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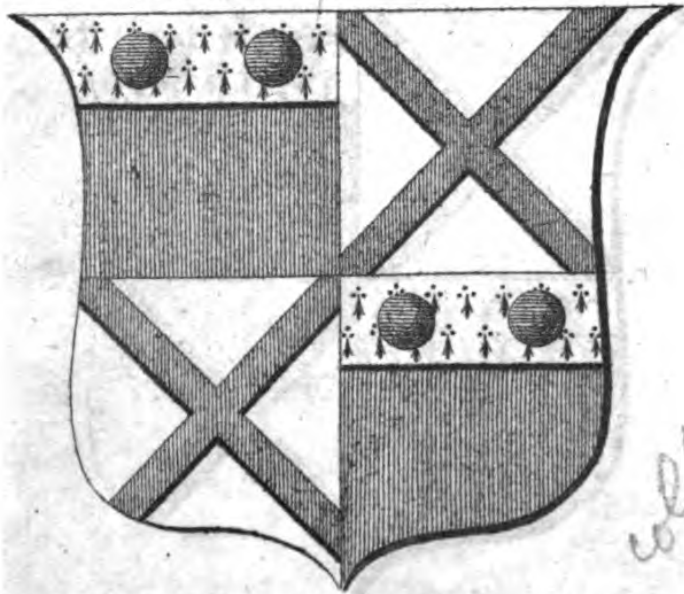
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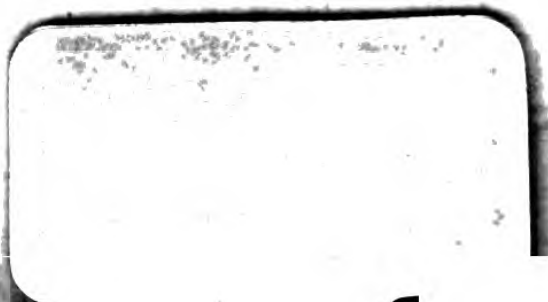


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Charles Walmesley,  
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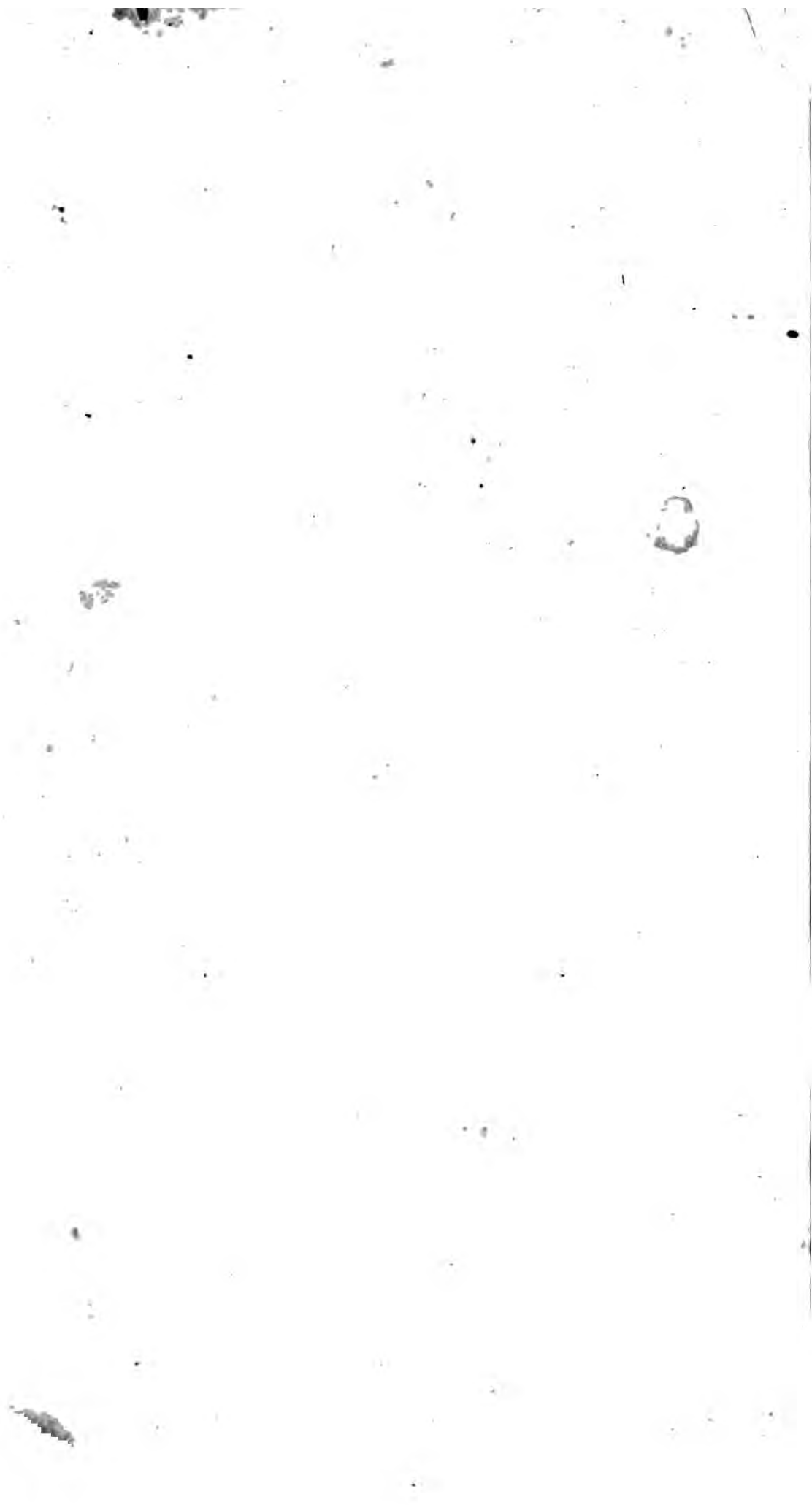


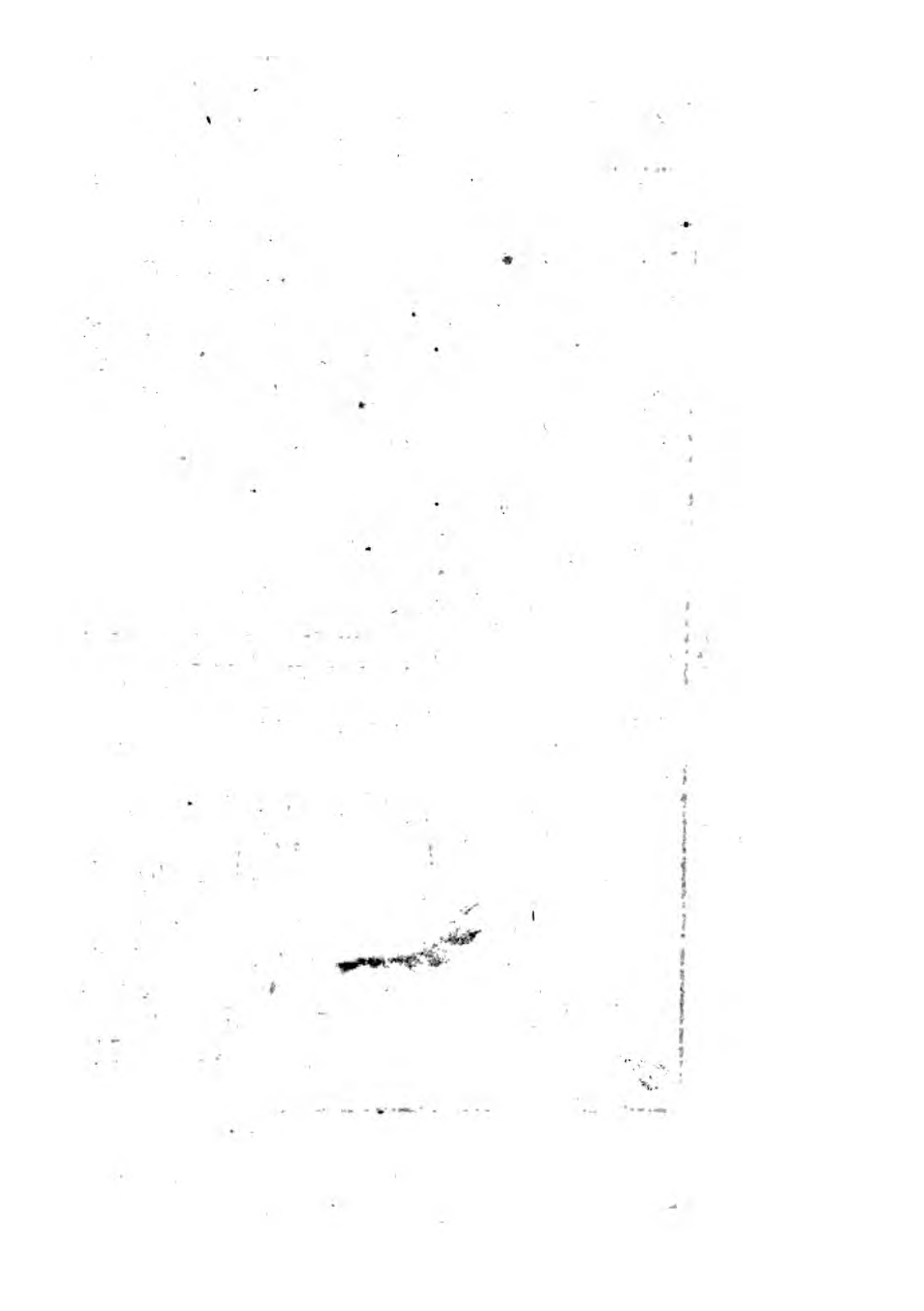
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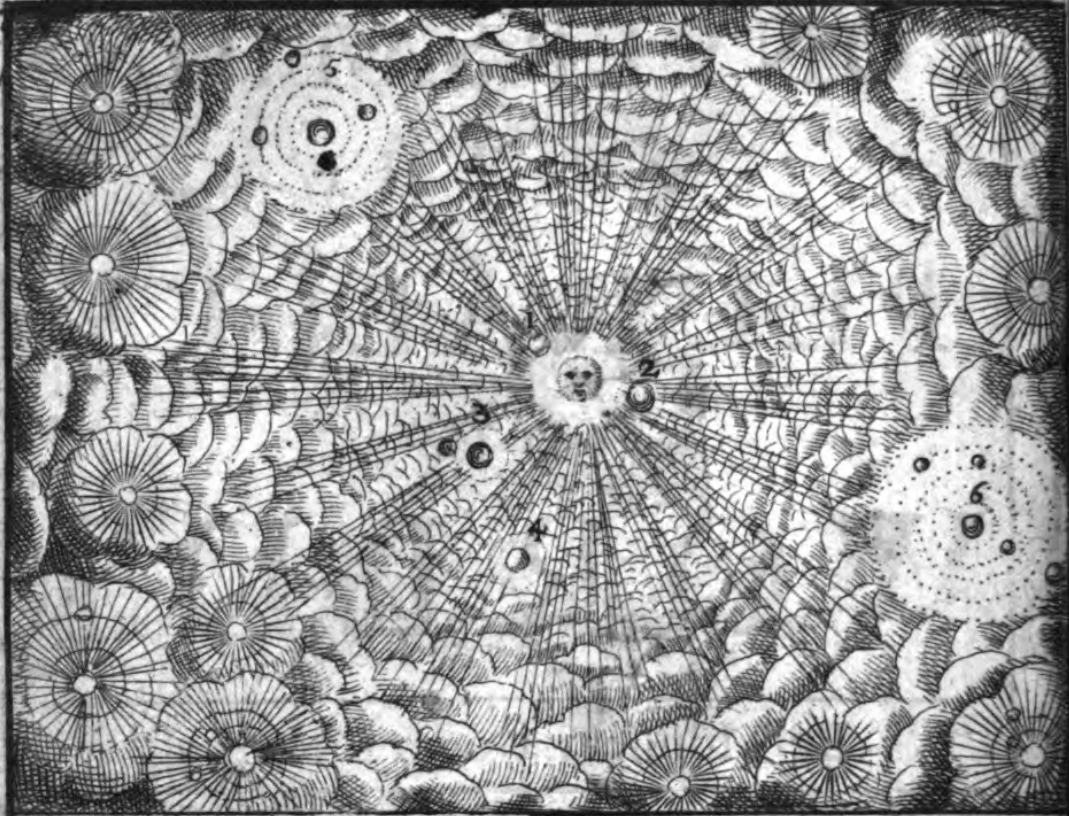
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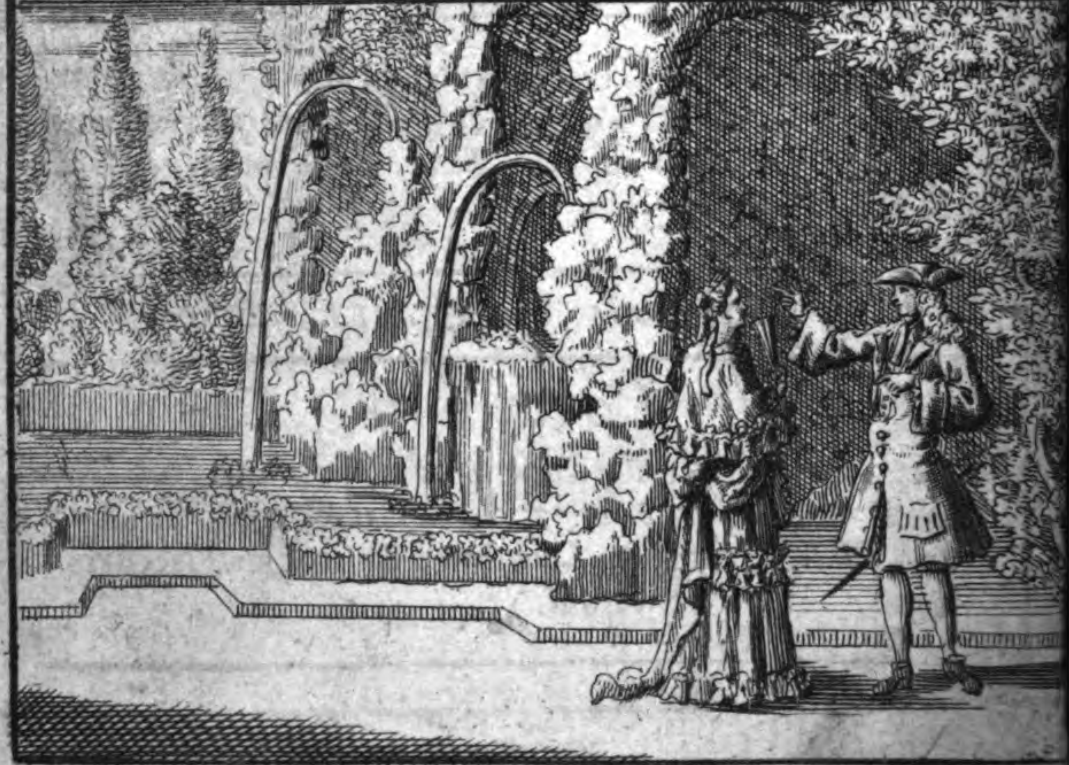
Charles Walmesley 1803







*1 Mercury. 2 Venus, 3. the Earth, 4 Mars, 5, Jupiter, 6. Saturn.*



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CONVERSATIONS  
ON THE  
PLURALITY  
OF  
WORLDS.

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By Monsieur FONTENELLE.

