This paper combines the hermeneutic, linguistic, and philological methods of the humanities with astronomy and mathematics to propose a new description of the gates of the sun and moon as described in the Astronomical Book of Enoch. It also explains the function of the gates in light of Mesopotamian science and shows that the gates of the luminaries constituted an innovative and independent scientific theory. Though based on Babylonian astronomy, the Enochic gates system is not a mere derivation of it with minor adaptations to suit the authors’ religious beliefs, as is commonly argued. Rather, they manifest independent thinking in proposing a scientific theory that generalizes upon several observed natural phenomena. The gates made possible a more detailed mapping of the horizon than that of older Mesopotamian literature, assumed by previous scholars to be the source of the Enochic gates. This new mapping system allowed the authors of the Astronomical Book to describe the inclination of the sun and moon as they rose and set over the horizon observable in Eretz Israel.
The article contains elementary information concerning the manuscripts of 1 Enoch, their editions, and scientific literature that deals with the topic. The presentation begins with the list of larger bibliographic collections concerning the Enochic writings, then the Aramaic witnesses preserved in 11 manuscripts found in Qumran Cave 4 are shortly discussed and pertinent information concerning their edition is given. They use the astronomical model of lunar elongation—the angular distance between the moon and the sun on the observed heavenly sphere—to compute the times of the moon’s visibility and invisibility. They conclude that the times written on the Aramaic fragments are closer to reality than the times written in the Babylonian sources of the aab.