



Historical Eclipses and Library Collections

August 21, 2017

How did you learn about today's solar eclipse? Was it on the radio? In the newspaper? On TV? The internet or social media? From a friend? If you had lived two hundred years ago, how might you have heard?

Before there was the internet, radio and television, or even the telephone and telegraph, print was the primary broadcast medium—at least for those who could read. Printing houses, newspaper publishers, and small presses could be found in every town, churning out pamphlets, broadsides, and periodicals for a growing and increasingly literate populace hungry for the news of the day.

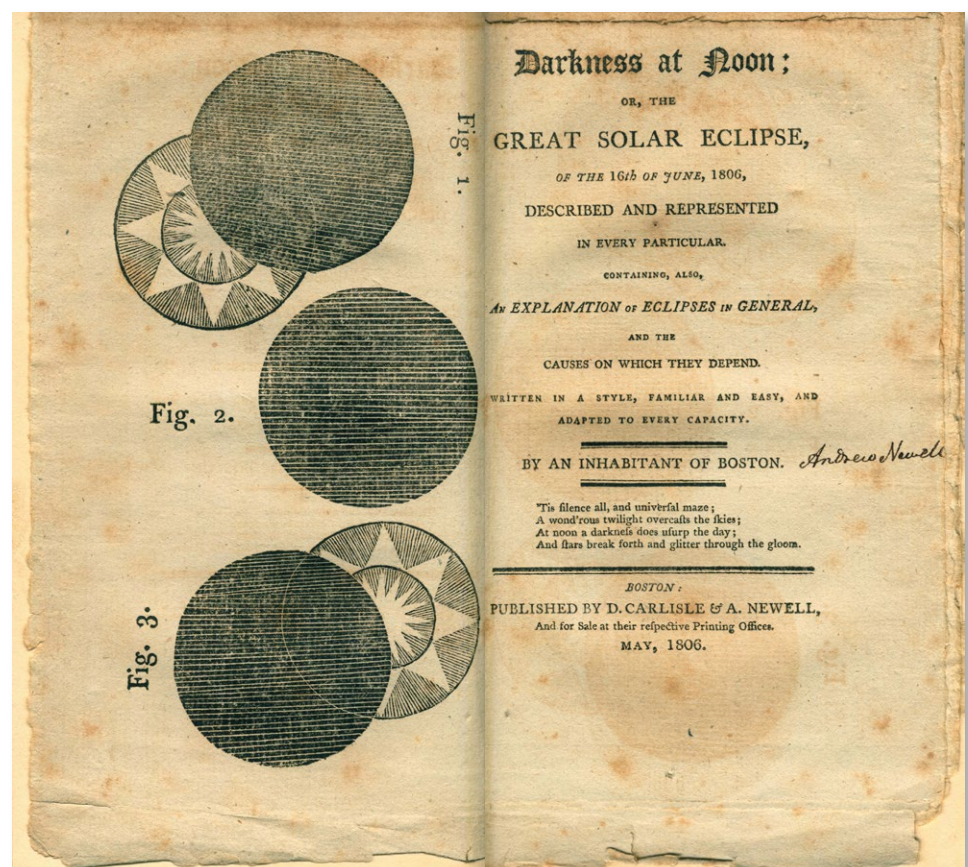
In June of 1806, just three years after the young United States had doubled its territory through the Louisiana Purchase, a solar eclipse passed over the northeast. In the months leading up to the event, publishers and scientists created printed guides to prepare the public for this arresting sight.

Materials from the Hagley Library's collections help us understand how Americans experienced a major astronomical event over two centuries ago.

In Boston, where the eclipse would be total, instrument maker Andrew Newell published a pamphlet intended to help Bostonians understand and experience "Darkness at Noon."

The bulletin described the eclipse as it would be seen from Boston, explained what stars and planets would be visible when the sun was obscured, and offered advice on how to view the eclipse using "a piece of common window glass, smoaked on both sides sufficiently to prevent any injury to the eye." (If you are viewing today's eclipse, please do not follow Newell's advice!)