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*Translated from the Last Paris EDITION.*

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*Wherein are many IMPROVEMENTS throughout ;  
and some New OBSERVATIONS on several Late  
DISCOVERIES which have been made in the  
HEAVENS.*

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By WILLIAM GARDINER, *Esq*;

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OCT 20





# Monfieur FONTENELLE'S PREFACE.

I AM pretty much in the Case of Cicero, when he undertook to write of Philosophy in his own Tongue, there being then no Books upon that Subject, but what were written in Greek: He was told, as he inform'd us, that he would take Pains to no Purpose, because such as were Admirers of Philosophy, would make use of Greek Authors, and not read Latin ones, which treated of It but at Second-hand; and those who had no such Relish for this Science, would never trouble their Heads with either Greek or Latin. Cicero reply'd, it might happen quite otherwise; for, says he, the great Ease

A 2

People

## Monfieur Fontenelle's

*People will find in reading Latin Books, will tempt those to be Philosophers who are none; and they who already are Philosophers, by reading Greek Books, will be very glad to see how the Subject is handled in Latin.*

*Cicero might with good Reason answer as he did, because the Excellency of his Genius, and the great Reputation he had acquir'd, warranted the Success of all he wrote: But in a Design, not much unlike his, I am far from having those Grounds of Confidence which he had. My purpose is to Discourse of Philosophy, but not directly in a Philosophical Manner; and to raise it to such a Pitch, that it shall not be too dry and insipid a Subject to please Gentlemen; nor too mean and trifling to entertain Scholars. Should I be told (as Cicero was) that such a Discourse as this, would not please the Learned, because it can teach them nothing; nor the Illiterate, because they will have no mind to learn; I will not answer as he did: It may be, endeavouring to please every Body, I have pleas'd no Body; now, to  
keep*

## P R E F A C E.

*keep the Middle betwixt two Extreames, is so very difficult, that, I believe, I shall never desire to put my self a Second Time to the like Trouble.*

*If I should acquaint those who are to read this Book, and have any Knowledge of Natural Philosophy, that I do not pretend to Instruct, but only to Divert them, by presenting to their View in a gay and pleasing Dress, what they have already seen in a more grave and solid Habit: Not but They, to whom the Subject is New, may be both Diverted and Instructed: The first will act contrary to my Intention, if they look for Profit, and the second, if they seek for nothing but Pleasure.*

*I have chosen that Part of Philosophy which is most like to excite Curiosity; for I think nothing can concern us more, than to enquire how this World, which we inhabit, is made; and whether there be any other Worlds like it, which are also inhabited as This is? But after all, 'tis at every Body's Discretion, how far they will run their Disquisitions: They who have any Thoughts to lose, may*

## Monfieur Fontenelle's

throw them away upon fuch Subjects as thefe; but, I fuppofe fuch as can fpend their Time better, will not be at fo vain and fruitlefs an Expence.

In thefe Difcourfes, I have introduc'd a Lady, to be instructed in Things of which ſhe never heard; and I have made ufe of this Fiction, to render the Book the more acceptable, and to give Encouragement to Gentlewomen, by the Example of one of their own Sex, who without any Supernatural Parts, or Tincture of Learning, understands what is ſaid to her; and without any Confuſion, rightly apprehends what Vortexes and other Worlds are: And why may not there be a Woman like this imaginary Counteſs, ſince her Conceptions are no other than ſuch as ſhe could not chuſe but have?

To penetrate into things either obſcure in themſelves, or but darkly expreſſed, requires deep Meditation, and an earneſt Application of the Mind; but here, nothing more is requiſite than to Read, and to imprint an Idea of what is read, in the Fancy, which will certainly be clear enough.

## P R E F A C E.

*enough, I shall desire no more of the Fair Sex, than that they will peruse this System of Philosophy, with the same Application that they do a Romance or Novel when they would retain the Plot, or find out all its Beauties. 'Tis true, that the Ideas of this are less familiar to most Ladies, than those of Romances, but they are not more obscure; for at most, twice or thrice thinking, will render 'em very perspicuous.*

*I have not compos'd an Airy System, which has no Foundation at all: I have made use of some true Philosophical Arguments, and of as many as I thought necessary; but it falls out very luckily in this Subject, that the Physical-Ideas are in themselves very diverting; and as they convince and satisfie Reason, so at the same Time they present to the Imagination a Prospect which looks as if it were made on purpose to please It.*

*When I meet with any Fragments which are not of this kind, I put them into some pretty strange dress; Virgil has done the like in his Georgicks, when*  
*his*

## Monfieur Fontenelle's

his Subject is very dry, he adorns it with pleasant Digreffions: Ovid has done the fame in his Art of Love, and tho' his Subject be of it felf very pleafing, yet he thought it tedious to talk of Nothing but Love. My Subject has more need of Digreffions than his, yet I have made ufe of 'em very fparingly, and of fuch only, as the natural Liberty of Converfation allows: I have plac'd them only where I thought my Readers would be pleas'd to meet with 'em; the greateft part of 'em are in the Beginning of the Book, becaufe the Mind cannot at firft be fo well acquainted with the Principal Ideas which are prefented to it; and, in a Word, they are taken from the Subject it felf, or, are as near to it, as is poffible.

I have fancy'd nothing concerning the Inhabitants of the many Worlds, which muft have been wholly Fabulous and Chimerical; I have faid all that can be reafonably thought of them, and the Vifions which I have added, have fome real Foundation; what is true, and what is falfe  
are

## P R E F A C E.

*are mingled together, but so as to be easily distinguish'd: I will not undertake to justify so fantastical and odd a Composition, which is the principal Point of the Work, and yet for which I can give no very good Reason.*

*There remains no more to be said in this Preface, but to a sort of People, who perhaps will not be easily satisfied, tho' I have good Reasons to give 'em, but because the best that can be given, will not content 'em: They are those scrupulous Persons, who imagine, that the placing Inhabitants any where, but upon the Earth, will prove dangerous to Religion: I know how excessively tender some are in Religious Matters, and therefore I am very unwilling to give any Offence in what I publish, to People whose Opinion is contrary to that I maintain: But Religion can receive no Prejudice by my System, which fills an Infinity of Worlds with Inhabitants, if a little Error of the Imagination be but rectify'd. When 'tis said the Moon is inhabited, some presently fancy that there are such Men there,*



## Monfieur Fontenelle's.

*there, as we are; and Church-Men, without any more ado, think him an Atheist, who is of that Opinion. None of Adam's Posterity ever travel'd so far as the Moon, nor were any Colonies ever sent thither; the Men then that are in the Moon, are not the Sons of Adam: And here again Theology would be puzzled, if there should be Men any where, who never descended from him. To say no more, this is the great Difficulty to which all others may be reduc'd: To clear it by a larger Explanation, I must make use of Terms which deserve greater Respect, than to put into a Treatise, so far from being serious as this is. But perhaps there is no need of answering the Objection, for it concerns no Body but the Men in the Moon; and I never yet said there are Men there; if any ask what the Inhabitants there are, if they be not Men? All I can say is, that I never saw 'em; and 'tis not because I have seen 'em, that I speak of 'em: Let none now think, that I say there are no Men in the Moon, purposely to avoid the Objection  
made*

## P R E F A C E.

*made against me; for it appears 'tis impossible there should be any Men there, according to the Idea I have framed of that infinite Diversity and Variety, which is to be observ'd in the Works of Nature; this Idea runs through the whole Book, and cannot be contradicted by any Philosopher: Nay, I believe, I shall only hear this Objection started by such as shall speak of these Discourses, without having read them. But is this a Point to be depended on? No, on the contrary, I should more probably fear, that the Objection might be made to me from many Passages.*

*The Reader will find in this Edition, besides many Improvements interspers'd in the Body of the Work, one New Conversation, in which I have put together those Reasonings, which I had omitted in the foregoing ones; and have subjoin'd some Late Discoveries in the Firmament, several of which were never yet made Publick.*

T H E

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DIS-



# DISCOURSES

ON THE

Plurality of WORLDS,

To Monsieur R \* \* \*

**L**O give you, *Sir*, (as you desire) a full Account how I pass'd my Time at the Countess of D \* \* \* 's Country Seat, would make a large Volume; and what is yet worse, a Volume of *Philosophy*: Whereas the Entertainments you expect are of another kind, viz. *Dancing, Gaming, Hunting*, instead of which you must take up with  
B *Vortexes,*

2      Discourses on the

*Vortexes, Planets, and New Worlds*; these were the Subject of our Conversation. Now, as good Luck wou'd have it you're a Philosopher, so that it will be no great Disappointment; nay, I fancy, you'll be pleas'd, that I have brought over the Countess to our Party, we could not have gain'd a more considerable Person, for Youth and Beauty are ever inestimable: If *Wisdom* wou'd appear with Success to Mankind, think you she could do it more effectually than in the Person of the Countess? And yet was her Company but half so agreeable, I am perswaded all the World wou'd run Mad after *Wisdom*. But, tho' I tell you all the Discourse I had with the Lady, you must not expect Miracles from me. It is impossible without her Wit, to express her Sentiments, in the same manner she deliver'd them: For my part, I think her very Learned, from the great Disposition she has to Learning. It is not poring upon Books that makes a Man a Scholar. I know many who have  
done

## Plurality of WORLDS. 3

done nothing else, and yet I fancy are not one tittle the Wiser: But, perhaps you expect, before I enter upon my Subject, I should describe the Scituation, and Building of the Countess's House, many great Palaces have been turn'd inside outward upon far less Occasion: But, I intend to save you and my self that labour; let it suffice, that I tell you, I found no Company with the Lady, which I was not at all displeas'd with; the two first Days drain'd me of all the News I brought from *Paris*; what I now send you is the rest of our Conversation, which I will divide into so many Parts, as we were Evenings together.



\*\*\*\*\*

## The First Evening's CONVERSATION.

*That the Earth is a Planet which turns  
on it self, and round the Sun.*

**O**N E Evening after Supper, we went to take a turn in the Park, the Air, from the Heat of the preceeding Day was extremely refreshing; the Moon was about an Hour high, and her Lustre between the Trees, made an agreeable mixture of Light and Shade; the Stars were array'd in all their Glory, and not a Cloud appear'd throughout the Azure Sky; I was musing on this awful Prospect, but who can think long of the Moon or Stars, in the Company of a Pretty Woman? I am much mistaken if that's a Time for Contemplation: Well Madam, *says I, to the Countess,*

## Plurality of WORLDS. 5

*tests*, is not the Night as Pleasant as the Day? The Day, *says she*, like a fair Beauty, is clear and dazling; but the Night, like a brown Beauty, more soft and moving. You are Generous Madam, *replied I*, to prefer the Brown. You who have all the Charms that belong to the Fair: But, is there any Thing more Beautiful in Nature than the Day? The Heroines of Romances are generally fair, and that Beauty must be perfect, which has all the Advantages of Imagination. Tell me not, *says she*, of perfect Beauty, nothing can be so that is not moving. But since you talk of Romances, why do Lovers in their Songs and Elegies address themselves to the Night? 'Tis the Night, Madam, *says I*, that crowns their Joys, and therefore deserves their Thanks. But 'tis the Night, *says she*, that hears their Complaints, and how comes it to pass, the Day is so little trusted with their Secrets? I confess, Madam, *says I*, the Night has somewhat a more Melancholy Air than the Day; we fan-



cy the *Stars* march more silently than the *Sun*, and our Thoughts wander with the more liberty, whilst we think all the World at rest but our selves: Besides, the Day is more uniform; we see nothing but the Sun, and Light in the Firmament; whilst the Night shews us variety of Objects, and gives us ten Thousand Stars, which inspire us with as many pleasant Ideas. She reply'd, what you say is true, I love the *Stars*, there is somewhat charming in them, and I could almost be angry with the *Sun* for effacing 'em. And I can't, says I, pardon him, for keeping all those Worlds from my sight: What Worlds, says she, looking earnestly upon me, what *Worlds* do you mean?

I beg your Pardon, Madam, says I, you have put me upon my Folly, and I begin to Rave: What Folly, says she, I discover none? Alas, says I, I am ashamed, I must own it, I have had a strong Fancy that every *Star* is a *World*. I will not swear that it is true, but must think so, because it is so Pleasant to believe

## Plurality of WORLDS. 7

lieve it; 'Tis a Fancy come into my Head, which is very diverting. If your Folly be so diverting, *says the Countess*, Pray make me sensible of it; provided the Pleasure be so great, I will believe as much of the *Stars* as you would have me. A Diversion, Madam, *says I*, 'tis a Diversion I fear you won't relish, 'tis not like one of *Moliere's* Plays, 'tis a Pleasure rather of the *Fancy* than of the *Judgment*. I hope, *reply'd she*, you do not think me incapable of it; teach me your *Stars*, I will shew you the contrary. No, No, *reply'd I*, it shall never be said I was talking *Philosophy* at Ten a Clock at Night, to the most amiable Creature in the Universe, find your *Philosophers* somewhere else.

But vain were my Excuses, who could resist such Charms? I was forc'd to yield, and yet I knew not where to begin; for to a Person who understood nothing of *Natural-Philosophy*, you must go a great way about to prove that the *Earth* may be a *Planet*, the *Planets* so many *Earths*, and all the

*Stars* Worlds; however, to give her a general Notion of *Philosophy*, at last I resolv'd on this Method. Madam, says I, all *Philosophy* is founded upon these two Propositions. 1. *That we are too short sighted*, or, 2. *We are too curious*; for, if our Eyes were better than they are, we should soon see whether the *Stars* were *Worlds* or not; and if on the other side we were less Curious, we should not care whether the *Stars* are *Worlds* or not, which I think is much to the same Purpose. But the Business is, we have a mind to know more than we see: And again, if we could discern well what we do see, it would be so much known to us; but we See Things quite otherwise than they are. So that your true Philosopher will not believe what he does see, and is always conjecturing at what he doth not, which I think is a Life not much to be envy'd: Upon this I fancy to my self, that *Nature* very much resembles an *Opera*, where you stand, you do not see the *Stage* as it really is; but as 'tis plac'd

## Plurality of WORLDS. 9

plac'd with Advantage, and all the Wheels and Movements hid, to make the Representation the more agreeable: Nor do you trouble your self how, or by what Means the Machines are mov'd, tho' certainly an Engineer in the Pit is affected with what does not touch you; he is pleas'd with the Motion, and is demonstrating to himself on what it depends, and how it comes to pass. This Engineer is like a Philosopher, tho' the Difficulty be greater on the Philosopher's part, the Machines of the Theatre being nothing so Curious as those of Nature, which disposes her Wheels and Springs so out of sight, that we have been a long while guessing at the Movement of the Universe. Let us imagine, some of the Ancient Sages, to be at an Opera, the *Pythagoras's*, the *Plato's*, the *Aristotle's*, and all the Wise Men who have made such a Noise in the World, for these many Ages: We will suppose 'em at the Representation of *Phaeton*, where they see the aspiring Youth lifted up by the

Winds, but do not discover the Wires by which he mounts, nor know they any Thing of what is done behind the Scenes. Would you have all these Philosophers own themselves to be stark Fools, and confess ingenuously they don't know how it comes to pass: No, no, they are not called *Wise-Men* for nothing; tho', let me tell you, most of their Wisdom depends upon the Ignorance of their Neighbours. Every Man presently gives his Opinion, and how improbable soever, there are Fools enough of all sorts to believe 'em: One tells you *Phaeton* is drawn up by a hidden Magnetick Vertue, no matter where it lies; and perhaps the grave Gentleman will take Pet, if you ask him the Question. Another says, *Phaeton* is compos'd of certain Numbers that make him mount; and after all, the Philosopher knows no more of those Numbers than a sucking Child does of *Algebra*: A third tells you, *Phaeton* has a secret love for the Top of the Theatre, and like a true Lover, cannot

## Plurality of WORLDS. 11

not be at rest out of his Mistress's Company, with an hundred such extravagant Fancies, that a Man must conclude the Old Sages were very good Banterers: But, now comes Monsieur *Descartes*, with some of the Moderns, and they tell you *Phaeton* ascends, because a greater Weight than he descends; so that now we do not believe a Body can move without it is push'd and forc'd by another Body, and, as it were, drawn by Cords, so that nothing can rise or fall, but by the Means of a Counterpoise; to see Nature then, as she really is, one must stand behind the Scenes at the Opera. I perceive, *says the Countess*, Philosophy is now become very Mechanical. *Yes, Madam*, *says I*, so Mechanical, that I fear we shall quickly be asham'd of it; they will have the World to be in Large, what a Watch is in Small; which is very regular, and depends only upon the just disposing of the several Parts of the Movement. But pray tell me, *Madam*, had you not formerly a more sublime

sublime Idea of the Universe? Don't you think you then honour'd it more than it deserv'd? For most People have the less Esteem for it since they have pretended to know it. I am not of their Opinion, *says she*, I value it the more since I know it resembles a Watch, and the more plain and easy the whole order of Nature seems to be, to me it appears the more admirable.

