

Letter from Newton to Henry Oldenburg, dated 18 January 1671/2

Author: Isaac Newton

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**A letter to M^r Oldenburg
containing an advise about the Metalline
composition for M^r Newtons reflecting telescope**

< text from f 13r resumes >

Cambridg Jan 18 167 $\frac{1}{2}$.

Sir

Understanding by your lastIn. Philosophical Transactions N^o. 81. p. 4006. that some of the Fellows of the Honourable Society in order to a bigger reflective Telescope are devising a fit Metalline matter, let me presume to give them this caution that whilst they seek for a white hard & durable metalline composition they resolve not upon such an one as is full of small pores onely discoverable by a Microscope. For though such an one may to appearance take a good polish, yet the edges of those small pores will weare away faster in the polishing then the other parts of the Metall, & so however the Metall seem polite yet it shall not reflect with such an accurate regularity as it ought to doe. Thus Tin-glasse mixt with ordinary Bell-metall makes it more white & apt to reflect a greater quantity of light; but with all its fumes raised in the fusion like so many aeriall bubbles fill the Metall full of those Microscopicall pores. But white Arsenick both blanches the Metall & leaves it solid without any such pores, especially if the fusion hath not been too violent. What the stellate Regulus of Mars (which I have sometimes used) or other such like substance will doe, deserves particular examination. Let mee add this further intimation that Putty or other such like powder with which tis polished, by the sharp angles of its particles fretteth the metall if it bee not very fine & filleth it full of such small holes as I speak of. And therefore care must be taken of that, before judgment bee given whether the metall bee throughout the body of it porous or not.

I desire that in your next letter you would inform <13v> mee for what time the Society continue their weekly meetings, because if they continue them for any time I am purposing them, to be considered of & examined, an accompt of a Philosophicall discovery which induced mee to the making of the said Telescope, & which I doubt not but will prove much more gratefull then the communication of that instrument, being in my Judgment the oddest if not the most considerable detection which hath hitherto beene made in the operations of Nature.

I desire also that since I am elected Fellow of your Honourable Society, you would in a word or two inform mee what dutys I am thereupon subject to, & you will further oblige mee who already am

Your much obliged Friend & Servant

I. Newton

<13av>

These

To M^r Henry Oldenburge
at his house about the middle of
the old Palmail in S^t Jamses
Feilds in

Westminster.

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Rec. Jan. 19 167 $\frac{1}{2}$. Answ. Jan. 20. Desired to have his consent of printing his invention. Let him know the duties of a fellow: and the Uninterruptednes of the meetings of the Soc. except long vacation.

Writ again jan. 27. 71. repeated what I said before, and desired the proportions of arseneck and metal

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