

zur Kenntniss des gestirnten Himmels, that "he had taken the law of the distances from a translation of Bonnet's *Contemplation de la Nature*, prepared by Professor Titius at Wittenberg," still it has generally borne his name, and seldom that of Professor Titius. In a note which the latter added to the chapter on the System of the Universe,* he says, "When the distances of the planets are examined, it is found that they are almost all removed from each other by distances which are in the same proportion as their magnitudes increase. If the distance from Saturn to the Sun is taken as 100 parts, the distance of Mercury from the Sun is 4 such parts, that of Venus $4 + 3 = 7$ such parts, the Earth $4 + 6 = 10$, Mars $4 + 12 = 16$. But from Mars to Jupiter there is a deviation from this accurate (!) progression. Mars is followed by a space of $4 + 24 = 28$ such parts, in which neither a principal planet nor a subordinate planet has yet been seen. Is it possible that the Creator should have left this space empty? It can not be doubted that this space belongs to yet undiscovered satellites of Mars; or that perhaps even Jupiter has further satellites around him, which have not hitherto been seen by any telescope. In this space (unknown to us as regards its contents) Jupiter's circle of action extends to $4 + 48 = 52$. Then follows Saturn in $4 + 96 = 100$ parts—an admirable proportion." Titius was therefore inclined to consider the space between Mars and Jupiter as containing, not one, but, as is actually the case, several cosmical bodies; however, he conjectured that they were more likely to be subordinate than principal planets.

How the translator and commentator of Bonnet obtained the number 4 for the orbit of Mercury, is nowhere stated. Perhaps he selected it only in order to have in combination with the easily divisible numbers 96, 48, 24, &c., exactly 100 for Saturn, at that time the most distant planet known, whose distance is $9\cdot5$, thus very nearly $= 10\cdot0$. It is less probable that he constructed the order of succession by commencing from the nearer planets. A sufficient correspondence of the law of duplication, setting out, not from the Sun, but from Mercury, with the true planetary distances, could not have been affirmed in the last century, as the latter were known

* Karl Bonnet, *Betrachtung über die Natur*, translated by Titius, second edition, 1772, p. vii., note 2 (the first edition appeared in 1766). In Bonnet's original work no such law is noticed. (Compare also Bode, *Anleit. zur Kenntniss des gestirnten Himmels*, second edition, 1772, p. 462.)