I don't know, *says she*, who has inspir'd you with these solid Notions, but I am certain there are but few who have them besides your self, People generally admire what they do not comprehend, they have a Veneration for Obscurity, and look upon Nature, as a kind of Magick, while they don't understand her, and despise her below Legerdemain, when once they are acquainted with her; but I find you, Madam, so much better disposed, that I have nothing to do but to draw the Curtain, and shew you the World. That then which appears farthest from the Earth, (where we reside) is called  
the

## Plurality of WORLDS. 13

the Heavens, that Azure Firmament where the Stars are fastned like so many Nails, (and are call'd fix'd, because they seem to have no other Motion than that of their Heaven, which carries them with it self from East to West.) Between the Earth and this great Vault (as I may call it) hang at different Heights the *Sun*, and the *Moon*, with the other five Stars, *Mercury*, *Venus*, *Mars*, *Jupiter* and *Saturn*, which we call the Planets, not being fastned to the same Heaven, and having very unequal Motions, have divers Aspects and Positions. Whereas the fix'd Stars in respect to one another, are always in the same Scituation: For Example, *Charles's Wain* which is compos'd of those seven Stars, has been and ever will be as it now is, tho' the *Moon* is sometimes nearer to the *Sun*, and sometimes farther from it, and so it is with the rest of the Planets. Thus things appear'd to the Old *Chaldean* Shepherds, whose great Leisure produc'd these first Observations, which have since been the Foundation of Astronomy;



nomy; which Science had its Birth in *Chaldea*, as Geometry sprung from *Egypt*, where the Inundation of the *Nile* confounding the Bounds of their Fields, occasion'd their inventing more exact Measures to distinguish every ones Land from that of his Neighbour. So that *Astronomy* was the Daughter of *Idleness*, *Geometry* the Daughter of *Interest*; and if we did but examine *Poetry*, we should certainly find her the Daughter of *Love*.

I am glad, says the Lady, I have learnt the Genealogy of the Sciences, and am convinc'd I must stick to *Astronomy*, my Soul is not mercenary enough for *Geometry*, nor is it tender enough for *Poetry*; but I have as much Time to spare as *Astronomy* requires; besides we are now in the Country, and lead a kind of *Pastoral Life*, all which suits best with *Astronomy*. Don't deceive your self, Madam, says I, 'tis a true *Shepherd's Life* to talk of the Stars and Planets: See if they pass their Time so in *Astraea*. That sort of *Shepherd's Craft*,

Plurality of WORLDS. 15

Craft, *reply'd she*, is too dangerous for me to learn; I love the honest *Chaldeans*, and you must teach me their Rules, if you'd have me improve in their Science. But let us proceed; When they had rank'd the Heavens in the Manner you tell me, pray, what is the next Question? The next, *says I*, is the disposing the several Parts of the Universe, which the Learned call, making a System; but before I expound the first System, I would have you observe, we are all naturally like the Madman at *Athens*, who fancy'd all the Ships that came into the *Pyræum* Port, belong'd to him: Nor is our Folly less extravagant, we believe all things in Nature design'd for our Use; and do but ask a Philosopher, to what Purpose there is that prodigious company of fix'd Stars, when a far less Number would perform the Service they do us? He answers coldly, they were made to please our Sight. Upon this Principle they imagin'd the Earth rested in the Center of the Universe, while all the Celestial  
Bodies

Bodies (which were made for it) took the Pains to turn round to give Light to it. They plac'd the *Moon* above the *Earth*, *Mercury* above the *Moon*, after *Venus*, the *Sun*, *Mars*, *Jupiter*, *Saturn*; above all these they set the Heaven of fix'd Stars, the *Earth* was just in the Middle of those Circles which contain the Planets, and the greater the Circles were, they were the farther distant from the *Earth*, and by Consequence the farthest Planets took up the most Time in finishing their Course, which in effect is true: But why, *says the Countess* (interrupting me) do you dislike this System: It seems to me very clear and intelligible. However, *says I*, Madam, I will make it plainer; for should I give it you as it came from *Ptolomey* its Author, or some others who have since studied it, I should fright you, I fancy, instead of diverting you. Since the Motions of the Planets are not so regular, but that sometimes they go faster, sometimes slower, sometimes are nearer the *Earth*, and sometimes farther

## Plurality of WORLDS. 17

further from it; the Ancients invented I don't know how many Orbs or Circles, involv'd one within another, which they thought would salve all Objections; this Confusion of Circles was so great, that at that Time when they knew no better, a certain King of *Aragon*, a great Mathematician, (but not much troubled with Religion,) said, *That had God consulted him when he made the World, he would have told him how to have fram'd it better.* The Saying was very Atheistical, and no doubt the Instructions he would have given the Almighty, was the Suppressing those Circles with which they had clog'd the Celestial Motions, and the taking away two or three superfluous Heavens, which they plac'd above the fix'd Stars; for these Philosophers, to explain the Motion of the Celestial Bodies, had above the uppermost Heaven (which we see) found another of Crystal, to influence and give Motion to the inferiour Heavens; and wherever they heard of another Motion, they presently clap'd up a Crystal  
Heaven

Heaven which cost 'em nothing. But why, *says the Countess*, must their Heaven be of Crystal, wou'd nothing else serve as well? No, no, *reply'd I*, nothing so well; for the Light was to come through them, and yet they were to be solid. *Aristotle* would have it so, he had found Solidity to be one of their Excellencies, and when he had once said it, no Body would be so rude as to question it. But it seems there were Comets much higher than the Philosophers expected, which as they pass'd along broke the Crystal Heavens, and confounded the Universe. But to make the best of a bad Market, they presently melted down their broken Glafs, and to *Aristotle's* Confusion, made the Heavens fluid; and by the Observations of these latter Ages, it is now out of doubt, that *Venus* and *Mercury* turn round the *Sun*, and not round the *Earth*, according to the Ancient System, which is now every where exploded, and all the Authorities not worth a Rush. But that which I am going to lay down, will  
 falve

## Plurality of WORLDS. 19

salve all, and is so clear, that the King of *Aragon* himself may spare his Advice. Methinks, *says the Countess*, your Philosophy is a kind of Out-cry, where he that offers to do the Work cheapest, carries it from all the rest. This, *says I*, is very true, Nature is a great Hufwife, she always makes use of what costs least, let the Difference be never so inconsiderable; and yet this Frugality is accompany'd with an extraordinary Magnificence, which shines through all her Works; that is, she is Magnificent in the Design, but Frugal in the Execution; and what can be more Praise worthy, than a great Design accomplish'd with a little Expence? But in our Ideas we turn Things topsy-turvy, we place our thrift in the Design, and are at ten times more Charge in Workmanship than it requires, which is very ridiculous. Imitate Nature then, *says she*, in your System, and give me as little trouble as you can to comprehend you. Madam, *says I*, fear it not, we've done with our Impertinences: Imagin then a *German*

*man* call'd *Copernicus* confounding every Thing, tearing in Pieces the belov'd Circles of Antiquity, and shattering their Crystal Heavens like so many Glas Windows, seiz'd with the noble Rage of Astronomy, he snatches up the Earth from the Center of the Universe, sends her packing, and places the *Sun* in the Center to which it did more justly belong, the Planets no longer turn round the Earth, nor inclose it in the Circles they describe; if they give us Light, it is but by chance, and as they meet us in their way. All now goes round the *Sun*, even the *Earth* herself; and *Copernicus* to punish the Earth for her former Laziness, makes her contribute all he can to the Motion of the Planets and Heavens, and now strip'd of all the Heavenly Equipage with which she was so gloriously attended, she has nothing left her but the *Moon*, which still turns round about her: Fair and softly, *says the Countess*, I fancy you your self are seiz'd with the Noble Fury of Astronomy; a little less Rapture,

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ture, and I shall understand you better. The *Sun* you say is in the Center of the Universe, and is immoveable; *Mercury*, says I, follows next, he turns round the Sun, so that the Sun is in the Center of the Circle wherein *Mercury* moves; above *Mercury* is *Venus*, who turns all round the Sun; after, comes the Earth, which being plac'd higher than *Mercury* and *Venus*, makes a greater Circle round the Sun than either of them; at last comes *Mars*, *Jupiter* and *Saturn*, in the same Order I name 'em, so that *Saturn* has the greatest Circle round the Sun, which is the Reason he is a longer Time in making his Revolution than any of the other Planets. You have forgot the *Moon*, says the Countess, we shall quickly find her again, says I, the *Moon* turns round the Earth, and does not leave her, but as the Earth advances in the Circle, which she describes about the Sun; and if the *Moon* turns round the Sun, it is because she won't quit the Earth; I understand you, says she, and I love the *Moon* for staying



staying with us when all the other Planets abandon us; nay, I fear your *German* would have willingly taken her away too if he could; for in all his Proceedings, I find he had a great spite to the Earth. 'Twas well done of him, says I, to abate the Vanity of Mankind, who had taken up the best Place in the Universe, and it pleases me to see the Earth in the Clouds of the Planets. Sure, says she, you don't think their Vanity extends it self so far as Astronomy! Do you believe you have humbled me, in telling me the *Earth* goes round the *Sun*? For my part I don't think my self the worse for it. I confess, Madam, says I, it is my belief, that a fair Lady wou'd be much more concern'd for her Place at a Ball, than for her Rank in the Universe; and the Precedence of two Planets will not make half such a Noise in the World, as that of two Ambassadors; however, the same Inclination which reigns at a Ceremony, governs in a System; and if you love the uppermost Place

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Place in the one, the Philosopher desires the Center in the other; he flatters himself that all Things were made for him, and insensibly believes a Matter of pure Speculation to be a Point of Interest. This is a Calumny, *says she*, you have invented against Mankind; why did they receive this System if it was so Erronious? I know not, *says I*, but I am sure *Copernicus* himself distrusted the Success of his Opinion, 'twas a long time before he would venture to publish it, nor had he done it then, without the Importunity of his Friends. But do you know what became of him? The very Day they brought him the first printed Sheet of his Book, he dy'd; foreseeing that he should never be able to clear all the Contradictions, and therefore very wisely slipt out of the way. I would be Just to all the World, *says the Countess*; but 'tis hard to fancy we move, and yet see we do not change our Place; we find our selves in the Morning where we lay down at Night: Perhaps

haps you'll tell me the whole Earth moves— Yes, certainly, *says I*, 'tis the same Case as if you fell asleep in a Boat upon the River, when you wake you find your self in the same Place, and the same Scituation, in respect to all the Parts of the Boat. 'Tis true, *reply'd she*, but here's a great Difference, when I wake I find another Shoar, and that shows me, my Boat has chang'd its Place. But 'tis not the same with the Earth, I find all Things as I left 'em. No, no, *says I*, there's another Shoar too ; You know that beyond the Circles of the Planets are fix'd Stars, there's our Shoar, I am upon the Earth, and the Earth makes a great Circle round the Sun ; I look for the Center of the Circle and see the Sun there, then I direct my sight beyond the Sun in a right Line, and should certainly discover the fix'd Stars which answer to the Sun, but that the Light of the Sun effaces 'em : But at Night I easily perceive the Stars that corresponded with him in the Day, which is exactly

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exactly the same Thing; if the Earth did not change its place in the Circle where it is, I should see the Sun always against the same fix'd Stars; but when the Earth changes its place, the Sun must answer to other Stars, and there again is your Shore which is always changing. And seeing the Earth makes her Circle in a Year, I see the Sun likewise in the space of a Year answer successively to the whole Circle of the fix'd Stars, which Circle is call'd the *Zodiack*: I'll draw you the Figure of it, if you please, on the Sand? 'Tis no matter, *says she*, I can do well enough without it; besides it will give an Air of Learning to my Park which I would not have in it: For I've heard of a certain Philosopher, who being Shipwreck'd, and cast upon an unknown Island, seeing several Mathematical Figures traced on the Sea-shore, cry'd out to those who follow'd him, *Courage, Courage, my Companions, the Isle is inhabited, behold the footsteps of Men.* But you may  
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spare your Figures, such Footsteps are not decent here.

I confess, Madam, *says I*, the Footsteps of Lovers would better become this Place; that is, your Name and Cypher cut on the Trees by your Adorers. Tell me not, *says she*, of Lovers and Adorers, I am for my beloved *Sun* and *Planets*. But how comes it to pass that the *Sun* as to the fix'd Stars, compleats his Course but in a Year, and yet goes over our Heads every Day? Did you never, *reply'd I*, observe a Bowl on the Green? It runs towards the Block, and at the same time turns very often round itself, so that the Parts which were above are below, and those which were below are above; just so it is with the Earth, at the same time that she advances on the Circle, which in a Year's space she makes round the Sun, in twenty four Hours she turns round her self; so that in twenty four Hours every Part of the Earth loses the Sun, and recovers him again, and as it turns towards the Sun, it seems to rise, and as it turns from him,

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him, it seems to fall. 'Tis very pleasant, *says she*, that the Earth must take all upon her self, and the Sun do nothing: And when the Moon, the other Planets, and the fix'd Stars seem to go over our Heads every twenty four Hours, you'll say That too is only Fancy? Pure Fancy, *says I*, which proceeds from the same Cause, for the Planets compleat their Courses round the Sun at unequal times, according to their unequal Distances; and That which to Day we see answer to a certain Point in the *Zodiack*, or *Circle* of the fix'd Stars, to Morrow will answer to another Point, because it is advanc'd on its own Circle, as well as we are advanc'd upon ours: We move, and the Planets move too, but with more or less Rapidity than we; this puts us in different Points of Sight in respect to them, and makes us think their Courses irregular; but there is no Occasion of discoursing to you on that Head; 'tis sufficient to inform you that what seems irregular in the Planets, proceeds only from our

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Motion,

Motion, when in Truth they are all very regular. I will suppose 'em so, *says the Countess*, but I would not have their Regularity put the Earth to so great Trouble; methinks you exact too much Activity from so ponderous a Mass. But, *says I*, had you rather that the Sun and all the Stars, which are vast great Bodies, should in twenty four Hours make a prodigious *Tour* round the Earth; and that the fix'd Stars which are in a Circle of infinite Extent, whose Movement is always extreme, should run in a Day, three hundred Millions of Leagues, and go farther than from hence to *China* in the Time that you could say, *Away, quick to China*, as they needs must, if the Earth did not turn round it self every twenty four Hours? To say the Truth, 'tis much more reasonable to think that she should make the *Tour*, which at most is not above nine thousand Leagues; you perceive plainly, that to set nine thousand Leagues against three Hundred Millions, is no trifling Difference

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rence. Oh, *says she*, the Sun and the Stars are all Fire, their Motion is not very difficult; but the Earth I fancy, is a little unweildy. That, *reply'd I*, signifies nothing; for what think you of a First Rate Ship, which carries 150 Guns, and above 3000 Men, besides her Provisions and other Furniture? One Puff of Wind you see sets it a sailing, because the Water is liquid, and being easily separated, very little resists the Motion of the Ship; or if she lie in the Middle of a River, she will without Difficulty drive with the Stream, because there is nothing to oppose her Course. So the Earth, tho' never so weighty, is as easily born up by the Celestial Matter, which is a thousand times more fluid than the Water, and fills all that great space where the Planets float; for how else would you have the Earth fastned to resist the Motion of the Celestial Matter, and not be driven by it? You may as well fancy a little Block of Wood can withstand the Current of a River. But



pray, *says she*, how can the Earth with all its Weight be born up by your Celestial Matter, which must be very light, because it is so fluid? It does not argue, *says I*, that what is most fluid, is most light: For what think you of the great Vessel I mention'd just now, which with all its Burthen is yet lighter than the Water it floats on? I'll have nothing to do with that great Vessel, *says she*, with some Warmth, and I begin to apprehend my Self in some Danger upon such a Whirlegig as you have made of the Earth. There is no Danger, *reply'd I*, but Madam, if your Fears increase, we'll have the Earth supported by four Elephants, as the *Indians* believe it. Hey day, *crys she*, here's another System; however I love those People for taking care of themselves, they have a good Foundation to trust to, while we *Copernicans* are a little too venturous with the Celestial Matter; and yet I fancy if the *Indians* thought the Earth in the least danger of sinking, they would double their Number of Elephants.

