tainty, without any regard to the diſtance of the object.

Upon the whole, it may be concluded, that this micrometer is a complete inſtrument in its kind; having many advantages above the common ſort, without any of their diſadvantages: And there is no doubt, but, when brought into practice, it will tend much to the advancement of aſtronomy.

LXXV. *An Account of an Earthquake felt at* York *on the* 19*th of* April 1754. *In a Letter from Mr.* David Erſkine Baker *to* Tho. Birch, *D. D. Secret. R. S.*

Dear Sir,

Read Apr. 25, 1754. ON Friday night laſt, the 19th inſtant, at about eleven o'clock, we were alarm'd, in this city, with the ſhock of an earthquake. As I was myſelf in London, and felt both the ſhocks, which happen'd there in the year 1750, I became immediately ſenſible of what it was. In the room, in which I was ſitting, which was on a firſt floor, the tremulous, or rather undulating, motion of the floor was very plain; and the windows rattled, as if they had been ſhaken by a ſudden ſquall of wind. The ſhock laſted for about three ſeconds, and was attended, or rather preceded, by a rumbling noiſe, not much unlike that made by an empty hearſe driven over a ſtone pavement, and, indeed, exactly the ſame with that, which I remember to have heard, with both the ſhocks, in London, in 1750. The violence of the ſhock

ſhock ſeem'd to me to be nearly the ſame with that of the 8th of February, but not ſo great as that of the 8th of March, in that year; and the courſe of it, as far as I have been enabled to judge, not only from my own obſervation at the time, but from the accounts of others, ſeem'd to be nearly from ſouth-weſt to north-eaſt, it being felt the ſtrongeſt in the ſtreets which run in that direction; particularly in Stonegate, where I lodge; in Mary-gate, and Lopp-lane; in the latter of which, I was told, that a chamber-bell, in a gentleman's houſe, was heard to ring very diſtinctly; and a gentlewoman of my acquaintance, in a ſtreet, which runs parallel to theſe, who was very weakly, and was ſitting up after a lying-in, was almoſt thrown forwards out of her chair by the ſhock. As I have no great correſpondence in this county, and am, moreover, going to leave it in about a fortnight's time, I fear I ſhall not be enabled to trace out the extent of this ſhock; tho' I am inform'd, it was felt very ſenſibly at Foforth, Biſhopthorpe, Huntington, and Heſslington, ſmall towns at two or three miles diſtance from this city; and alſo at Selby, about ten miles to the ſouthward of York. If you ſhould think this account worth communicating to your illuſtrious Society, you are entirely at liberty ſo to do; and I beg you would believe, that I am, with the utmoſt ſincerity and reſpect, Sir,

Your and their

moſt obedient humble ſervant,

York, April 21, 1754.

David Erſkine Baker.

P. S.

P. S. Since the writing of the above, I have been inform'd, that, in two or three houſes, ſinging birds, which were at the time rooſting in their cages, were thrown off their perches by the ſuddenneſs of the ſhock.

LXXVI. *An Inveſtigation of ſome Theorems which ſuggeſt ſome remarkable Properties of the Circle, and are of Uſe in reſolving Fractions, whoſe Denominators are certain Multinomials, into more ſimple ones.* By *Mr.* John Landen.

Read May 2, 1754. THAT the principal theorems, below inveſtigated, will be of conſiderable uſe in the doctrine of fluxions, by rendering, in many caſes, the buſineſs of computing fluents more eaſy, will, on peruſal, be obvious to every one acquainted with that branch of ſcience. Therefore, as the facilitating computations in that doctrine (which affords us wonderful aſſiſtance in many phyſical enquiries) may be a means of extending our knowlege in philoſophy; it is preſum'd, that this paper will not be thought unworthy the notice of the Royal Society.

I.

Suppoſing $\frac{n\dot{x}}{\sqrt{x^2-1}} = \frac{\dot{y}}{\sqrt{y^2-1}}$, where $\dot{x}$ and $\dot{y}$ denote the fluxions of the variable quantities x and y re-