

**Omar W. Nasim**

*Observing by hand: sketching the nebulae in the nineteenth century*, Chicago: University of Chicago Press, 2013. 296 pages, ISBN: 9780226084374.

The central theme of Omar W. Nasim's brilliant book is vision and drawing what is seen. The process of recording visual observations, however, is deemed more meaningful than just an act of producing visual aide-mémoires: it appears as a genuine epistemic action, which aims at the systematic discernment of barely visible phenomena, as well as the visual stabilization of phenomena for use in the production of knowledge and in the work of theoreticians. Moreover, Nasim's work encourages a new appreciation of the role that the reproduction of visual phenomena should play in the historiography and philosophy of astronomy, and of scientific observation in general.

The actors of observational drawing in Nasim's account are nineteenth-century astronomers like John Herschel, William Lassell and Wilhelm Tempel. It was them who examined the novel and mysterious phenomena of the nebulae and recorded their form and particularities using different approaches, but all based on free-hand drawing.

Throughout the book, Nasim argues that the specific drawing procedures of these observers each allowed them "to see, to see more, to see differently, to make out, to tease out, and to explore or probe" (p. 14). To encompass this relationship between the observer-draftsmen and the nebulae, Nasim draws our attention to what he calls the "process of familiarization" performed through the repeated act of drawing the nebular object. This repeated act was a "personal and intimate set of actions" (p. 16), a procedural preoccupation with the specificities of the object of study. It acquainted the draughtsman not only with the object itself, its features and peculiarities, and consequently with how to draw it better, but also "with its many subtle intricacies" (p. 228). The process of familiarization, therefore, took place not solely on a visual, but also on an epistemic level.

The notion of familiarization is profoundly explored in William Parson, the Third Earl of Rosse's ambitious *crowd-observing* project. As an essential new reference term for the increased appreciation of observational drawing, Parson's project outlines the procedural terms of consolidation and coordination of many seeing eyes and drawing hands (Chapter 1). The strategy of repetition and familiarization, as Nasim shows, belonged to almost all nebula observation programs of the early nineteenth century. It of course gave rise to a huge number of working drawings, and virtually all published images of the nebulae were synthesized from these many observations.

Given this, the discussion of the character of the nebula drawings goes

beyond the simple question of the correspondence of a momentary individual sketch with the object observed. It becomes a question about how a number of such sketches, each affected by individual preferences, arbitrary selections, and possible errors, could be transformed in a final representation to satisfy an objective, standardizing scientific gaze. Nasim uncovers these processes, detailing the regimented routines involving selecting, ordering and managing the manifold working drawings to reach a synthetic form of the nebulae with the “average appearance of what they ought to look like”. In these processes of “ordered paperwork”, seeing and drawing lose a direct relationship to training and virtuosity in direct representation and become terms of a mode of scientific observation that reveals to be almost an “observance, a ritual”, even a “form of bureaucracy” (p. 17). Both the different strategies of production of the nebula drawings and the working procedures to obtain their printed results show a close contiguity with many contemporary expectations. They were performed and took effect in a public context that was much broader than astronomical research and included philosophy, art and popular science (Chapter 2).

Despite contemporary interest in various forms of visualization from natural history to archaeology, the study of pictorial representations of nebulae from the nineteenth century have been neglected by historians, and considered objects of marginal historical relevance of “mere antiquarian interest” (p. 231). In particular, the history of astronomy has indiscriminately dismissed the multiplicity of these representations, considering them products of fashionable trends. Reputed “simply subjective drawings” (p. 231) objects of little use as objective evidence about the nebulae, they remained ignored in investigations of the deeper reasons of astronomical research of these times and of the philosophy underlying them.

In contrast to this view, Nasim’s book demonstrates that nineteenth-century observers of the nebulae attempted in several ways to “consciously overcome and go beyond their personal, idiosyncratic, and subjective views” (p. 231). Nasim argues that the central historical and philosophical issue about nineteenth-century observers and their published drawings should be the quality and character of these attempts to escape subjective intrusion in representation, which is more important than the level of subjectivity inherent in the drawings themselves.

With a disarming consistency of argument and use of source material ranging from the history of nebular research and its cultural context to John Herschel’s philosophy of mind, Nasim shifts the historiography to a new perspective on the problem: he focuses not only on the appearance of the images, but also on how they were produced, shedding light on the “material and concep-