

(13) *Phil. Trans.* 16 (1686), 3–21.

(14) Here Newton wrote and then crossed out the word 'way'.

(15) See Letter 146.

(16) The passage here quoted stands at the end of the long first section of the 'Hypothesis' (Letter 146, vol. 1, at p. 366). The 'foregoing words' contain the following passage: 'the vast body of the Earth, wch may be every where to the very center in perpetuall working, may continually condense so much of this Spirit as to cause it from above to descend with great celerity for a supply. In wch descent it may beare downe with it the bodyes it pervades with force, proportionall to the superficies of all their parts it acts upon. . . .'

(17) The 'Hypothesis' in fact contains no more precise formulation of the law of the inverse square than is suggested in the final phrase quoted in note (16) above.

(18) In Hooke's *Diary*, for Friday, 15 February 1688/9, is noted: 'At Hallys met Newton—vainly pretended claim yet acknowledged my information. Interest has noe conscience; *a posse ad esse non valet Consequentia*' (MacPike, *Halley*, p. 184).

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29 JUNE 1686

From the original in King's College Library, Cambridge

Sr

I am heartily sorry, that in this matter, wherin all mankind ought to acknowledge their obligations to you, you should meet with any thing that should give you disquiet, or that any disgust should make you think of desisting in your pretensions to a Lady, whose favours you have so much reason to boast of. Tis not shee but your Rivalls enviing your happiness that endeavour to disturb your quiet enjoyment, which when you consider, I hope you will see cause to alter your former Resolution of suppressing your third Book, there being nothing which you can have compiled therein, which the learned world will not be concerned to have concealed; These Gentlemen of the Society to whom I have communicated it, are very much troubled at it, and that this unlucky business should have hapned to give you trouble, having a just sentiment of the Author therof.

According to your desire in your former,⁽¹⁾ I waited upon Sr Christopher Wren, to inquire of him, if he had the first notion of the reciprocall duplicate proportion from Mr Hook, his answer was, that he himself very many years since had had his thoughts upon making out the Planets motions by a composition of a Descent towards the sun, & an imprest motion; but that at length he gave over, not finding the means of doing it. Since which time Mr Hook had

frequently told him that he had done it, and attempted to make it out to him, but that he never satisfied him, that his demonstrations were cogent. and this I know to be true, that in January 83/4,⁽²⁾ I, having from the consideration of the sesquialter proportion of Kepler, concluded that the centripetall force decreased in the proportion of the squares of the distances reciprocally, came one Wednesday to town, where I met with Sr Christ. Wrenn and Mr Hook, and falling in discourse about it, Mr Hook affirmed that upon that principle all the Laws of the celestial motions were to be demonstrated,⁽³⁾ and that he himself had done it; I declared the ill success of my attempts; and Sr Christopher to encourage the Inquiry sd, that he would give Mr Hook or me 2 months time to bring him a convincing demonstration therof, and besides the honour, he of us that did it, should have from him a present of a book of 40s. Mr Hook then sd that he had it, but that he would conceale it for some time that others triing and failing, might know how to value it, when he should make it publick; however I remember Sr Christopher was little satisfied that he could do it, and tho Mr Hook then promised to show it him, I do not yet find that in that particular he has been as good as his word. The August following when I did my self the honour to visit you, I then learnt the good news that you had brought this demonstration to perfection, and you were pleased, to promise me a copy therof, which the November following I received with a great deal of satisfaction from Mr Paget; and therupon took another Journey down to Cambridge, on purpose to conferr with you about it, since which time it has been enterd upon the Register⁽⁴⁾ books of the Society as all this past Mr Hook was acquainted with it; and according to the philosophically ambitious temper he is of, he would, had he been master of a like demonstration, no longer have conceald it, the reason he told Sr Christopher & I now ceasing. But now he sais that this is but one small part of an excellent System of Nature, which he has conceived, but has not yet compleatly made out, so that he thinks not fit to publish one part without the other. But I have plainly told him, that unless he produce another differing demonstration, and let the world judge of it, neither I nor any one else can believe it.

As to the manner of Mr Hooks claiming this discovery, I fear it has been represented in worse colours than it ought; for he neither made publick application to the Society for Justice, nor pretended you had all from him. The truth is this: Sr John Hoskins⁽⁵⁾ his particular friend being in the Chair, when Dr Vincent presented your Book, the Dr gave it its just Encomium, both as to the Novelty and dignity of the subject. it was replied by another Gentleman, that you had carried the thing so far that there was no more to be added. to which the Vicepresident replied, that it was so much the more to be prized, for that it was both Invented and perfected at the same time. this gave Mr Hook