They

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They do well, *says I*, laughing at her Fancy, who would sleep in fear? And if you have occasion for 'em to Night, we will put as many as you please in our System, we can take 'em away again by Degrees as you grow better confirm'd. I don't think 'em very necessary, *says she*, I have Courage enough to turn. You shall turn with Pleasure, Madam, *says I*, and shall find delightful Ideas in this System. For Example, sometimes I fancy my self suspended in the Air, without any Motion, while the Earth turns round me in twenty four Hours; I see I know not how many different Faces pass under me, some White, some Black, and some Tauny; sometimes I see Hats, and sometimes Turbants, now Heads with Hair, and then shav'd Pates; here I see Cities with Steeples, some with Spires and Crescents, others with Towers of *Purcelain*, and anon great Countries with nothing but Huts; here I see vast Oceans, and there most horrible Desarts; in short, I dis-

cover the infinite Variety which is upon the Surface of the Earth.

I confess, *says she*, twenty four Hours would thus be very well bestow'd, so that in the Place where we are now, I don't mean in the Park, but we will suppose our selves in the Air, other People continually pass by who take up our Place, and at the End of twenty four Hours we return to it again.

*Copernicus* himself, *says I*, could not have comprehended it better: First then might we see the *English* passing by us, up to the Ears in Politics, yet settling the Nation no better than we do the *World* in the *Moon*; then follows a great Sea, and there perhaps some Vessel, not near in that Tranquility as we are; then come some of the *Iroquois* going to eat a Prisoner for their Breakfast, who seems as little concern'd as his Devourers. After appear the Women of the Land of *Jesso*, who spend all their Time in dressing their Husband's Dinners and Suppers, and painting their Lips and Eye-brows Blue, only to please  
the

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the greatest Brutes in the World. Then the *Tartars* going devoutly on Pilgrimage to their Great *Prester John*, who never comes out of a Gloomy Apartment all hung with Lamps, by the Light of which they pay their Adoration to him: Then the fair *Circassians*, who make no Scruples of granting every thing to the first Comer, except what they think essentially belongs to their Husbands: Then the Inhabitants of little *Tartary* going to steal Concubines for the *Turks* and *Persians*; and at last, our own dear Countrymen, it may be in some Points as ridiculous as the best of 'em.

This, says the *Countess*, is very pleasant, but to imagine what you tell me, tho' I were above, and saw all this, I would have the Liberty to hasten or retard the Motion of the Earth, according as the Objects pleas'd me more or less; and I assure you I should quickly send packing the *Politicians* and *Man-eaters*, but should have a great Curiosity for the fair *Circassians*; for methinks they have a Custom very particular. But I have a

Difficulty to clear, and you must be serious. As the Earth moves, the Air changes every Moment, so we breath the Air of another Country. Not at all, *reply'd I*, for the Air which encompasses the Earth, does not extend above a certain Height, perhaps 20 Leagues; it follows us and turns with us: Have you not seen the Work of a Silk-Worm, the Shells which those little Animals imprison themselves in, and weave with so much Art; they are made of a Silk very close, but are cover'd with a Down very loose and soft: So the Earth which is solid, is cover'd from the Surface 20 Leagues upwards with a kind of Down, which is the Air, and all the Shell of the Silk-Worm turns at the same Time. Beyond the Air is the Celestial Matter, incomparably more pure and subtle, and much more agitated than the Air.

Your Comparison, *says she*, is somewhat mean, and yet what Wonders are wrought, what Wars, what Changes in this little Shell? 'Tis true, *reply'd I*, but Nature takes no notice of such little par-

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particular Motions, but drives us along with the general Motion, as if she were at Bowls.

Methinks, *says she*, 'tis very ridiculous to be upon a Thing that turns, and be in all this Perplexity, and yet not be well assur'd that it does turn; and to tell you the Truth, I begin to distrust the Reasons you give, why we should not be sensible of the Motion of the Earth; for is it possible there should not be some little Mark left, by which we might perceive it?

All Motions, *says I*, the more common and natural they are, are the less perceptible, and this holds true even in Morality; the Motion of *Self-love* is so natural to us, that for the most part we are not sensible of it, and we believe we act by other Principles. Now, *says she*, are you moralizing to a Question of *Natural-Philosophy* which is running wide of the Argument: But enough, this Lecture is sufficient for the first Time, let us now go home, and meet here again to-Morrow, You with your Systems, and I with my Ignorance. In

In returning back to the Castle, that I might say all I could on the Subject, I told her of a third System, invented by *Ticho Brahe*, who had fix'd the *Earth* in the *Center* of the World, turn'd the *Sun* round the *Earth*, and the rest of the *Planets* round the *Sun*; for since the New Discoveries, there was no Way left to have the *Planets* turn round the *Earth*. But the *Countess* with the quickest Apprehension, reply'd, she thought this too affected a System, that among so many great Bodies, the *Earth* only should be exempted from turning round the *Sun*; that it was improper to make the *Sun* turn round the *Earth*, when all the *Planets* turn round the *Sun*; and that tho' this Scheme was to prove the Immobility of the *Earth*, yet she thought it very improbable: So we resolv'd to stick to *Copernicus*, whose Opinion we thought most Uniform, Probable, and Diverting. In a Word, the Simplicity of which convinces, and the Boldness surprizes with pleasure.

The



## The Second Evening's CONVERSATION.

*That the Moon is an Inhabited World.*

THE next Morning, as soon as  
T any one could get admittance,  
I sent to the Countess's Apartment, to know how she had rested, and whether the Motion of the Earth had not disturb'd her? She return'd for Answer, she began to be accusom'd to it, and that *Copernicus* himself had not slept better. Some time after there came some Neighbours to Dinner, who stay'd with her till the Evening, according to the tiresom Custom in the Country; nay, and they were very obliging in going then, for the Country likewise gives a Priviledge of extending their Visit to the next Morning if they are so disposed, and  
have



have not the Conscience to break up. So the *Countess* and I found our selves at Liberty, in the Evening; We went again to the Park, and immediately fell upon our Systems: She so well retain'd what I told her the Night before, that she desir'd I would proceed without any Repetition. Well, Madam, *says I*, Since the *Sun*, which is now immovable, has left off being a *Planet*; and the *Earth* which turns round him is now become one, you'll not be surpriz'd when you hear that the *Moon* is an *Earth* too, and an habitable World. I confess, *says she*, I have often heard talk of the *World* in the *Moon*, but I always look'd upon it as Visionary and meer Fancy. And, *says I*, it may be so still; I am in this Case, as People in a Civil-War, where the uncertainty of what may happen, makes 'em hold Intelligence with the opposite Party, and correspond with their very Enemies; for tho' I verily believe the *Moon* is Inhabited, I live civilly with those who do not believe it; and I am (like some  
honest

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honest Gentlemen in Point of Religion) still ready to embrace the prevailing Opinion, but till the Unbelievers have a more considerable Advantage, I declare for the Inhabitants of the Moon.

Suppose there had never been any Communication between *Paris* and *St. Dennis*, and a Cockney who was never beyond the Walls of his own City, saw *St. Dennis* from the Towers of *Noſtre-Dame*; you ask him if he believes *St. Dennis* is Inhabited as *Paris* is? He presently answers boldly, No; for, *says he*, I see very well the People at *Paris*, but those at *St. Dennis* I don't see at all, nor did I ever hear of any there: 'Tis true, you tell him, that from the Towers of *Noſtre-Dame*, he cannot perceive any Inhabitants of *St. Dennis*, because of the distance; but all that he does discover of *St. Dennis*, very much resembles what he sees at *Paris*, the Steeples, Houses, Walls, so that it may very well be Inhabited as *Paris* is; all this signifies nothing, my Cockney still maintains that *St. Dennis*

*Dennis* is not inhabited, because he sees no Body there. The Moon is our *St. Dennis*, and every one of us is like this *Parisian* Cockney, who never went out of his own City.

You are too severe, *says she*, upon your Fellow Citizens; we are not all sure so silly as your Cockney; since *St. Dennis* is just like *Paris*, he is a Fool if he does not think it inhabited: But the Moon is not at all like the Earth. Take care what you say, Madam, *reply'd I*, for if the Moon resembles the Earth, you are under a necessity to believe it inhabited. If it be so, *says she*, I own I cannot be dispens'd from believing it; and you seem so confident of it, that I fear I must, whether I will or no. 'Tis true, the two Motions of the Earth, (which I could never Imagine till now) do a little stagger me as to all the rest; but yet, how is it possible the Earth should enlighten as the Moon does, without which they cannot be alike? If that be all, *says I*, the Difference is not great, for 'tis the Sun which is the sole Fountain

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tain of Light; that Quality proceeds only from him; and if the Planets give Light to us, it is because they first receive it from the Sun; the Sun sends Light to the Moon, and she reflects it back on the Earth; the Earth in the same manner receives Light from the Sun, and sends it to the Moon; for the Distance is the same between the Earth and the Moon, as between the Moon and the Earth.

But, *says the Countess*, is the Earth as fit to send back the Light of the Sun as the Moon is? You are altogether for the Moon, *says I*, she is much oblig'd to you; but you must know that Light is made up of certain little Balls, which rebound from what is Solid, but pass through what admits of an entrance in a right Line, as Air or Glafs: So that what makes the Moon enlighten us, is that she is a firm and solid Body, from which the little Balls rebound; and we must deny our Senses, if we will not allow the Earth the same Solidity; in short, the Difference is how we are seated, for the

the Moon being at so vast a distance from us, we can only discover her to be a Body of Light, and don't perceive that she is a great Mass, altogether like the Earth: Whereas on the contrary, because we are so near the Earth, we know her to be a great Mass, proper for the furnishing Provision for Animals, but don't discover her to be a Body of Light, for want of the due Distance: It is just so with us all, *says the Countess*, we are dazzled with the Quality and Fortune of those who are above us, when, do but examine Things nicely, and we are all upon a Level.

Its very true, *says I*, we would judge of all Things, but still stand in the wrong Places; we are too near to judge of our selves, and too far off to know others: So that the true way to see Things as they are, is to be between the Moon and the Earth, to be purely a Spectator of this World, and not an Inhabitant. I shall never be satisfy'd, *says she*, for the Injustice we do the Earth, and the too favourable Opinion we have  
of

## Plurality of WORLDS. 43

of the Moon, till you assure me that the Inhabitants of the Moon are as little acquainted with their Advantages, as we are with ours; and that they take our Earth for a Planet, without knowing theirs is one too. Don't doubt it, *says I*, we appear to them to perform very regularly our Function of a Planet: 'Tis true, they don't see us make a Circle round them, but that is no great matter. That half of the Moon which was turn'd towards us at the beginning of the World, has been turn'd towards us ever since; the Eyes, Mouth and Face which we have fancy'd of the Spots in her, are still the same, and if the other opposite half should appear to us, we should, no doubt, fancy another Figure from the different Spots that are in it: Not but that the Moon turns upon herself, and in the same time that she turns round the Earth, that is in a Month; but while she is making that turn upon herself, and that she shou'd hide a Cheek, for Example, and appear somewhat else to us, she makes a like part of her Circle  
round

round the Earth, and still presents to us the same Cheek; so that the Moon, who in respect of the Sun and Stars turns round her self, in respect of us does not turn at all; they seem to her to rise and set in the space of fifteen Days; but for our Earth, it appears to her to be held up in the same Place of the Heavens: 'Tis true, this apparent Immobility is not very agreeable to a Body which should pass for a Planet, but it is not altogether perfect; the Moon has a kind of trembling which causes a little Corner of her Face to be sometimes hid from us, and a little corner of the opposite half appears; but then upon my Word she attributes that trembling to us, and fancies that we have in the Heavens the Motion of a *Pendulum*, which vibrates too and fro.

I find, *says the Countess*, the Planets are just like us; we cast that upon others which is in our selves; says the Earth, *'Tis not I that turn, 'tis the Sun*; the Moon says, *'tis not I that shake, 'tis the Earth*; there is a great deal of Er-

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ror every where. But I would not advise you, *says I*, to undertake the reforming it; you had better convince your self of the entire resemblance of the Earth and the Moon: Imagine then these two great Bowls held up in the Heavens, you know that the Sun always enlightens the one half of a Body that is round, and the other half is in the Shadow; there is then one half of the Earth, and one half of the Moon which is enlightned by the Sun; that is, one half which is Day, and the other half which is Night. Observe also, that as a Ball has less force after it has been struck against a Wall, and rebounds to the other side, so is Light weakned when it is reflected. The Pale Light which comes to us from the Moon, is the very Light of the Sun, but it cannot come to us from the Moon, but by Reflection; it has lost much of the force and lustre it had when it came directly from the Sun upon the Moon; and that bright Light which shines directly upon us from the Sun, and which the Earth reflects



reflects upon the Moon, is as pale and weak when it arrives there ; so that the Light which appears to us in the Moon, and enlightens our Nights, is the Part of the Moon which has Day ; and that part of the Earth which has Day, when it is opposite to the part of the Moon which has Night, gives Light to it : All depends upon, how the Moon and the Earth behold one another. At the beginning of the Month we don't see the Moon, because she is between the Sun and us ; that half of her which has Day, is then turn'd towards the Sun ; and that half which has Night, turn'd towards us ; we can't see it then, because it has no Light upon it ; but that half of the Moon which has Night, being turn'd to the half of the Earth which has Day, sees us without being perceiv'd, and we then appear to them, just as the full Moon does to us ; so that, as I may say, the Inhabitants of the Moon have then a full Earth ; but the Moon being advanc'd upon her Circle of a Month, comes

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comes from under the Sun, and begins to turn towards us a little Corner of the half which is Light, there's the Crescent; then those Parts of the Moon which have Night don't see all the half of the Earth which has Day, and we are then in the Wane to them.

