

Euler to Wettstein
Berlin, 20 December 1749
Letter 264 (2765)

I have the honor of sending in today's post 12 genealogical almanacs in French and 2 in German which together cost 9 ecus which subtracting 2 pounds less 6 sous, I still need to pay about 2 ecus. I am terribly upset that despite my strongly worded suggestions that the old calendar style is still missing from these almanacs. However, I must say that this state of affairs has nothing to do with our President, it is uniquely our commissioner who is managing the situation, who even though he enjoys a part of the profit coming from the almanacs, it creates a great deal of difficulty to change even the smallest thing, for fear that it may impact the sales. He pretends that there are a number of persons who still like astrological predictions so much that he does not wish to alter the text because the sale in our country would be diminished. He has proposed to print separately the months in the old style, as long as I am willing to guarantee the purchase of those copies in which the changes were made. However, you would not be surprised if I told you that I was unwilling to enter into such an arrangement. However, if you were able to find the address of a bookseller who would commit to taking a certain number of these French almanacs in the old style, I promise to deliver them to you immediately. As for Russia and Sweden we have not yet found the way to sell them the almanacs.

I am infinitely obliged to you Sir, for the books and tobacco that you have kindly furnished to me. Mr. Grischow has news that his crate arrived in Hamburg. But we are surprised that you have not mentioned one word on the *Uranographie*, which seems that it will not be appearing soon.

You have all the reasons to grieve the loss of your child, I am particularly touched, however I do not understand why you do not feel that you should hope to amend the loss with as many reasons as I have. I hope with all my heart that God will soon bless

you and that He presents you with the satisfaction and extend your days so that you may enjoy them without any cares or unfortunate events.

It was truly an honor to learn that you had presented an extract of my last letter to your illustrious society. I am more and more convinced of the truth that I advanced stating that the orbits of the planets contract more and more, and that the periodic timing is growing shorter and shorter. However to be completely doubtless, one should have very good old observations that we are sure that occurred from the past time to the present moment. We are where we are, not only in regards to the observations that Ptolemy left us, but because by fixing the moments of these observations, the chroniclers committed a loop by supposing that the sun's mean movement should have been determined by these same observations. However, if we reduce the days indicated by Ptolemy into the Julian calendar, we are at risk to mistake ourselves by one or two days in the total number of days, which have passed since this time within the total number of days which have passed from that moment until now, since during the course of the Julian years according to the fourth should have been a leap year, was often disturbed by the popes which we find noted in Censorinus and Don Cassius. It could very well happen that since the times indicated by Ptolemy that additional one or two days had passed that have not been accounted. And starting from the Ptolemy equinoxes should be moved forward since it would then increase the days from the time. I had thought that these Arabic observations would not be subjected to such inconveniences, since a dozen centuries the Julian almanacs have not suffered any changes. I have just been informed that it was in Leyden and not at Oxford that Mr. Lemonnier has discovered the Arabic manuscript, and I am upset that I caused you so much useless troubles in regards to this article. The dead Mr., Halley had also remarked that the revolutions of the moons are faster now then they were during the time of the Chaldeens who had provided us with some sort of eclipses. However as we measure the length of the years by the numbers of days and the parts of the days which trickle through each , however this is a new questions, if the

earth's revolutions around its axis produce days of the same length. Everyone unanimously support this point without anyone ever having given any proof. As well I have been unable to see how there might have been such an inequality had there been one. Presently we measure the day's length by the numbers of oscillations that a pendulum of given length makes during a space of time. The "ancients" did not know these experiments, so that we might know if a pendulum of same length made similar or oscillations of the same force during a day as we have today. However, even if the "ancients" had made such experiments, we would not be able to conclude anything, without supposing that gravity on which an oscillation depends was always the same force. Which would prove the invariability in gravity? And even if the days would have suffered from great changes, and that the gravity would have altered conveniently in the way that the pendulum would have completed the same number of vibrations, it would be impossible for us to notice this inequality. Irrespective of how big it was. However, I have some statements taken from Jupiter's actions on the earth, proving that the movement of the earth is accelerating around its axis. Due to the fact that that Jupiter accelerates so rapidly around its orbit around the sun, that the diminishing of years would seem insignificant as long as the diurnal movement was accelerating in about the same way. Since we are not able to notice this significant diminishment of years, I will conclude that all the days suffer about the same shortening in such a way that the same number of days responds to about one year.

Mr. Baillard is settling down wonderfully into his new position; however there is less and less hope for his brother, Mr. d'Andrie, who has yet to return from his Baronetcy. I had forgotten to mention that I received a letter from Mr. Asch, who says that he has been lazy in his response. . Mr. Passavant is much obliged with your regards and offers his humble greetings. Mr. Bruck[n]er would have been quite upset at not being able to discuss the longitude which he pretends to have discovered. Professor Bruckner of whom you speak is my cousin on my mother's side, since his father was my mother's brother; if he is still in London please present my very best wishes. I also request that you present

my respects President Folkes and to Dr. Mortimer and to all the illustrious names of your Society, but most necessarily to your wife on behalf of my family. I have the honor of being most respectfully considered [...]

PS. We have yet to hear anything concerning the Jew from Hanover concerning his so-called discovery, which I would not have failed to go into great details.

1st Edit 12/1/03