

Euler to Wettstein
Berlin, 26 March 1757
Letter 294 (2795)

[...] Mr. Bertrand has a very good reason to be upset having missed the occasion until now to meet you, and I dare to flatter myself that you will have as much pleasure to know him. He must be using his time very well while in the countryside since he has written to a friend in English that even an Englishman could not have written in better fashion. Besides the language he has proposed to himself to review during his retirement all of the algebraic research that we did together, and I hope that he will happily succeed.

I am very upset that our almanacs stayed in Rotterdam for such a longtime and with what you have told me I hope that at this time that they will have finally arrived, though I cannot tell you much about their sales, the worst is that this is worthless for next year, but then we will be more cautious next year unless winter begins earlier that it did last year. You will receive at the same time a copy of my work on infinitary analysis which was printed at the expense of the Petersburg Academy and one that I mentioned as taking the liberty to present to you as a very small reward to acknowledge that I owe you so much for the much goodness that you have given me. Far from saying these things so as to attract thanks, I fear that it will become the subject of some new obligations. As the Petersburg Academy has entrusted me to sell this book, it is embarrassing to say that very few copies can be sold in Germany, and the English being accustomed to other marks and signs of expression, I dare to flatter myself that that it would receive approval in your society. If however one of your booksellers would like to take a shipment of some copies, I

would let him have them at a very good price, let's say 4 ecus a copy.

Mr. Dietrich is to be mentioned because of his inclination instruments but he should stay with Mr. Bernoulli who has assured him that if he succeeded, he would be showered with riches. I just sold him such a machine for 30 ecus. But the one that he sent to you, which he said to be was more sophisticated, I would advise him to sell for 50 or 60 ecus, it would probably be a way of getting rid of him. His nephew was a candidate who saw himself with qualities far superior to the teaching of children, especially after his father was elected magistrate, he has decided to return to Basel. However, Mr. Huber enjoys being here and has brought all of his talents to bear in perfecting his talents as astronomer.

I cannot understand the reason which so pleases you to compliment me on the subject of Mr. Mitchell. It is true that he was here for two weeks, before that I had the pleasure to know him, however in his capacity as minister would have excused an even longer delay. However to know a minister who has the approval and the confidence of our king is much too precious and too important for me not to have the greatest obligation to you.

In case that the books about which we have spoken have not yet left, might I ask you to add a dozen pounds of tobacco as stock for this year?

You will probably already have seen Mr. Murdoch who has returned to England, and who was so willing to extend his friendship at his departure from here he proposed for me to develop an alternative way of looking at the moon's atmosphere. Because having observed in ring eclipse of the sun of 1748 that the diameter of the ring had become larger than that of the sun before and after the eclipse that I had come to the conclusion that the moon's atmosphere must be thinner than that of the earth. However from that it would follow that this atmosphere would produce a definite effect when gazing at the fixed stars which is not immediately noticed, for this reason the enlargement of the sun's ring was consider doubtful to many astronomers and I would not support this if a number of observers had not seen the

same phenomenon. It is necessary to explain this ring phenomenon can exist by the by the fixed star observations: the first phenomenon proves a lunar atmosphere while the other dismisses it. To resolve this paradox, I say that the moon has an atmosphere capable of growing larger irrespective of the size of the diameter of the solar ring; however the rays of the stars that pass through the lunar atmosphere are completely invisible. Because as soon as the rays pass through the atmosphere there power is so reduced that they are no longer within viewing distance the same as if we were trying to look through fog and this is even more so since we are so far away. There is also another circumstance that adds itself and that is that the rays diverge. However the view of the solar ring is not perturb by these causes, as much due to the power of the sun's light than the fact that the rest is covered by the moon and even though the stars rays would not be entirely extinguished by the moon, they would be entirely too weak for us to see in the vicinity of the moon. For this reason, I am sure that even though the earth has a great atmosphere the inhabitants of the moon would not notice any effect when gazing at the stars passed the earth, since we know that during the lunar eclipses the earth's atmosphere appears opaque. Also one notices that when Venus block stars from our view, we notice no effect of this planet's, even though similar observations prove incontrovertibly that there is an atmosphere even a strong atmosphere around Venus, I believe this to be the answer to the paradox surrounding this question.

All of my family as well as our compatriots and especially Baron de Gorgier offer their very sincere regards as well as to your wife, by the assurance of the most perfect consideration and unflagging affections [...]

PS. We are on the eve of the most important events, in which the King's just cause and the villainy of our enemy's intentions give, us confidence that God will bless the victorious armies of our King. All of our troops are on the move. God willing he will bless us with a great success.

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