I understand you perfectly, *says the Countess*, without Hesitation, I can comprehend the rest at Pleasure, and I have nothing to do but think a Moment, and bring the Moon upon her Circle of a Month. I see in general that, the Inhabitants of the Moon have a Month quite contrary to us; when we have a full Moon, their half of the Moon which is Light, is turn'd to our half of the Earth which is Dark; they don't see us at all, and they have then a New Earth, this is plain. I would not stand the Reproach of requiring a long Explication on so easie a Point: But, now tell me, how come the Eclipses? You may easily guess that, *says I*, when it is new Moon, that she is between the Sun and us, and all her Dark Half  
is

is turn'd towards us who have Light, that obscure Shadow is cast upon us: If the Moon be directly under the Sun, that Shadow hides him from us, and at the same Time obscures a part of that half of the Earth which is Light, which was seen by that half of the Moon which was Dark, here then is an Eclipse of the Sun to us during our Day, and an Eclipse of the Earth to the Moon during her Night. When it is full Moon, the Earth is between her and the Sun, and all the Dark half of the Earth is turn'd towards all the Light half of the Moon; the Shadow then of the Earth casts it self towards the Moon, and if it falls on the Moon, it obscures that Light half which we see, which then has Day, and hinders the Sun from shining on it: Here then is an Eclipse of the Moon to us during our Night, and an Eclipse of the Sun to the Moon during her Day: But the Reason that we have not Eclipses every Time that the Moon is between the Sun and the Earth, or the Earth between

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tween the Sun and the Moon, is because these three Bodies are not exactly plac'd in a right Line, and by Consequence that which should make the Eclipse, casts its Shadow a little beside that which should be obscur'd.

I am surpriz'd, *says the Countess*, that there should be so little Mistry in Eclipses, and that the whole World should not know the Cause of 'em. Nor ever will, *says I*, as some People go about it. In the *East Indies*, when the Sun and the Moon are in Eclipse, they believe a certain Devil, who has black Claws, is seizing on those Planets with his Talons; and during that Time, the Rivers are cover'd with the Heads of *Indians*, who are up to the Neck in Water, because they esteem it a very devout Posture, to implore the Sun and the Moon to defend them against the Devil. In *America* they are perswaded that the Sun and the Moon, when Eclips'd, are angry; And what is it they will not do to be reconcil'd with them? The *Greeks*, who were so refin'd also, believ'd

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believ'd the Moon was then enchanted, and that the Magicians forc'd her to descend from Heaven, and shed a malignant Juice on the Plants: Nay, what a pannick fear were we in not above 40 Years ago, at an Eclipse of the Sun? How many People hid themselves in Cellars, and all the Philosophers who treated of its Cause, could not perswade them to come out till the Eclipse was over?

In good Faith, *says she*, 'tis scandalous for Men to be such Cowards; there ought to be a general Law of Mankind to prohibit the discoursing of Eclipses, that we might not call to mind the Follies that have been said, and done, upon that Subject. Your Law then, *says I*, must abolish even the Memory of all Things, and forbid us to speak at all, for I know nothing in the World which is not a Monument of the Folly of Man.

But what d'ye think, *says she*, of the Inhabitants of the Moon, are they as fearful of an Eclipse as we are? It would be a very good Jest to see the *Indians* there up to the Neck in Water; that  
the

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the *Americans* should believe the Earth angry with them; the *Greeks* fancy we were bewitch'd, and would destroy their Plants; in short, that we should cause the same Consternation among them, as they among us. And why not, *says I*, I don't at all doubt it; for why should the People in the Moon have more Wit than we? What right have they to fright us and not we them? For my part, *continu'd I laughing*, I believe that since a prodigious Company of Men have been, and still are, such Fools to adore the Moon, there certainly are People in the Moon that worship the Earth, and that we are upon our Knees the one to the other. But sure, *says she*, we don't pretend to send any Influences to the Moon, and to give a Crisis to her Sick; if the People have any Wit in those Parts, they'll soon destroy the Honour we flatter our selves with, and I fear, we shall have the Disadvantage.

Madam, *says I*, don't fear that, d'ye think we are the only Fools of the Universe? Is it not consistent with Ignorance

rance to spread it self every where?  
'Tis true, we can only guess at the Folly of the People in the Moon, but I no more doubt it, than I do the most Authentick News that comes from thence. What authentick News comes from thence, *says she*? That which the Learned bring us, *reply'd I*, who travel thither every Day with their Tubes and Telescopes; they'll tell you of their Discoveries, of Lands, Seas, Lakes, high Mountains, and deep Abysses.

Indeed, *says she*, I fancy they may discover Mountains and Abysses, because of the remarkable Inequality; but how do they distinguish Lands and Seas? Very easily, *says I*, for the Waters letting part of the Light pass thro' them, send back but a very little, so that they appear afar off like so many dark Spots; whereas the Lands being solid, reflect the whole Light, and appear to be more bright and shining: The famous Monsieur *Cassini*, a Man of the largest Acquaintance in the World with the Firmament, discover'd in the  
*Moon*

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*M* on something which divided, then reunited, and sunk in a sort of Wells: We may with very much probability suppose this was a River. Nay, they pretend to be so well acquainted with the several Places, that they have given them all Names; one they call *Copernicus*, another *Archimedes*, and a third *Galileus*; there is the *Cassian Sea*, the *Black Lake*, the *Porphirite Mountains*; in short, they have publish'd such exact Descriptions of the Moon, that a very Almanack-maker will be no more to seek there, than I am in *Paris*.

I must own then, *says the Countess*, they are very exact; but what do they say to the inside of the Country? I would very fain know that. 'Tis impossible, *reply'd I*, the most learned Astronomers of our Age cannot inform you. You must ask that of *Altofo*, who was carried into the Moon by *St. John*. I am going to tell you one of the agreeable Follies of *Ariosto*, which I'm confident you'll be well pleas'd to hear: I must confess he had better have let alone *St. John*,



whose Name is worthy of Respect ; but 'tis a Poetical License, and must be allow'd. The Poem, which is call'd *Orlando Furioso*, is dedicated to a Cardinal, and a great Pope has honour'd it with his Approbation, which is prefix'd to several of the Editions ; this is the Argument, *Rowland Nephew to Charlemagne, falls mad, because the fair Angelica prefers Medore before him. Astolfo a Knight Errant, finding himself one Day in the Terrestrial Paradise, which was upon the Top of a very high Mountain, where he was carried by his flying Horse, meets St. John there, who tells him, if he would have Rowland cured, he must make a Voyage with him into the Moon. Astolfo, who had a great Mind to see New Countries, did not stand much upon intreaty, there immediately came a fiery Chariot which carry'd the Apostle and the Knight up into the Air ; Astolfo being no great Philosopher, was surpriz'd to find the Moon so much bigger than it appear'd to him when he was upon the Earth ; to*  
see

Plurality of WORLDS. 55

*see Rivers, Seas, Mountains, Cities, Forests, nay, what would have surpriz'd me too, Nymphs hunting in those Forests; but that which appear'd most remarkable, was a Valley where you might find any Thing that was lost in our World, of what nature soever; Crowns, Riches, Fame, and an infinity of Hopes; the time we spend in Play, and in searching for the Philosopher's Stone, the Alms we give after our Death, the Verses we present to great Men and Princes, and the Sighs of Lovers. I don't know, says the Countess, what became of the Sighs of Lovers in Ariosto's Time, but I fancy there are very few of 'em ascend to the Moon in our Days. Ah, Madam, reply'd I, how many does Your Ladyship send thither every Day? Those that are address'd to you will make a considerable Heap; and I assure you the Moon keeps all safe that is lost here below: Yet I must tell you, Ariosto does but whisper it; tho' every Thing is there, even the Donation of Constantine; (i. e.) the Popes have pretended*

to be Masters of *Rome* and *Italy*, by Virtue of a Donation which the Emperor *Constantine* made *Silvester*; and the Truth on't is, no Body knows what's become of it: But what do you think is not to be found in the Moon? Folly: All that ever was upon the Earth is kept there still, but in lieu of it, 'tis not to be imagin'd how many Wits (if I may so call 'em) that are lost here, are got up into the Moon, they are so many Vials full of a very subtile Liquor, which evaporates immediately, if it be not well stopp'd; and upon every one of these Vials the Names are written to whom the Wits belong: I think *Aristo* has heap'd 'em upon one another a little confusedly, but for Order's sake we will fancy 'em plac'd upon Shelves in a long Gallery; *Astolfo* wonder'd to see several Vials full, inscrib'd with the Names of Persons whom he thought considerable for their Wisdom. To confess the Truth, I begin to fear since I have entertain'd you with these Philosophical and Poetical Visions,  
mine

Plurality of WORLDS. 57

mine there, is not very empty; however, 'tis some Consolation to me, that while you are so attentive, you have a little Glass full, as well as your humble Servant: The good Knight found his own Wits among the rest, and with the Apostle's leave snuff'd it all up his Nose, like so much *Hungary* Water; but *Ariosto* said he did not carry it far, it return'd again to the Moon a little after.

Well, he did not forget *Rowland's* Vial, which was the Occasion of his Voyage; but he was cursedly plagu'd to carry it, for *Hero's* Wits are naturally very heavy, and there did not want one Drop of it: To conclude, *Ariosto*, according to his laudable Custom of saying whatever he pleases, addresses himself to his Mistress in very beautiful Verses.

\* *Fair Mistress, who for me to Heav'n shall fly,  
To bring again from thence my wandring Wit?  
Which I still lose, since from that piercing Eye  
The Dart came forth that first my Heart did hit:*

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Nor

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\* *St. John Harrington's Translation of Ariosto.*

Nor of my Loss at all complain would I,  
 Might I but keep that which remaineth yet;  
 But if it still decrease, within short Space,  
 I doubt I shall be in Rowlando's Case;

Yet, well I wot where to recover mine,  
 Tho' not in Paradise, nor Cynthia's Sphere,  
 Yet doubtless in a Place no less Divine,  
 In that sweet Face of yours, in that fair Hair,  
 That ruby Lip, in those two Star-like Eyn,  
 There is my Wit, I know it wanders there,  
 And with my Lips, if you would give me leave,  
 I there would search, I thence would it receive.

Is not this very pleasant? To reason like *Ariosto*, the safest Way of losing our Wits is to be in Love; for you see they don't go far from us, we may recover 'em again at our Lips; but when we lose 'em by other Means, as for Example, by Philosophizing, they are gone with a Jerk into the Moon, and there is no coming at 'em again when we would. However, says the Countess, our Vials have an honourable Station among the Philosophers, when 'tis Forty to One, but Love fixes our Wits on an Object we cannot but be ashamed of: But to  
 take

take away mine entirely, pray tell me very seriously, if you believe there are any Men in the Moon, for methinks hitherto you have not been very positive: For my Part, *says I*, I don't believe there are Men in the Moon, for do but observe how much the Face of Nature is chang'd between this and *China*; other Visages, Shapes, Manners; nay, almost other Principles of Reason; and therefore, between us and the Moon the alteration must be much more considerable. In the Lands that have been lately discover'd, we can scarce call the Inhabitants Men, they are rather Animals in Human Shape, and that too sometimes very imperfect, almost without Human Reason; he therefore that will travel to the Moon, must not expect to find Men there.

What sort of People are they then, *says the Countess*, with an Air of Impatience? Troth, Madam, *reply'd I*, I don't know; for put the Case that we our selves inhabited the Moon,  
and

and were not Men, but rational Creatures ; could we imagine, d'ye think, such fantastical People upon the Earth, as Mankind is? Is it possible we should have an Idea of so strange a Composition, a Creature of such foolish Passions, and such wise Reflections? Granted but such a Span of Life, and yet pursuing Views of such Extent? So Learned in Trifles, and so stupidly Ignorant in Matters of the greatest Importance? So much Concern for Liberty, and yet such great Inclinations to Servitude? So desirous of Happiness, and yet so very incapable of being so? The People in the Moon must be wise indeed to suppose all this of us. But don't we see our selves continually, and can't so much as guess how we were made? So that we are forc'd to say the Gods when they created us were drunk with *Nectar* ; and when they were sober again, could not chuse but laugh at their own Handy-work. Well, well, *says the Countess*, we are safe enough then, they in the Moon know nothing of us ; but  
I

Plurality of WORLDS. 61

I could wish we were a little better acquainted with them, for it troubles me that we should see the Moon above us, and yet not know what is done there. Why, *says I*, Are you not as much concern'd for that part of the Earth which is not yet discover'd? What Creatures inhabit it, and what they do there? For we and they are carry'd in the same Vessel: They possess the Prow, and we the Poop, and yet there is no manner of Communication between us; they don't know at one end of the Ship who lives, or what is done at the other end; and you wou'd know what passes in the Moon, which is another great Vessel, sailing in the Heavens at a vast distance from us.

Oh, *says she*, for the Earth I reckon it all as good as discover'd, and can guess at the People, tho' I never heard a Word of 'em; for 'tis certain they all very much resemble us, and we may know 'em better when we have a mind to't; they'll stay where they are, and 'tis no more but going to see 'em;  
but



but we can't get into the Moon if we would, so that I despair of knowing what they do there. You'll laugh at me, *says I*, if I should answer you seriously, perhaps I may deserve it, and yet, I fancy, I can say a great deal to justify a ridiculous Thought that is just now come into my Head ; nay, to use the Fools best Argument, I'll lay a Wager I make you own (in spite of Reason) that one of these Days there may be a Communication between the Earth and the Moon, and who knows what great Advantages we may reap by it? Do but consider *America* before it was discover'd by *Columbus*, how profoundly Ignorant were those People, they knew nothing at all of Arts and Sciences, they went naked, had no other Arms but Bows and Arrows, and did not apprehend they might be carried by Animals ; they look'd upon the Sea as a wide Space, not for the use of Men, that it was joyn'd to the Heavens, and beyond it was nothing : 'Tis true, after having spent whole Years in following

## Plurality of WORLDS. 63

lowing the Trunks of great Trees with sharp Stones, they put themselves to Sea in these Trunks, and floated from Land to Land, as the Wind and Waves drove 'em ; but how often was their Trough overfet, and they forc'd to recover it again by swimming ? So that ( except when they were on Land ) it might be said they were continually swimming : And yet had any one but told 'em of another kind of Navigation incomparably more perfect and useful than their own, that wou'd easily convey over that infinite Space of Water, that they might stop in the middle of the Waves, and in some Sense command the Winds, and make their Vessel go fast, or slow, as they pleas'd ; in short, that this impassable Ocean should be no Obstacle to their conversing with another different People ; d'ye think they'd have believ'd you ? And yet at last that Day is come ; the unheard of, and most surprizing Sight appears ; vast great Bodies, with white Wings, are seen to fly upon the Sea, to vomit Fire  
from

from all Parts, and to cast on their Shores an unknown People, all scal'd with Iron, who dispose and govern Monsters as they please ; carry Thunder in their Hands, and overthrow and destroy who ever resists 'em: From whence came they ? Who brought 'em over the Sea ? Who gave to 'em the Disposal of the Fire of Heaven ? Are they Gods ? Are they the Offspring of the Sun, for certainly they are not Men. Do but consider, Madam, the surprize of the *Americans*, there can be nothing greater ; and after this, will any one say there shall never be a Communication between the Moon and the Earth. Did the *Americans* believe there would ever be any between them and *Europe*, till it came to pass ? 'Tis true, you must pass this great Space of Air and Heaven which is between the Earth and the Moon ; but did not those vast Seas seem at first as impassable to the *Americans* ? You rave, I think, *says she* ; Who denies it, Madam ? *said I*. Nay, but I'll prove it, *replies*

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*plies she* ; I don't care for your bare owning it : Did you not own the *Americans* were so ignorant, that they had not the least conception of crossing the Sea ; but we, who know a great deal more than they, can imagine and fancy the going through the Air, tho' we are assur'd it is not to be done. There is somewhat more than Fancy, *reply'd I*, when it has been already practis'd, for several have found the secret of fastening Wings, which bear them up in the Air, to move them as they please, and to fly over Rivers, and from Steeple to Steeple ; I can't say indeed they have yet made an Eagle's flight, or that it does not cost now and then a Leg or an Arm to one of these New Birds ; but this may serve to represent the first Planks that were launch'd on the Water, and which were the beginning of Navigation ; there were no Vessels then thought of to sail round the World, and yet you see what great Ships are grown by little and little from those rude Planks.  
The

