earliest *World Almanacs* also included a version of Herschel's Moon Table. "The World Almanac 1868," reprinted in *Commemorative Edition: The World Almanac* (New York, 1992), 17-18. The folk lore used in the moon table can be seen in the diary of Virginia planter Landon Carter, *The Diary of Landon Carter*, ed., Jack P. Greene (Charlottesville, Virg., 1965), I, 241, 244, and other index entries under "weather—lunar lore."

62. For Ames use of "experience" see *An Astronomical Diary, or an Almanack for 1727* (Boston, 1726); *An Astronomical Diary, or an Almanack for 1730* (Boston, 1729); *An Astronomical Diary, or an Almanack for 1745* (Boston, 1744); *An Astronomical Diary, or an Almanack for 1759* (Boston, 1758).

63. Nathaniel Ames, *An Astronomical Diary, or an Almanac for 1730* (Boston, 1729). Ames' primitivism and his notion of "experience" had parallels in other areas of mid-eighteenth American culture. "Experience" as cumulative inductive knowledge in eighteenth-century political thought had considerable influence on contemporary political thought; see Douglass Adair, "Experience Must be our only Guide: History, Democratic Theory, and the United States Constitution," in *The Reinterpretation of the American Revolution*, Jack P. Greene, ed. (New York, 1969), 397-415; H. Trevor Colbourn, *The Lamp of Experience: Whig History and the Intellectual Origins of the American Revolution* (Chapel Hill, N.C., 1965). For the connection between primitivism in eighteenth-century science and religion see Winton U. Solberg, "Primitivism in the American Enlightenment," in Richard T. Hughes, ed., *The American Quest for the Primitive Church* (Urbana, Ill., 1988), 50-68. See also Theodore Dwight Bozeman, *To Live Ancient Lives: The Primitivist Dimension in Puritanism* (Chapel Hill, N.C., 1988).

64. For examples of skepticism toward lunar meteorology see *American Farmer* Jan. 7, 1820; "On the Influence of the Moon Upon the Seasons," *New England Farmer*, Aug. 9, 1823, 12; John Armstrong, *Treatise on Agriculture*

(Albany, 1820), 105.

65. For examples of almanacs that rejected astrology see Frank Freeman, *Freeman's New-York Almanac for 1767* (New York, 1766); Isaac Briggs, *The Virginia and North-Carolina Almanac for 1800* (Blandford, Virginia, 1799); William Burdick, *Massachusetts Manual for 1814* (Boston, 1813).

66. For Robert Bailey Thomas the standard source remains Kittredge, *The Old Farmer and his Almanac* (1904; reprint Cambridge, Mass., 1920); see also David Jaffee, "The Village Enlightenment in New England, 1760-1820."

67. For Thomas' interest in scientific agriculture see David Jaffee in "The Village Enlightenment in New England, 1760-1820," 327-346; Kittredge, *The Old Farmer and His Almanack*, 78-97. Thomas evidently relied on a version of Herschel's Moon Table to make his weather predictions, Judson Hale, ed., *The Best of The Old Farmer's Almanac: The First 200 Years*, (New York, 1991), 4.

68. Poulson's *Town and Country Almanac for 1793* (Philadelphia, 1792); Dudley Leavitt, *The New-England Almanac for 1812* (Exeter, N.H., 1811).

69. Laurel Thatcher Ulrich, *A Midwife's Tale: The Life of Martha Ballard, Based on Her Diary, 1785-1812* (New York, 1990), 49-58. Witchcraft also underwent a decline in eighteenth-century America, becoming less public—trials ceased—and less threatening. Unlike earlier accounts, witchcraft tales in the eighteenth century often viewed the witch as eccentric rather than diabolic. Witches now could only summon weak and easily bested magic, and were frequently viewed as more of an annoyance than a serious threat. See Leventhal, *In The Shadow of the Enlightenment*,

118-125; John Putnam Demos, *Entertaining Satan: Witchcraft and the Culture of Early New England* (New York, 1982), 387-394; John Brooke, *The Refiner's Fire*, 50.

70. For an example of astrological physiognomy see the chart from *The Book of Knowledge* (Boston, 1787), reprinted in Peter Benes, "Fortunetellers, Wise-Men, and Magical Healers in New England, 1644-1850," in Benes, ed., *Wonders of the Invisible World: 1650-1800*, 144.

71. Samuel Miller, *A Brief Retrospect of the Eighteenth Century I*: 429-434; For Pseudoscience in nineteenth-century America see Arthur Wrobel, ed., *Pseudo-Science and Society in Nineteenth-Century America* (Lexington, KY, 1987). For an introduction to non-occult physiognomy see Graeme Tyler, *Physiognomy in the European Novel: Faces and Fortunes* (Princeton, New Jersey, 1982), 35-81. For another Baconian "pseudo-science", creationism, see George M. Marsden, *Fundamentalism and American Culture: The Shaping of Twentieth-Century Evangelism, 1870-1925* (Oxford, 1980), 55-62.

72. Max Weber, *The Protestant Ethic and the Spirit of Capitalism* trans., Talcott Parsons (New York, 1930), 78. For the survival of rationalized versions of recipe knowledge in nineteenth-century America, see Eaton, *Science and the Secrets of Nature*, 357-360.

73. For examples of the ongoing process of disenchantment in twentieth-century rural America see Evon V. Zogt and Ray Hyman, *Water Witching, U.S.A.* (Chicago, 1959), 30-31; H. Passim and J. W. Bennett, "Changing Agricultural Magic in Southern Illinois," *Social Forces* 21 (1943), 98-106.