As someone who made a living crafting the precision instruments surveyors used to map the new nation's coasts and landscapes, Newell was familiar with astronomy. His pamphlet also included information on the causes of eclipses, as well as a list of eclipses visible in New England from 1778 to 1811, and a catalog of major solar eclipses from 431 BC to 1438 AD.



Andrew Newell, *Darkness at Noon; or, The Great Solar Eclipse, of the 16th of June, 1806, described and represented in every particular* (Boston: D. Carlisle & A. Newell, 1806). Penrose R. Hoopes Collection, no. 266, Published Collections, Hagley Library.



Detail from John Poulson,
"Approaching Solar Eclipse"

(Philadelphia: John Poulson, 1806).

Penrose R. Hoopes Collection, no. 256,

Published Collections, Hagley Library.

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In Philadelphia, where the sun would only be about 95% obscured, newspaper publisher John Poulson printed a broadside alerting residents to the "Approaching Solar Eclipse." Though he quoted extensively from Newell's pamphlet, Poulson offered Philadelphians a diagram illustrating what they would see on the morning of June 16, 1806, when the moon would begin to obscure the sun from the left side.

A broadside like this would have been displayed in a public place, much like a poster today, and would likely have reached a larger audience than Newell's pamphlet. By reproducing large portions of the pamphlet in broadside form, Poulson brought Newell's astronomical teachings to a wider public.

Approaching Solar Eclipse.

THE lovers of Astronomical Science will perhaps be highly gratified with the opportunity which may on Monday be afforded them, of beholding this interesting celestial phenomenon. And although we shall not be favoured, in this city and its neighbourhood, with a view of a total obscuration of the solar disk, which, it will be perceived by the ensuing paragraph, may be observed by the inhabitants of some parts of New York, and of the Eastern States, yet the few observations which follow, and which are extracted from a pamphlet on the subject, lately published at Boston, will be applicable to the phenomena visible here, and may perhaps be acceptable to those who are fond of contemplating the wonderful variety, harmony, motions and appearances of the heavenly bodies. The course of the moon's shadow over the globe is described in the following manner:—

"As the eclipse of the sun, which will happen the 16th of this month, will be the most extraordinary of any that has happened for a long time, or that will be observed the present century, by the inhabitants on this part of the globe, we presume the following account of its course will not be uninteresting:—

"The centre of the shadow enters upon the globe in the Pacifick ocean, about 15 degrees to the eastward of the Sandwich islands, lat. 29 deg. 25 m. N. long. 65 deg. W. from Philadelphia, from thence it takes its course eastward, inclining to the north, passing through New Mexico and Louisiana—crosses the Mississippi about 80 miles above its confluence with the Missouri, and passes on to the eastward through the state of Ohio, the north part of Pennsylvania, and a part of New York, crossing Hudson's river about 40 miles to the south of Albany—enters into Massachusetts about 15 miles north of the Connecticut line, and passes through Northampton, Worcester and Boston. Thence it takes across the Atlantick, bending its course towards the south, enters upon the continent of Africa, a little to the south of the Canary islands, then with a S. E. course passes through the western part of the great Desert of Barbary, in the country of Nigritia, where it finally leaves the globe, the sun setting centrally eclipsed, lat. 14 deg. N. long. 80 deg. 30 m. E."—*Allen*.

The observations of the author of the pamphlet above alluded to, are thus introduced.