The Art of Flying is but newly invented, 'twill improve by degrees, and in time grow perfect ; then we may fly as far as the Moon. We don't yet pretend to have discover'd all Things, or that what we have discover'd can receive no addition ; and therefore, pray let us agree, there are yet many Things to be done in the Ages to come. Were you to live a thousand Years, *says the Countess*, I can never believe you'll fly, but you must endanger your Neck. I will not, *reply'd I*, be so unmannerly as to contradict a fair Lady ; but tho' we can't learn the Art here, I hope you will allow they may fly better in the Moon ; 'tis no great matter whether we go to them, or they come to us, we shall then be like the *Americans*, who knew nothing of Navigation, and yet there were very good Ships at t'other end of the World. Were it so, *says she*, in a sort of a Passion, the Inhabitants of the Moon would have been here before now. All in good time, *says I*, the *Europeans* were not in *America* till

## Plurality of WORLDS. 67

till about some Six Thousand Years ; they were so long in improving Navigation to the Point of crossing the Ocean. The People in the Moon have already made some short Voyages in the Air ; they are exercising continually, and by degrees will be more expert, then we shall see 'em, and God knows how we shall be surpriz'd. It is unferable, *says she*, you should banter me at this rate, and justifie your ridiculous Fancy by such false Reasoning. I'm going to demonstrate, *says I*, you Re- proach me very unjustly: Consider, Madam, that the World is unfolded by degrees ; for the Ancients were very positive, that the *Torrid* and *Frigid* Zones were not habitable, by reason of their excessive Heat and Cold ; and in the time of the *Romans*, the general Map of the World was but very little extended beyond that of their *Empire* ; which, tho' in one respect, express'd much Grandeur, in another sense, was a sign of as great Ignorance ; however, there were Men found both in very hot  
and

and in very cold Countries, so that you see the World is already increas'd; after that, it was thought that the Ocean cover'd the whole Earth, except what was then discover'd: There was no talk then of the *Antipodes*, not so much as a thought of 'em, for who could fancy their Heels at top, and their Heads at bottom? And yet, after all their fine Reasoning, the *Antipodes* were discover'd; here's now another half of the World starts up, and a new Reformation of the Map; methinks this, Madam, should restrain us, and teach us not to be so positive in our Opinions, the World will unfold itself more to us hereafter; we shall then know the People in the Moon, as well as we do now the *Antipodes*; but all Things must be done in Order, the whole Earth must be discover'd; and till we are perfectly acquainted with our own Habitation, we shall never know that of our Neighbours. Without fooling, *says the Countess*, looking earnestly upon me, you are so very profound in this Point, that I begin

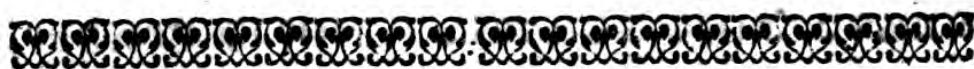
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begin to think you are in earnest, and believe what you say. Not so neither, *says I*, but I would shew you how easie it is to maintain a Chimerical Notion, that may perplex a Man of Understanding, but never convince him; there is no Perswasive like Truth, it has no need to exert all its Proofs, but enters naturally into our Understanding; and when once we have learn'd it, we do nothing but think of it. I thank you then, *says she*, for imposing on me no longer; for I confess your false Reasoning disturb'd me, but now I shall sleep very quietly, if you think fit to go Home.



The





## The Third Evening's CONVERSATION.

*Some Particulars concerning the World  
in the Moon, and Proofs of the other  
Planets being likewise Inhabited.*

THE Countess was so intent  
 T upon her Notions, that she  
 would fain have engag'd me  
 next Day, to go on where I  
 left off; but I told her, since the Moon  
 and Stars were become the Subject of  
 our Discourse, we should trust our Chy-  
 mera's with no body else: At Night  
 we went again into the Park, which  
 was now dedicated to our learned Con-  
 versation.

Well, Madam, *says I*, I have great  
 News for you; that which I told you  
 last Night, of the Moon's being inhabi-  
 ted

Plurality of WORLDS. 71

ted, may not be so now: There is a new Fancy got into my Head, which puts those People in great Danger. I can't suffer that, *says she*; Yesterday you were preparing me to receive a Visit from 'em, and now there are no such Folks in Nature: You must not trifle with me thus; once you would have me believe the Moon was inhabited; I surmounted the Difficulty I had, and will now believe it. You are a little too nimble, *reply'd I*, did'nt I advise you never to be entirely convinc'd in Things of this nature, but to reserve half your Understanding free and disengag'd, that you might admit of a contrary Opinion, if there should be any occasion. I care not for your Sentences, *says she*, let us come to Matter of Fact. Are we not to consider the Moon as *St. Dennis*? No, *says I*, the Moon does not so much resemble the Earth, as *St. Dennis* does *Paris*: The Sun draws Vapours from the Earth, and Exhalations from the Water, which mounting to a certain height in the Air,  
do

do there assemble and form the Clouds ; these uncertain Clouds are driven irregularly round the Globe, sometimes shadowing one Country, and sometimes another ; he then who beholds the Earth from afar off, will see frequent Alterations upon its Surface, because a great Country overcast with Clouds, will appear dark or light, as the Clouds stay, or pass over it ; he'll see the Spots on the Earth often change their Place, and appear or disappear as the Clouds remove ; but we see none of these changes wrought upon the Moon, which would certainly be the same, were there but Clouds about her ; but on the contrary, all her Spots are fix'd and certain, and her light parts continue where they were at first, which indeed is a great Misfortune ; for by this Reason, the Sun draws no Exhalations or Vapours above the Moon ; so that it appears she is a Body infinitely more hard, and solid than the Earth ; whose subtile Parts are easily separated from the rest, and mount upwards as  
soon

Plurality of WORLDS. 73

soon as Heat puts them in Motion : But it must be a heap of Rock and Marble, where there is no Evaporation ; besides, Exhalations are so natural and necessary where there is Water, that there can be no Water at all, where there is no Exhalation ; and what sort of Inhabitants must those be, whose Country affords no Water, is all Rock, and produces nothing? Very fine, *says she*, you have forgot since you assur'd me, we might from hence distinguish Seas in the Moon. Pray, what is become of your *Caspian* Sea, and your *Black Lake*? All Conjecture, Madam, *reply'd I*, tho' for your Ladyship's Sake, I am very sorry for it ; for those dark Places we took to be Seas, may perhaps be nothing but large Cavities ; 'tis hard to guess right at so great a distance. But will this suffice then, *says she*, to extirpate the People in the Moon? Not altogether, *reply'd I*, we will neither determine for, nor against them. I must own my Weakness, (if it be one) *says she*, I can't be so perfect-

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ly undetermin'd as you would have me to be, but must believe one way or other; therefore pray fix me quickly in my Opinion, as to the Inhabitants of the Moon; preserve or annihilate them, as you please; and yet, methinks I have a strange inclination for 'em, and would not have 'em, destroy'd, if it were possible to save 'em. You know, *says I*, Madam, I can deny you nothing; the Moon shall be no longer a Desert, but to do you service, we will re-people her. Since to all appearance the Spots in the Moon do not change, I can't conceive there are any Clouds about her, that sometimes obscure one part, and sometimes another; yet this does not hinder, but that the Moon sends forth Exhalations, and Vapours. Our Clouds which we see in the Air, are nothing but Exhalations and Vapours. which at their coming out of the Earth, were separated into such minute Particles, that they could not be discern'd; but as they ascend higher, they are condens'd by the Cold, and by the re-  
union

## Plurality of WORLDS. 75

union of their Parts, are render'd visible; after which they become great Clouds, which fluctuate in the Air, their improper Region, till they return back again in Rain; however these Exhalations and Vapours, sometimes keep themselves so dispers'd, that they are imperceptible; or if they do assemble, it is in forming such subtile Dews that they cannot be discern'd to fall from any Cloud. Now, for that it is incredible that the Moon is such a Mass, that all its parts are of an equal Solidity, all at rest one with another, and all incapable of any alterations from the efficacy of the Sun: I am sure we are yet unacquainted with such a Body: Marble it self is of another Nature, and even that which is most Solid, is subject to change and alteration; either from the secret and invisible Motion it has within it self, or from that which it receives from without: It may so happen that the Vapours which issue from the the Moon, may not assemble round her in Clouds, and may not fall back again

in Rain, but only in Dews. It is sufficient for this, that the Air with which the Moon is environ'd, (for it is certain that the Moon is encompass'd with Air as well as the Earth) be a little different from our Air, and the Vapours of the Moon a little different from those of the Earth, which is very probable. Hereupon the Matter being otherwise dispos'd in the Moon than on the Earth, the Effects must be different; tho' it is of no great Consequence whether they are or no; for from the Moment we have found an inward Motion in the Parts of the Moon, or one produc'd by foreign Causes, here is enough for the new Birth of its Inhabitants, and a sufficient and necessary Fund for their Subsistence. This will furnish us with Corn, Fruit, Water, and what we please else; I mean according to the Custom or Manner of the Moon, which I do not pretend to know; and all proportion'd to the Wants and Uses of the Inhabitants, with whom I pretend to be as little acquainted.

That

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That is to say, *reply'd the Countess*, you know all is very well, without knowing how it is so, which is a great deal of Ignorance upon a very little Knowledge; however, I comfort myself, that you have given the Moon her Inhabitants again, and have wrap'd her in an Air of her own, without which a Planet would seem to me but very naked.

'Tis these two different Airs, *says I*, that hinder the Communication of the two Planets; if it was only flying, as I told you Yesterday, who knows but we might improve it to Perfection, tho' I confess there is but little hopes of it; the great distance between the Moon and the Earth is a Difficulty not easily to be surmounted; yet were the distance but inconsiderable, and the two Planets almost contiguous, it wou'd be still impossible to pass from the Air of the one, into the Air of the other: The Water is the Air of Fishes, they never pass into the Air of the Birds, nor the Birds into the Air of the Fish; and yet



'tis not the distance that hinders them, but both are imprison'd by the Air they breath in; we find our Air consists of thicker and grosser Vapours than the Air of the Moon. So that one of her Inhabitants arriving at the Confines of our World, as soon as he enters our Air, will inevitably drown himself, and we shall see him fall dead on the Earth.

I should rejoice at a Wreck, *says the Countess*, of a good Number of these *Lunar* People, how pleasant wou'd it be to see 'em lie scatter'd on the Ground, where we might consider at our ease, their extraordinary Figures? But what, *says I*, if they cou'd swim on the outward Surface of our Air, and be as curious to see us, as you are to see them; should they Angle or cast a Net for us, as for so many Fish, would that please you? Why not? *Says the Countess smiling*; for my part I would go into their Nets of my own accord, were it but for the Pleasure to see such strange Fishermen.

Consi.

## Plurality of WORLDS. 79

Consider, *says I*, you wou'd be very Sick, when you were drawn to the top of our Air, for it is not respirable in all its extent, as may be seen on the Tops of some very high Mountains; and I admire that they who have the Folly to believe that our *Fairies*, whom they allow to be Corporeal, and to inhabit the most pure and refin'd Air; don't tell us that the Reason why they give us such short and seldom Visits, is that there are very few among them that can dive; and those that can, if it be possible to get through the thick Air where we are, cannot stay half so long in it, as your Diving Fowls can in the Water. Here then are natural Barricades, which defend the Passage out of our World, as well as the Entry into that of the Moon; so that since we can only guess at that World, let us fancy all we can of it. For Example, I will suppose that we may see there the Firmament, the Sun, and the Stars, of another Colour than what they are here; all these appear to us through a kind of

Natural Spectacles, which change and alter the Objects. These Spectacles are our Air, mix'd as it is with Vapours and Exhalations, and which does not extend itself very high. Some of our Modern Philosophers pretend, of itself it is blue, as well as the Water of the Sea, and that this Colour neither appears in the one nor in the other, but at a great depth; the Firmament, say they, where the fix'd Stars are fastned, has no peculiar Light of its own, and by consequence must appear black, but we see it through the Air, which is blue, and therefore to us it appears blue; which if so, the Beams of the Sun and Stars cannot pass through the Air without being ting'd a little with its Colour, and losing as much of their own; yet were the Air of no Colour, it is very certain, that through a great Mist the Light of a *Flambeau* at some distance appears reddish, though it be not its true natural Colour. Our Air is nothing but a great Mist, which changes the true Colour of the Sky, of the Sun, and of the Stars;  
it

## Plurality of WORLDS. 81

it belongs only to the Celestial Matter to bring us the Light and Colours as they really are in all their Purity; so that since the Air of the Moon is of another Nature than our Air, or is stain'd of another Colour, or at least is another kind of Mist, which causes other Alterations to the Colours of the Celestial Bodies; in short, as to the People of the Moon, their Spectacles, through which they see every Thing, are chang'd.

If it be so, *says the Countess*, I prefer my abode before that of the Moon; for I can't believe the Celestial Colours are so well suited as they are here; for instance, let us put green Stars on a red Sky, they can't be so agreeable as Stars of Gold on an Azure Firmament. 'To hear you, *says I*, one wou'd think you was chusing a Petticoat, or a suit of Knots; but believe me, Nature does not want Fancy; leave it to her to chuse Colours for the Moon, and I'll engage they shall be well sort'd; she will not fail to vary the Prospect of the

Universe, at every different Point of Sight, and the Alteration shall always be very agreeable

I know very well, *says the Countess*, her Skill in this Point; she is not at the charge of changing the Objects, but only the Spectacles, and has the Credit of this great Variety, without being at any Expence; with a blue Air, she gives us a blue Firmament; and perhaps with a red Air, she gives to the Inhabitants of the Moon a red Firmament, and yet still it is but the same Firmament; nay, I am of Opinion, she has plac'd a sort of Spectacles in our Imagination, through which we see all Things, and which to every particular Man change the Objects. *Alexander* look'd on the Earth as a fit Place to establish a great Empire, it seem'd to *Celadon* a proper Residence for *Astræa*, and it appear'd to a Philosopher, a great Planet in the Heavens, cover'd with Fools: I don't believe the Sights vary more between the Earth and the Moon, than they do between one Man's Fancy and anothers. This

## Plurality of WORLDS. 83

This change in our Imaginations, *says I*, is very surprizing; for they are still the same Objects, tho' they appear different; when in the Moon, we may see other Objects we do not see here, or at least, not see all there, we do see here; perhaps in that Country they know nothing of the Dawn and the Twilight, before the Sun rises, and after the Sun sets; the Air which encompasses, and is elevated above us, receives the Rays, so that they can't strike on the Earth; and being gross, stops some of them, and sends 'em to us, tho' indeed they were never naturally design'd us; so that the Day-break, and the Twilight, are a favour which Nature bestows on us; they are a Light which regularly we should not have, and which she gives us over and above our due; but in the Moon, where apparently the Air is more pure, and therefore not so proper to send down the Beams it receives from the Sun before his rising, and after his setting; they have not that Light of Grace (as I may call it) which growing greater

er

er by degrees, does more agreeably prepare 'em for the arrival of the Sun, and which growing weaker, and diminishing by degrees, does insensibly prepare 'em for the Sun's departure: But they are in a profound Darkness, where a Curtain (as it were) is drawn all on a sudden, their Eyes are immediately dazled with the whole Light of the Sun, in all its Glory and Brightness; so likewise, they are on a sudden surpriz'd with utter Darkness; the Night and the Day have no medium between them, but they fall in a Moment from one extreme into the other. The Rainbow likewise is not known to them in the Moon; for if the Dawn is an effect of the grossness of the Air and Vapours, the Rainbow is form'd in the Clouds, from whence the Rain falls; so that the most beautiful Things in the World, are produc'd by those Things which have no Beauty at all. Since then there are no Vapours thick enough, nor no Clouds of Rain about the Moon, farewell Dawn, adieu Rainbow: What must

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must Lovers do for Similies to liken their Mistresses to, in that Country, when such an inexhaustible Magazine of Comparisons is taken from them?

