who ſhall ſee theſe Glaſſes, how they could be truly wrought to ſuch a Figure, with ſuch a Cavity; & yet more, when they ſhall hear the Author undertake to excavate other ſuch *Eye-Glaſſes* to above two inches, and *Object-glaſſes* of five inches *Diameter*. He hath likewiſe already begun his *Object-glaſſes* for the mentioned two *Ocular* ones, of the ſame Figure of about two inches *Diameter*, which are to be left all open, yet without cauſing any colours. Of all which 'tis hoped, that ſhortly a fuller and more particular accompt will be given.

Monſieur Auzout's *Speculations of the Changes, likely to be diſcovered in the* Earth *and* Moon, *by their reſpective Inhabitants.*

This Inquiſitive *Philoſopher* in a letter of his, lately written to his correſpondent in *London*, takes occaſion to diſcourſe of his conſiderations concerning thoſe Changes, mentioned in the *Title*, as followes;

I have (ſaith he) ſometimes thought upon the *Changes*, which 'tis likely, the ſuppoſed Inhabitants of the *Moon* might diſcover in our *Earth*, to ſee, whither reciprocally I could obſerve any ſuch in the *Moon*. For example, me-thinks, that the *Earth* would to the people of the *Moon* appear to have a different face in the ſeveral ſeaſons of the year; and to have another appearance in *Winter*, when there is almoſt nothing green in a very great part of the *Earth*; when there are Countries all covered with ſnow, others, all covered with water, others, all obſcured with Clouds, and that for many weeks together: *Another* in *Spring*, when the Forreſts and Fields are green. *Another* in *Summer*, when whole Fields are yellow &c. Me thinks, I ſay, that *theſe* changes are conſiderable enough in the force of the reflexions of Light to be obſerved, ſince we ſee ſo many differences of Lights in the *Moon*. We have *Rivers* conſiderable enough to be ſeen, and they enter far enough into

into the Land, and have a bredth capable to be obſerved. There are *Fluxes* in certain places, that reach into large Countries, enough to make there ſome apparent change; & in ſome of our Seas there float ſometimes ſuch bulky maſſes of Ice, that are far greater, than the Objects, which we are aſſured, we can ſee in the *Moon*. Again, we cut down whole Forreſts, and drain Mariſhes, of an extent large enough to cauſe a notable alteration: And men have made ſuch works, as have produced Changes great enough to be perceived. In many places alſo are *Vulcans*, that ſeem big enough to be diſtinguiſh't, eſpecially in the ſhadow: And when Fire lights upon Forreſts of great extent, or upon Towns, it can hardly be doubted, but theſe Luminous Objects would appear either in an Eccliplſe of the Earth, or when ſuch parts of the Earth are not illuminated by the Sun. But yet, I know no man, who hath obſerved ſuch things in the *Moon*; and one may be rationally aſſured that no *Vulcans* are there, or or that none of them burn at this time. This it is (*ſo he goes on*) which all Curious men, that have good *Teleſcopes*, ought well to attend; and I doubt not; but, if we had a very particular *Map* of the *Moon*, as I had deſigned to make one with a *Topography*, as it were, of all the conſiderable places therein, that We or our Poſterity would find ſome changes in Her. And if the *Mapps* of the *Moon* of *Hevelius*, *Divini*, and *Riccioli*, are exact, I can ſay, that I have ſeen there ſome places conſiderable enough, where *they* put *parts that are clear*, whereas *I* there ſee *dark ones*. 'Tis true that if there be *Seas* in the *Moon*, it can hardly fall out otherwiſe, than it doth upon our *Earth*, where *Alluvium's* are made in ſome places, and the Sea gains upon the Land in others. *I ſay*, if thoſe Spots we ſee in the *Moon*, are Seas, as moſt believe them to be; whereas I have many reaſons, that make me doubt, whether they be ſo; of which I ſhall ſpeak elſewhere. And I have ſometimes thought, whether it might not be, that all the Seas of the *Moon*, if there muſt be Seas, were on the ſide of the other *Hemiſphere*, and that for this cauſe it might be that the *Moon* turns not upon its *Axis*, as our *Earth*,

