JOHN BEVIS AND HIS *URANOGRAPHIA* (*ca.* 1750)*

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INTRODUCTION

There are few artifacts of the history of astronomy which can rival, for sheer visual splendor, the Grand Celestial Atlases. Productions of a Golden Age which encompassed roughly the double-century from 1600 to 1800, these sumptuous folios must be ranked among the most magnificent books ever published. They are so appealing to the eye that we easily forget that the finest of the atlases were not only works of art but were also of great astronomical importance. Based on the most recent star catalogs at a time when positional astronomy was in its infancy, the atlases became the intimate working tools of astronomers until early in the nineteenth century. The number of the truly great ones, however, was small. Only four atlases published in this 200-year period acquired any professional standing; they were Bayer's *Uranometria* (1603), Hevelius's *Firmamentum* (1690), Flamsteed's *Atlas Coelestis* (1729, along with the important French quarto editions of 1776 and 1795), and Bode's *Uranographia* (1801).[1] Each of these is a lasting monument to the astronomer's science and the cartographer's art.[2]

Flamsteed's 1729 *Atlas* was probably the most acclaimed of the quartet. Although the engravings of the constellation figures were considerably less elegant than those of Bayer or Hevelius, the star positions were meticulously inserted according to an accurate system of projection, and these positions were taken from Flamsteed's own catalog, which set the standard for positional accuracy for the eighteenth century. To the French especially, Flamsteed's *Atlas* had no equal. To Lalande, it was "le plus bel ouvrage," "ce grand et magnificique recueil . . . le meilleur qu'on ait jamais fait."[3] Fortin praised it as "le plus estimé de tous ceux qui existent."[4] In France it was often referred to simply as "l'Atlas céleste"—*the* Celestial Atlas.[5]

To one French astronomer, however, "l'atlas céleste" meant something entirely different. Charles Messier, in his 1781 catalog of nebulous objects, made frequent reference to "l'Atlas céleste anglois" and "le grand Atlas anglois" as he pointed out previous depictions of many of his nebulae.[6] The reference,

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[1] Johann Bayer, *Uranometria* (Augsburg, 1603); Johann Hevelius, *Firmamentum Sobiescianum sive Uranographia* (Gdansk, 1690); John Flamsteed, *Atlas Coelestis* (London, 1729), *Atlas Céleste*, ed. J. Fortin (Paris, 1776), *Atlas Céleste*, ed. J. Lalande and P.-F.-A. Mechain (Paris, 1795); Johann Bode, *Uranographia* (Berlin, 1801).

[2] There is a fifth atlas which deserves to be added to the list, namely Julius Schiller's *Coelum Stellatum Christianum* (Augsburg, 1627). This atlas was remarkably up-to-date; the explanatory tables were filled with useful information; in fact, in many ways it was more satisfactory than Bayer's widely acclaimed *Uranometria* (although Bayer himself seems to have had a hand—a rather large hand—in the preparation of Schiller's atlas). But because of what we might call Schiller's apostolic fervor in replacing the traditional pagan constellations with biblical counterparts, the atlas met with little favor from succeeding generations of astronomers.

In addition, there are two other works which are often grouped with Bayer, Hevelius, Flamsteed, and Bode: Andreas Cellarius's *Harmonia Macrocosmica* (Amsterdam, 1660) and Johann Doppelmayr's *Atlas Coelestis* (Nuremberg, 1742). Neither however was a working atlas. Cellarius's thick folio, in its hand-colored version, was one of the most splendid books of its century, but it contains no catalog or tables, depicts the stars only on planispheres, and seems to have found its niche in illustrating modern history of science textbooks. The Doppelmayr *Atlas* is also a beautiful set of colored engravings, and its depiction of the Riccioli and Hevelius moonmaps is especially striking, but the six charts of the stars are neither reliable nor particularly usable. Jerome Lalande indicates that eighteenth-century opinion of both Schiller and Doppelmayr was rather low; see his *Bibliographie Astronomique* (Paris, 1803), pp. 190, 416.

[3] Jerome Lalande, *Astronomie*, 3rd ed. (3 v., Paris, 1792), 1: para. 722, p. 241; *Bibliographie Astronomique*, p. 388.

[4] P.-F.-A. Fortin, "Discours Preliminaire" to his edition of John Flamsteed, *Atlas Céleste* (Paris, 1776), p. iii.

[5] In retrospect Bode's *Uranographia* seems equally deserving of praise, since it depicted many more stars than Flamsteed's *Atlas* and also included the Messier and Herschel nebulae. Time, however, was out of joint for the Bode atlas; as positional accuracy in the early nineteenth century approached fractions of a second of arc, the large atlas simply ceased to be useful as a primary reference tool. Astronomers turned to smaller, unadorned sectional charts, and the handsome folio atlases were left to the interested public and amateur star-gazers. The *Uranographia* thus never became as much a part of the astronomer's working library in the nineteenth century as Flamsteed's *Atlas* had in the eighteenth century.

[6] Charles Messier, "Catalogue des Nébuleuses et des Amas d'Étoiles," *Connaissance des Temps pour 1784* (Paris, 1781), pp. 227–269. The quotations are from Messier's descriptions of M1 and M11. A translation of this catalog may be found in Kenneth Glyn Jones, *The Search for the Nebulae* (Chalfont St. Giles, Science History Publ., 1975), pp. 61–73. The 1781 catalog was reprinted unchanged in the *Connaissance des Temps pour 1787* (Paris, 1784), and a facsimile of this version (reduced) is now available in John H. Mallas and Evered Kreimer, *The Messier Album* (Cambridge, Mass., Sky Publishing Corp., 1978), pp. 18–27, which also contains an excellent historical introduction by Owen Gingerich.