Nay, I shall never take the loss of their Comparisons much to Heart, *says the Countess*; and I think 'em well enough recompenc'd for the Loss of our Dawn, and Rainbow; for by the same Reason, they have neither Thunder nor Lightning, both which are form'd in the Clouds; how glorious are their Days, the Sun continually shining? How pleasant their Nights, when not the least Star is hid from them? They never hear of Storms or Tempests, which seem plain Effects of the Wrath of Heaven. D'ye think then they stand in need of our Pity? You are describing the Moon, *reply'd I*, like an enchanted Residence; but d'ye think it is so pleasant to have a scorching Sun always over our Head, where the Days are fifteen times as long as ours, and not the least Cloud to moderate its Heat? Tho' I fancy 'tis for this Reason that Nature has made  
great



great Cavities in the Moon; we can discern 'em easily with our Telescopes, for they are not Mountains, but so many Wells or Vaults in the middle of a Plain; and what do we know but the Inhabitants of the Moon, being continually broil'd by the excessive Heat of the Sun, do retire into those great Wells; perhaps they live no where else, and 'tis there they build 'em Cities; for we still see in the Ruins of *Old Rome*, that that Part of the City which was under Ground, was almost as large as that which was above Ground. We need but take that Part away, and the rest would remain like one of these Lunar Towns; the whole People reside in Wells, and from one Well to another there are subterranean Passages for the Communication of the Inhabitants. I perceive you laugh at me, but you are at your Liberty; yet to deal freely with you, you deserve it much better than I; for you believe the People in the Moon must live upon the Surface of their Planet, because we do so upon  
ours,

ours, but quite contrary, since we dwell upon the Superficies of our Planet, they should not dwell upon the Superficies of their Planet; If things differ so much in this World, what must they do in another?

'Tis no matter, *says the Countess*, I can never suffer the Inhabitants of the Moon to live in perpetual Darknes. You will be more concern'd for 'em, *reply'd I*, when I tell you that one of the ancient Philosophers did long since discover the Moon to be the Abode of the blessed Souls departed out of this Life, and that all their Happiness consisted in hearing the Harmony of the Spheres which is made by the Motion of the Celestial Bodies: But because the Philosopher pretends to know exactly all they do there, he tells you, that when the Moon is obscur'd by the Shadow of the Earth, they no longer hear the heavenly Musick, but howl like so many Souls in Purgatory; so that the Moon taking Pity on 'em, makes all the haste she can to get into the Light again.

again. Methinks then, *says she*, we should now and then see some of the blessed Souls arrive here from the Moon, for certainly they are sent to us; and between the two Planets, some think, there is sufficient Provision made for the Felicity of Souls, by their Transportation into a new World. I confess indeed, *says I*, it would be very pleasant to see different Worlds; such a Voyage, tho' but in Imagination, is very delightful; but what would it be in Effect? It would be much better certainly than to go to *Japan*, which at best, is but crawling from one end of the World to t'other, and after all to see nothing but Men. Well then, *says she*, let us travel over the Planets as fast as we can; what should hinder us? Let us place our selves at all the different Prospects, and from thence consider the Universe. But first, have we any more to see in the Moon? Yes, *reply'd I*, that World is not yet entirely exhausted: You remember well that the two Movements, which turn the  
Moon

Plurality of WORLDS. 89

Moon on herself and about us, being equal; the one always presents to our Eyes that Part which the other must consequently deprive us of, and so she always wears the same Face to us: We have then but one Moiety of her which looks on us, and as the Moon must be suppos'd not to turn on her own Center, in respect to us, that Moiety which sees us always, and that fix'd in the same Point of the Firmament. When it is Night with her, and her Nights are equal to fifteen of our Days, she at first sees but a little Corner of the Earth enlighten'd, after that a larger Spot, and so almost by hourly Gradations, spread her Light till it covers the whole Face of the Earth; whereas these same Changes do not appear to us to affect the Moon, but from one Night to another, because we lose her a long time out of our Sight. I would give any thing that I could possibly divine the awkward Reasonings of the Philosophers of their World, upon our Earth's appearing immoveable to them, when  
all

all the other Celestial Bodies rise and set over their Heads, within the Compass of fifteen Days. 'Tis plain they attribute this Immobility to her Bigness, for she is forty times bigger than the Moon, and when their Poets are in the mind to extol unactive and indolent Princes, I doubt not but they take care to compare their Inactivity to this Majestick Repose of the Earth. However, this Opinion is attended with one Difficulty; they must very sensibly perceive in the Moon, that our Earth turns upon her own Center. For Instance, imagine that our *Europe, Asia,* and *America* present themselves one after another to them in little, and in different Shapes and Figures, almost as we see them upon our Maps. Now this Sight must be a Novelty to such Travellers as pass from that Moiety of the Moon which never sees us, to that which always does. Good God! How cautious would they be of believing the Relation of the first Travellers, who should speak of it after their Return to that  
great

Plurality of WORLDS. 91

great Country, to which we are so utterly unknown? Now I fancy, *says the Countess*, that they make a sort of Pilgrimage from one Side of their Country to the other, for their Disquisitions into our World, and that there are certain Honours and Priviledges assign'd to such, as have once in their Lives had a View of our gross Planet. At least, *reply'd I*, those who have had this View have had the Priviledge of being better lighted, during their Nights, the Residence in the other Moiety of the Moon must of Necessity be much less commodious in that Respect. But, Madam, let us continue the Journey we propos'd to take from one Planet to another, for we have now taken a pretty curious View of the *Moon*.

Coming out of the Moon towards the Sun, we see *Venus*, which puts me again in mind of *St. Dennis*: *Venus* turns upon her self, and round the Sun, as well as the Moon; they likewise discover by their Telescopes, that *Venus*, like the Moon (if I may speak after the

the

the same Manner) is sometimes New, sometimes Full, and sometimes in the Wane, according to the different Scituations she is in, in Respect of the Earth.

The Moon, to all Appearance, is inhabited, why should not *Venus* be so too? You are so full of your Whys, and your Wherefores, *says she*, interrupting me, that I fancy you are sending Colonies to all the Planets. You may be certain, so I will, *reply'd I*, for I see no reason to the contrary; we find that all the Planets are of the same Nature, all obscure Bodies, which receive no Light but from the Sun, and then send it to one another; their Motions are the same, so that hitherto they are alike; and yet if we are to believe that these vast Bodies are not inhabited, I think they were made but to little Purpose; why should Nature be so partial, as to except only the Earth? But let who will say the contrary, I must believe the Planets are peopled as well as the Earth. I find, *says she*, you have been very well confirm'd in your Notions

Plurality of WORLDS. 93

tions; this pretty while: 'Twas but some Moments since, that the Moon was a Desert, and you were in no Concern at it; and at this Instant, I see you would be in a violent Passion, if any one should presume to say, that all the Planets are not as well stock'd with Inhabitants as the Earth. 'Tis true, *says I*, at the Instant you surpriz'd me with your Objections, if you had disputed with me, the Inhabitants of the Planets, I should not only have maintain'd their Existence, but perhaps likewise have discours'd to you on their Creation. We have our Times for believing of Things, and I never believ'd them more firmly than at that Juncture: And even now, and when my Senses are somewhat cooler on the Matter; I can't help thinking it would be strange that the Earth should be so well peopled, and the other Planets not inhabited at all: For do you believe we discover (as I may say) all the Inhabitants of the Earth? There are as many Kinds of invisible, as visible Creatures; we



we see from the Elephant to the very Hand-Worm, beyond which our Sight fails us, and yet counting from that minute Creature, there are an infinity of lesser Animals, which would be imperceptible, without the aid of Glasses. We see with Magnifying Glasses that the least Drops of Rain Water, Vinegar, and all other Liquids, are full of little Fishes, or Serpents, which we could never have suspected there; and there is some Reason to suspect, that the Tastes which these little Liquids gives, proceeds from the Stingings and Purgency of those little Animals on the Tongue and Palate. Now mingling certain Things with any one of these Liquors, and exposing them in the Sun, or letting them stand and corrupt, will produce a new Species of little Animals.

Several, even of the most solid Bodies, are nothing but an immense swarm of imperceptible Animals; who find for their respective Motions as much room and liberty as they require. Do but consider this little Leaf; why, it is a great World,  
inhabited

Plurality of WORLDS. 95

inhabited by little invisible Worms, of a vast extent, what Mountains, what Abyſſes are there in it? The Inſects of one ſide, know no more of their fellow Creatures on t'other Side, than you and I can tell what they are now doing at the Antipodes: Does it not ſtand more to reaſon then, that a great Planet ſhould be inhabited? In the hardeſt Stones, for Example, in Marble, there are an infinity of Worms, which fill up the *Vacuums*, and feed upon the Subſtance of the Stone; fancy then Millions of living Creatures to ſubſiſt many Years on a Grain of Sand; ſo that were the Moon but one continued Rock, I would ſooner allow her to be gnaw'd by theſe inviſible Mites, than not to be inhabited: In ſhort every Thing is animated; imagine then thoſe Animals which are yet undiscover'd, and add them and thoſe which are but lately diſcover'd, to thoſe we have always ſeen, you will find the Earth ſwarms with Inhabitants, and that Nature has ſo liberally furniſh'd it  
with

with Animals, that she is not at all concern'd for our not seeing above one half of them: Why then should Nature which is fruitful to an Excess here, be so very barren in the rest of the Planets, as to produce no living Thing in 'em? I must own, *says the Countess*, you have convinc'd my Reason, but you have confounded my Fancy, with such Variety, that I can't imagine how Nature, which hates Repetitions, should produce so many different Kinds. There is no need of Fancy, *reply'd I*, do but trust your Eyes, and you will easily perceive how Nature diversifies in these several Worlds.

All Human Faces, in general, are of the same Model, and yet the *Europeans* and the *Africans* have two particular Moulds, nay, commonly every Family have a different Form; what Secret then has Nature to shew so much Variety in the single Face? Our World in respect of the Universe, is but a little Family; all whose Faces have some Resemblance; in another Planet, there  
is

Plurality of WORLDS. 97

is another Family, whose Faces have a different Air and make, the Difference too increases with the Distance, for whoever should see an Inhabitant of the Moon, and an Inhabitant of the Earth, would soon perceive they were nearer Neighbours than one of the Earth, and one of *Saturn*: Here, for Example, we have the use of Voice, in another World they speak by Signs, and at a greater Distance they do not speak at all; here our Reason is form'd by Experience, in the next World, Experience contributes but little towards it; and in the next to that, old Men know no more than Children; here we are troubled more with what is to come, than with what is past; in the next World they are more troubled for what's past, than what's to come; and farther off, they are not concern'd with either, which by the Way, I think, is much the better: Here 'tis thought, we want a Sixth Sense, which would teach us many Things, of which we are now ignorant; this Sixth Sense is apparently

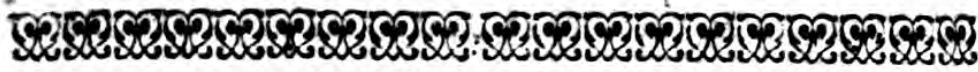
in another World, where they want one of the Five which we enjoy; nay, perhaps there is a much greater Number of Senses, but in the Partition we have made of 'em with the Inhabitants of the other Planets, there are but Five fall'n to our Share, with which we are well contented, for want of being acquainted with the rest: Our Sciences have Bounds, which the Wit of Man could never pass; there is a Point where they fail us on a sudden, the rest is reserv'd for other Worlds, where somewhat which we know is unknown to them. This Planet enjoys the Pleasures of Love, but lies desolate in several Places by the Fury of War; in another Planet they enjoy perpetual Peace, yet in the midst of that Peace, know nothing of Love, and Time lies on their Hands; in a Word, that which Nature practises here in little, in distributing her Gifts among Mankind; she does at large in other Worlds, where she makes use of that admirable Secret she has to diversifie all Things, and at the same Time makes

Plurality of WORLDS. 99

makes 'em equal, by compensating for the inequality.

But is it not time, Madam, to be serious, how will you dispose of all these Notions? Trouble not your self, *says she*, Fancy is a great Traveller; I already comprehend these several Worlds, and form to my self their different Characters and Customs; some of 'em, I assure you, are very extraordinary; I see at this Moment, a thousand different Figures, tho' I cannot well describe 'em. Oh leave 'em, *reply'd I*, to your Dreams, we shall know To-morrow whether they represent the Matter faithfully; and what they have taught you, in Relation to the Inhabitants of any of the Planets.

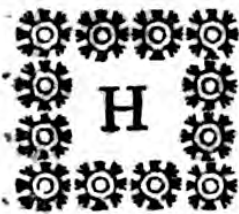
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## The Fourth Evening's

### CONVERSATION.

*Some Particulars concerning the World  
of Venus, Mercury, Mars, Jupiter,  
and Saturn.*


**H** ER Dreams were not very  
 successful; they still repre-  
 sented to her, Objects, such as  
 we are acquainted with here  
 on Earth; and I had room to reproach  
 the *Countess*, as those People do us at  
 the Sight of our regular Pictures, who  
 themselves make only wild and gro-  
 tesque Paintings. Well, say they, this  
 is only an Imitation of Men, there is  
 no manner of Fancy in it. We were  
 therefore forc'd to conclude our selves  
 ignorant, what sort of Inhabitants all  
 these Planets had, and content our selves  
 only

## Plurality of WORLDS. 101

only to guess at them, and continue the Voyage we had begun thro' the Worlds.

We were come to *Venus*, and I told her, that *Venus* certainly turn'd on it self, tho' no body could tell in what Time, and consequently were ignorant how long her Day lasted; but her Year was compos'd of eight Months, because 'tis in that Time she turns round the Sun; and seeing *Venus* is forty times less than the Earth, the Earth appears (to them in *Venus*) to be a Planet forty times bigger than *Venus* appears to us on the Earth; and as the Moon is forty times lesser than the Earth, so she seems to be just of the same Magnitude, to the Inhabitants of *Venus*, as *Venus* seems here to us.

I see then, says the Countess, that the Earth is not to *Venus*, what *Venus* is to the Earth; I mean, that the Earth is too big to be the Mother of Love, or the Shepherd's Star to *Venus*; but the Moon which appears to *Venus*, of the same bigness that *Venus* appears to us,



is assign'd to be the Mother of Love, and Shepherd's Star to *Venus*; for such Names are only proper for a little brisk airy Planet, bright, and shining as the Goddess herself. Oh, blessed Moon, how happy art thou to preside over the Amours of those Inhabitants of *Venus*, who must be such Masters of Gallantry! Oh, doubtless, *says I*, the very common People of *Venus* are all *Celandons* and *Silvanders*, and their most trivial Discourses are infinitely finer than any in *Clelia*. Their very Climate inspires Love: *Venus* is much nearer than the Earth is to the Sun, from whence she receives a more vigorous and active Influence.

I find, *says the Countess*, it is easie enough to guess at the Inhabitants of *Venus*; they resemble what I have read of the *Moors* of *Granada*, who were a little black People, scorch'd with the Sun, Witty, full of Fire, very Amorous, much inclin'd to Musick and Poetry, and ever inventing Masques and Turnaments in Honour of their Mistresses.

