No 1 ] To Sir John Frederic William Herschel, Bart.

My dear Sir The correspondence which took place between us, two years ago,[2] must be my warrant, if the object I have in view requires any, for taking the liberty of writing to you respecting a passage in the address which you delivered to the British Association for the Advancement of Science at its first evening meeting on the 19th of last month.[3]

In that discourse you spoke of a recent publication of mine in so handsome a manner as would have more than satisfied a much greater degree of vanity than I possess. But my purpose in writing to you is not to make acknowledgments for your politeness nor to express my gratification at your favourable opinion, but to call your attention to an act of injustice which you have, I am sure unintentionally, committed against the scientific reputation of a distinguished man. You have publicly imputed to M. Auguste Comte, not only a gross blunder in reasoning, but one inconsistent with the most elementary knowledge of the principles of astronomical dynamics. If M. Comte had been capable of such a blunder, he would have been quite incapable of writing any one chapter of the Cours de Philosophie Positive : and I am sure, nothing is necessary but a more careful reference to that work, to convince you that he never was guilty of it.

You say that for the purpose of giving a numerical verification to the hypothesis of the nebular origin

of the solar system, M. Comte computes the time of rotation which the sun must have had about its axis so that a planet situated on its surface should not press upon that surface. That as the basis of this calculation M. Comte employs "the elementary Huyghenian theorems "for the evaluation of centrifugal forces, in combination "with the law of gravitation —— a combination which, "I need not explain to those who have read the first "book of Newton, leads direct to Kepler's law," And

then you accuse him of “gravely turning round upon us
"and addressing the coincidence of the resulting periods
"compared with the distances of the planets with
"this law of Kepler, as being the numerical
"verification in question." Well may you add "where
"is there a student to be found who has graduated as
"a Senior Optime in this university, who will not
"at once lay his finger on the fallacy of such an argument,
"& declare it a vicious circle." But that M. Comte
has fallen into this vicious circle is a statement
only to be accounted for by supposing that you have not read
the astronomical portion of M. Comte’s work, but only referred,
and that cursorily, to a single passage of it.

It would be difficult for even the shallowest person
to have attempted to give a philosophical outline of

astronomy without being aware that the evidence by
which Newton proved the law of gravitation was the fact
of its leading demonstratively to Kepler’s laws; & that
Kepler’s law of the relation between the distances & the
periodic times, was deduced from the law of gravitation
combined with the Huyghenian measure of the centrifugal
force. Accordingly if you refer to an earlier chapter in
the same volume of M. Comte, being that in which he unfolds the
evidence of the law of gravitation, you will find (pp. 227-231)
that all which you so contemptuously bring forward in condemnation
of M. Comte, is brought forward by him. You will find the same
exposition repeated in the corresponding chapter of his very
striking "Traite Philosophique d’Astronomie Populaire." It
was impossible that the accordance of Kepler’s law with the
premises from which he knew and said that it demonstratively
followed, could appear to him to be a "numerical verification,"
not of those premisses, but of something quite unconnected
with them, viz. the nebular hypothesis.

And if you only refer again to the very passage, to
which I venture to think that your former reference

must have been a very hasty one, I am confident that you will see how completely you have mistaken its import. It was not the coincidence of the resulting periods of the planets "with this law of Kepler" that M. Comte considered as a numerical verification of their nebulous origin; it was the coincidence (within certain limits of error) between the periods, as resulting from the calculation, and the actual periodic times of the planets, as known by observation. The reference to Kepler's law is only incidental, and the sole use made of it is, to

dispense with the necessity of performing the calculation separately for each planet, since, when it has been made for any one, Kepler's law gives the correlative result for every other.

I speak without any knowledge of the Memoir or Memoirs on the subject, which M. Comte read before the Academy of Science, and with which you appear to be equally unacquainted. A reference to them would doubtless shew both "the steps" and "the data of his calculations," which could not have been given with any propriety in the Cours. I also write without communication with M. Comte, who is probably quite unaware of the attack made upon him. But on the face of the Cours itself and of the very passage from which you quote, it is evident to me that the attack has been made under a misapprehension, & I cannot doubt that your love of justice will induce you to reexamine the subject.

A judgment from you, delivered with preparation, and on an occasion of so much publicity, must have a serious effect upon the scientific reputation of any author: and you cannot be unaware how little chance any one, who may dispute its justice, would have of obtaining, from the scientific or from the general public of this country, even a hearing, against your authority. So great a power involves a proportional responsibility; and when it has been inadvertently exercised to the injury of any one, I cannot doubt your being most desirous that the error should be pointed out.

I remain　Yours very truly　J. S. Mill

9th July 1845.

注 1　〔ロンドン〕王立協会所蔵自筆書簡。ハーシェルの 6 月 10 日の返書も同じ。更にハーシェルの 7 月 13 日書簡はイェール大学にある。

2　書簡 397 を見よ〔『全集』13 巻、583-584 頁〕。

3　ケンブリッジにおける協会第 15 回会合でのハーシェル総裁演説は、公刊されている。*Athenaum* for June 21, 1845, pp. 612-17.