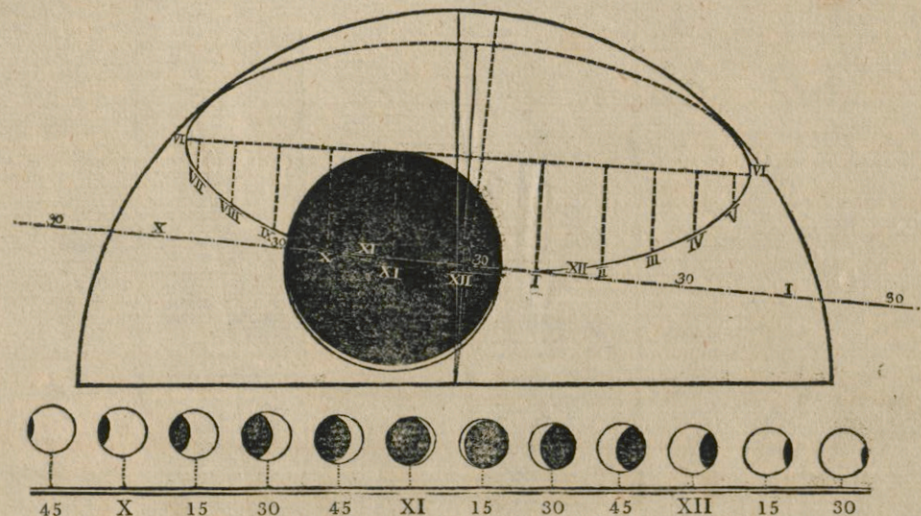
"The Science of Astronomy, in all ages, has been a subject of admiration, and it justly claims the distinction of superlative excellence. By its discoveries, knowledge has been diffused in rich variety over the face of the civilized world; and imagination has found a field where it can rove without restraint or limitation. Though it relates principally to objects whose distances are immeasurable, and whose numbers are infinite; yet we are not to conclude that they have no relation with terrestrial things; or that they are disconnected with that system of which we form a part.

"The discoveries which have been made in this science within the three last centuries, have exceeded the warmest expectations of human reason; for the mind, which was once limited to the narrow confines of a little earth, is now able by the telescope to travel space, and make excursions into the distant regions of the heavens; and a prospect is now opened to us, as wonderful as it is infinite. But its subtilities are not its only recommendation: by it, science has been improved, navigation promoted, and knowledge and invention carried to the utmost boundaries of human ingenuity. By its aid the mechanic arts have flourished, and by their union, have yielded the richest harvest of intellectual gratification.

"The daily rising and setting of the sun and moon, with the milder glories of a nocturnal firmament, are some of the common specimens of celestial magnificence. We admire, indeed with propriety, the sublime indications of an "infinite creative mind;" and whilst we are charmed with the usual displays of his wisdom and goodness, we are led to make a transition from "nature to nature's God." But these are scenes which, from their frequency, are regarded with indifference; they are too often repeated to impress the mind with a remembrance of their origin, or a recollection of their destiny in the perfection of the present system.

"But on some occasions, nature assumes a surprising aspect. The novelty of the event produces inquiry and universal astonishment. Either the reverberating echo of distant thunder, or the alarm of an approaching earthquake, awakens the mind from its indifference, and excites to reason, thought, and reflection. But a total eclipse of the sun is still more remarkable, as such an appearance" so very seldom occurs. "And probably many ages may pass before the same phenomenon will be repeated."

The DIAGRAM which accompanies the present remarks, represents the Eclipse as seen in Philadelphia. The upper part exhibits it at the moment in which the center of the moon passes directly over that of the sun; or, in other words, the time of the greatest obscuration: the lower shews the gradual progress of the moon over the disk of the sun.



Beginning, 9 h. 42 m. A. M. Middle, or greatest obscuration, 11 h. 6 m. 30 s. End, 12 h. 36 m. 15 s. Duration, 2 h. 54 m. 15 s. Digits* eclipsed 11 1-3 on the sun's North† limb. The first impression of the moon on the solar disk, will be seen about 76 degrees from the sun's vertex on the right hand.

Though today we may learn of upcoming eclipses from a variety of sources, much of the information these outlets provide is quite similar to what Newell and Poulson sought to convey to their readers: when eclipses happen and why, what we can expect to see from where we're standing, and how to watch without damaging our eyes.