Wherein the Lands and Seas are, as it were, ballanced: That thence alſo may proceed the non-appearance of any Clouds raiſed there, or of any Vapors conſiderable enough to be ſeen, as there are raiſed upon this Earth; and that this abſence of Vapors is perhaps the cauſe, that no *Crepuſcle* is there, as it ſeems there is none, my ſelfe at leaſt not having hitherto been able to diſcerne any mark thereof: For, me thinks, it is not to be doubted, but that the reputed Citizens of the *Moon* might ſee our *Crepuſcle*, ſince we ſee, that the ſame is without compariſon ſtronger, than the *Light* afforded us by the *Moon*, even when ſhe is *full*; for, a little after Sun-ſet, when we receive no more the *firſt* Light of the *Sun*, the ſky is far clearer, than it is in the faireſt night of the *full Moon*. Mean while, ſince we ſee in *the Moon*, when ſhe is increaſing or decreaſing, the Light, ſhe receives from the Earth, we cannot doubt, but that the People of the *Moon* ſhould likewiſe ſee in the *Earth* that Light, wherewith the *Moon* illuminates it, with perhaps the difference, there is betwixt their bigneſs. Much rather therefore ſhould they ſee the Light of the *Crepuſcle*, being, as we have ſaid, incomparably greater. In the mean time we ſee not any faint Light beyond the *Section* of the Light, which is every where almoſt equaly ſtrong, and we there diſtinguiſh nothing at all, not ſo much that cleereſt part, which is called *Ariſtarchus*, or *Porphyrites*, as I have often tryed; although one may there ſee the Light, which the *Earth* ſends thither, which is ſometimes ſo ſtrong, that in the *Moon's* decreaſe I have often *diſtinctly* ſeen *all* the parts of the *Moon*, that were *not enlightned* by the *Sun*, together with the difference of the clear parts, and the Spots, ſo far as to be able to diſcern them all. The *Shaddows* alſo of all the *Cavities* of the *Moon* ſeem to be ſtronger, than they would be, if there were a *Second* Light. For, although a far off, the ſhaddows of our Bodies, environed with Light, ſeem to *Us* almoſt dark; yet they doe not ſo appear ſo much, as the Shaddows of the *Moon* doe; and thoſe that are upon the *Edge* of the *Section*, ſhould

ſhould not appear in the like manner. But, I will determine nothing of any of theſe things. When I ſhall hereafter have made more frequent Obſervations of the Moon with my *great Teleſcopes*, in convenient time, I ſhall then perhaps learn more of it, than I know at preſent, at leaſt it will excite the *Curious* to endeavor to make the like Obſervations; and it may be, others, that I have not thought of.

The Inſtance of the ſame Perſon *to Mr.* Hook, *for communicating his Contrivance of making, with a Glaſs of a Sphere of* 20 *or* 40 *foot* diameter, *a* Teleſcope *drawing ſeveral hundred foot; and his offer of recompenſing that Secret with another, teaching To meaſure with a* Teleſcope *the* Diſtances of Objects *upon the Earth.*

In *Numb.* 4. Of theſe *Papers*, pag. 67. Mr. *Hook* had intimated, that he would ſhortly diſcover a way of his, with a *Plano-convex* Glaſſe of a Sphære of 20. or 40. feet *Diameter*, without *Veines*, and truly wrought of that *Figure*, to make a *Teleſcope*, that with a ſingle *Eye-glaſs* ſhould draw 300, 400, yea 1000 feet, *without* at all *altering the Convexity*: Monſieur *Auzout* returns this conſideration, and offer upon it, which follows:

To perform (*ſaith he*) with a *leſſer Object-glaſs* the effect of a *great Teleſcope*, we muſt find out a way to make ſuch an *Object-glaſs* to receive as many Rayes as one will, without their being ſenſibly diſtant from one another; to the end, that by applying to it a *ſtronger Eye-glaſs*, there may be ſtill Beams enough to ſee the Object, and to obliterate the ſmall ſpecks and imperfections of the *Eye-glaſs*. And if Mr. *Hook* hath this Invention, I eſteem it one of the greateſt, that can be found in the matter of *Teleſcopes*: If he pleaſe to impart it to us, we ſhall be obliged to him; and

I wiſh,