Pardon

## Plurality of WORLDS. 103

Pardon me, Madam, *says I*, you are little acquainted with the Planet; *Granada* in all its Glory, was a perfect *Greenland* to it; and your gallant *Moors*, in comparison with that People, were as stupid as so many *Laplanners*.

But what d'ye think then of the Inhabitants of *Mercury*? They are yet nearer to the Sun, and are so full of Fire, that they are absolutely Mad; I fancy they have no Memory at all, no more than most of the *Negroes*; that they make no Reflections, and what they do is by sudden Starts, and perfect Hap-hazard; in short, *Mercury* is the Bedlam of the Universe; the Sun appears to them much greater than it does to us, because they are much nearer to it than we; it sends them so vast and strong a Light, that the most glorious Day here, wou'd be no more with them, than a declining Twilight: I know not if they can distinguish Objects; but the Heat to which they are accustomed, is so excessive, that they

wou'd be starv'd with Cold in the Torrid Zone; their Year is but three Months, but we know not the exact length of their Day, because *Mercury* is so little, and so near the Sun; it is, (as it were) lost in his Rays, and is very hardly discover'd by the Astronomers; so that they cannot observe how it moves on its Center; but because it is so small, they fancy it compleats its Motion in a little Time; so that by Consequence, the Day there is very short, and the Sun appears to them like a vast fiery Furnace at a little Distance, whose Motion is prodigiously swift and rapid: This is so much the better for them, since 'tis evident they must long for Night; and during their Night, *Venus* and the Earth (which must appear considerably big) give Light to them: As for the other Planets which are beyond the Earth, towards the Firmament, they appear less to them in *Mercury*, than they do to us here, and they receive but little Light from them, perhaps none at all; the fix'd Stars likewise

Plurality of WORLDS. 105

wife seem less to them, and some of 'em totally disappear, which, were I there, I should esteem a very great loss. I should be very uneasie to see this large *Convex* studded with but few Stars, and those of the least Magnitude and Lustre.

What signifies the loss of a few fix'd Stars? *Says the Countess*; I pity 'em for the excessive Heat they endure; let us give 'em some relief, and send *Mercury* a few of the refreshing Showers they have sometimes four Months together, in the hottest Countries, during their greatest Extremity. Your Fancy is good, Madam, *reply'd I*, but we will relieve 'em another way: In *China* there are Countries which are extreamly hot by their Scituation; yet, in *July* and *August* are so cold, that the Rivers are Frozen; the Reason is, they are full of Salt-Peter, which being exhal'd in great abundance, by the excessive heat of the Sun, makes a perfect Winter at Mid-Summer. We will fill the little Planet with Salt-Peter, and let the Sun shine

as hot as he pleases. And yet after all, who knows but the Inhabitants of *Mercury* may have no occasion either for Rain, or Salt-Peter? If it is a certain Truth, that Nature never gives Life to any Creature, but where that Creature may live; then thro' Custom, and Ignorance of a better Life, those People may live happily.

After *Mercury*, comes the *Sun*; but there is no possibility of Peopling it, nor no room left for a Wherefore. By the Earth which is inhabited, we judge that other Bodies of the same Nature may be likewise inhabited: But the Sun is a Body not like the Earth, or any of the Planets; the Sun is the Source or Fountain of Light, which tho' it is sent from one Planet to another, and receives several Alterations by the way, yet all originally proceeds from the Sun: He draws from himself that precious Substance which he emits from all sides, and which reflects when it meets with a solid Body, and spreads from one Planet to another those long  
and

## Plurality of WORLDS. 107

and vast Trains of Light which cross, strike thro', and intermingle in a thousand different Fashions, and make (if I may so say,) the richest Tissues in the World. The Sun likewise is plac'd in the Center, from whence with most Convenience, he may equally distribute and animate by his Heat; it is then a particular Body, but what sort of Body has often puzzled better Heads than mine. It was thought formerly a Body of pure Fire, and that Opinion pass'd currant till the beginning of this Age; when they perceiv'd several Spots on its Surface. A little after they had discover'd new Planets, (of which, hereafter) these some said were the Spots; for those Planets moving round the Sun, when they turn'd their Dark half to us, must necessarily hide part of it; and had not the Learned with these pretended Planets made their Court before to most of the Princes in *Europe*, giving the Name of this Prince to one, and of that Prince to another Planet; I believe they would have quarrel'd who should be Master of these

these Spots, that they might have nam'd them as they pleas'd.

I cannot approve that Notion ; 'twas but t'other Day, *says the Countess*, you were describing the Moon, and call'd several Places by the Names of the most famous Astronomers. I was pleas'd with the Fancy ; for since the Princes have seiz'd on the Earth ; 'tis fit the Philosophers (who are as proud as the best of 'em ) should reserve the Heavens for themselves without any Competitors. Oh ! *Says I*, Trouble not your self, the Philosophers make the best Advantage of their Territories ; and if they part with the least Star, 'tis on very good Terms ; but the Spots on the Sun are fallen to nothing ; 'tis now discover'd that they are not Planets, but Clouds, Streams, or Dross, which rise upon the Sun, sometimes in a great Quantity, sometimes in less ; sometimes they are dark, sometimes clear, sometimes they continue a great while, and sometimes they disappear as long. It seems the Sun is a Liquid Matter, some think

## Plurality of WORLDS. 109

think of melted Gold, which boils over (as it were) continually, and by the force of its Motion, casts the Scum or Dross on its Surface, where it is consum'd, and others arise. Imagine then what strange Bodies these are, when some of them are as big as the Earth: What a vast quantity must there be of this melted Gold, and what must be the Extent of this great Sea of Light and Fire which they call the Sun? Others say, the Sun appears through their Telescopes, full of Mountains, which vomit Fire continually, and are joyn'd together like Millions of *Ætna's*. Yet there are those who say these burning Mountains are pure Vision, caus'd by a fault in the Spectacles; but what shall we Credit, if we must distrust our Telescopes, to which we owe the Knowledge of so many new Objects? But let the Sun be what it will, it cannot be at all proper for Habitation; and what pity 'tis, for how Pleasant wou'd it be? You might then be at the Center of the Universe, where you wou'd see all the  
Planets



Planets turn regularly about you ; but now we know nothing but extravagant Fancies, because we don't stand in the proper Place ; there is but one Place in the World where the Study or Knowledge of the Stars is easily obtain'd, and what pity 'tis there is no Body there. You forget your self sure, *says she*, were you in the Sun you wou'd see nothing, neither Planets nor fix'd Stars ; does not the Sun efface all ? So that could there be any Inhabitants there, they might justly think themselves the only People in Nature.

I own, *says I*, my Mistake ; I was thinking of the Scituation of the Sun, and not of the effect of its Light : I thank you for your Correction ; but must take the boldness to tell you, that you are in an Errour, as well as my self ; for were there Inhabitants in the Sun, they would not see at all, either they could not bear the Strength of its Light, or for want of a due distance, they could not receive it ; so that Things well consider'd, all the People there must  
be.

## Plurality of WORLDS. III

be stark blind, which is another Reason why the Sun cannot be Inhabited; but let us pursue our Voyage. We are now arriv'd at the Center, which is always the Bottom, or lowest Place of what is round; if we go on, we must ascend; we shall find *Mercury*, *Venus*, the *Earth*, the *Moon*, all the *Planets* we have already visited; the next is *Mars*, who has nothing Curious that I know of; his Day is not quite an Hour longer than ours, but his Year is twice as much as ours; he is a little less than the *Earth*, and the Sun seems not altogether so large and so bright to him, as it appears to us: But let us leave *Mars*, he is not worth our stay: But, what a pretty Thing is *Jupiter*, with his Four Moons, or Yeomen of the Guard; they are Four little Planets that turn round him, as our Moon turns round us. But why, *says she, interrupting me*, must there be Planets to turn round other Planets, that are no better than themselves? I should think it would be more regular and uniform, that all the Planets,

nets, little and great, without any distinction, should have one and the same Motion round the Sun.

Ah, Madam, *says I*, if you did but know what *Descartes's* Whirpools or Vortexes were, (whose Name is terrible, but their Idea pleasant) you wou'd not ask as you do. Must my Head, *says she, smiling*, turn round to comprehend 'em, or must I become a perfect Fool to understand the Mysteries of Philosophy? Well, let the World say what it will, go on with your Whirpools. I will, *says I*, and you shall see the Whirpools are worthy of these Transports: That then which we call a Whirpool, or Vortex, is a Mass of Matter, whose Parts are separated, or detach'd from one another, yet have all one uniform Motion; and at the same time, every one is allow'd, or has a particular Motion of its own, provided it follows the general Motion: Thus a Vortex of Wind, or Whirlwind, is an infinity of little Particles of Air, which turn round all together, and involve  
whatever

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whatever they meet with. You know the Planets are born up by the Celestial Matter, which is prodigiously subtile and active; so that this great Mass, or Ocean of Celestial Matter, which flows as far as from the Sun to the fix'd Stars, turns round, and bears the Planets along with it, making them all turn after the same manner round the Sun, who possesses the Center: But in a longer, or a shorter time, according as they are farther or nearer in distance to it; there is nothing to the very Sun, which does not turn, but he turns on himself, because he is just in the middle of this Celestial Matter; and you must know by the way, that were the Earth in his Place, it must turn on it self, as the Sun does. This is the great Vortex, of which the Sun is Lord; yet at the same time, the Planets make little particular Vortexes, in imitation of that of the Sun, each of them in turning round the Sun, does at the same time turn round it self, and makes a certain quantity of Celestial Matter turn round it likewise,  
which

which is always prepar'd to follow the Motion the Planet gives it, provided it is not diverted from its general Motion; this then is the particular Vortex of the Planet, which pushes it as far as the strength of its Motion reaches: And if by chance, a lesser Planet falls into the Vortex of a greater Planet, it is immediately born away by the greater, and is indispensably forc'd to turn round it, tho' at the same time, the great Planet, the little Planet, and the Vortex which encloses 'em, all turn round the Sun: 'Twas thus at the beginning of the World, when we made the Moon follow us, because she was within the reach of our Vortex, and therefore wholly at our disposal: *Jupiter* was stronger, or more fortunate than we, he had Four little Planets in his Neighbourhood, and he brought 'em all Four under his subjection; and no doubt, we, tho' a principal Planet, had had the same Fate, had we been within the Sphere of his Activity; he is ninety times bigger than the Earth, and would certainly

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certainly have swallow'd us into his Vortex ; we had then been no more than a Moon in his Family, when now we have one to wait on us ; so that you see the Advantage of Scituation, decides often all our good Fortune.

But pray, *says she*, who can assure us we shall continue as we do now ? If we should be such Fools as to go near *Jupiter*, or he so Ambitious as to approach us, what will become of us ? For if (as you say) the Celestial Matter is continually under this great Motion, it must needs agitate the Planets irregularly ; sometimes drive 'em together, and sometimes separate 'em. Luck is all, *says I* ; we may win as well as lose, and who knows, but we should bring *Mercury* and *Venus* under our Government ; they are little Planets, and cannot resist us ; but in this Particular, *Madam*, we need not hope or fear ; the Planets keep within their own Bounds, and are oblig'd (as formerly the Kings of *China* were) not to undertake new Conquests. Have you not seen when you  
put

put Water and Oyl together, the Oyl swims a top; and if to these two Liquors, you add a very little Liquor, the Oyl bears it up, and it will not sink to the Water: But an heavier Liquor, of a just Weight, and it will pass thro' the Oyl, which is too weak to sustain it, and sink till it comes to the Water, which is strong enough to bear it up; so that in this Liquor, compos'd of two Liquors, which do not mingle, two Bodies of an equal weight, will naturally assume two different Places; the one will never ascend, the other will never descend; if we put still other Liquors, which do not mingle, and throw other Bodies on them, it will be the same Thing: Fancy then that the Celestial Matter which fills this great Vortex, has several resting Places, one by another, whose weight are different, like that of Oyl, Water, and other Liquors; the Planets too are of a different Weight, and consequently every Planet settles in that Place which has a just Strength to sustain and keep it equilibrate; so you see

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see 'tis impossible it should ever go beyond.

I apprehend very well, *says the Countess*, that these Weights keep their Stations regularly. Would to God, our World were as well regulated, and every one among us knew their proper Place. I am now in no fear of being overrun by *Jupiter*; and since he lets us alone in our Vortex, with our Moon, I don't envy him the Four which he has. Did you envy him, *reply'd I*, you would do him wrong, for he has no more than what he has occasion for; at the distance he is from the Sun, his *Moons* receive, and send him but a very weak Light; it is true, that as he turns upon himself in Ten Hours, his Nights, by consequence, are but Five Hours long; so one would think there is no great occasion for Four Moons, but there are other Things to be consider'd. Here, under the Poles, they have Six Months Day, and Six Months Night, because the Poles are the two Extremities of the Earth, the farthest remov'd from those



those Places where the Sun is over 'em in a Perpendicular Line. The Moon seems to keep almost the same Course as the Sun, and if the Inhabitants of the Pole see the Sun during one half of his Course of a Year, and during the other half, don't see him at all; they see the Moon likewise during one half of her Course of a Month; that is, she appears to 'em Fifteen Days, but they don't see her during the other half. *Jupiter's* Year is as much as Twelve of ours, so that there must be two opposite Extremities in that Planet, where their Night and their Day are Six Years each. A Night Six Years long, is a little disconsolate, and 'tis for that Reason, I suppose, they have Four Moons; that which (in regard to *Jupiter*) is uppermost, finishes its Course about him in Seventeen Days, the Second in Seven, the Third three Days and an half, and the Fourth in two and forty Hours; and tho' they are so unfortunate as to have six Years Night, yet their Course being exactly divided into halves, they never

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never pass above one and twenty Hours, wherein they don't see at least the last Moon, which is a great Comfort in so tedious a Darknes; so that be where you will, these Four Moons are sometimes the prettiest sight imaginable; sometimes they rise all Four together, and then separate according to the inequality of their Course; sometimes they are all in their Meridian, rang'd one above another; sometimes you see 'em at equal distances on the Horizon; sometimes when Two rise, the other Two go down. Oh, how I shou'd love to see their perpetual Sport of Eclipses; for there is not a Day passes, but they Eclipse the Sun, or one another; and they are so accusom'd to these Eclipses in that Planet, that they are certainly Objects of Diversion, and not of Fear as with us.

Well, *says the Countess*, I hope you will People these Four Moons, tho' you say they are but little secondary Planets, appointed to give Light to another Planet during its Night. Don't doubt

doubt it, *reply'd I*, these Planets are not a jot the worse to be inhabited, for being forc'd to turn round another Planet of greater Consequence. I would have then, *says she*, the People of these Four Moons to be so many Colonies under *Jupiter's* Government; they should, if it were possible, receive their Laws and Customs from him; and consequently render him a kind of Homage, and not view his great Planet without Deference. Would it not be convenient too, *says I*, that they should send Deputies with Addresses to him, to assure him of their Fidelity; for he has certainly a more absolute Command over his Moon, than we have over ours; tho' his Power after all, is but imaginary, and consists chiefly in making 'em afraid; for that Moon which is nearest to him, sees that he is three Hundred and sixty times bigger than our Moon appears to us; for in truth, he is so much bigger than she; he is also much nearer to them, than our Moon is to us, which makes him appear

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pear the greater ; so that this formidable Planet hangs continually over their Heads, at a very little distance ; and if the *Gauls* were afraid heretofore, that the Heavens would fall on 'em, I think the Inhabitants of that Moon may well be apprehensive that *Jupiter* will at some time or other overwhelm 'em. I fancy, *says she*, they are possess'd with that Fear, because they are not concern'd at Eclipses : Every one has their peculiar Folly ; we are afraid of an Eclipse, and they, that *Jupiter* will fall on their Heads. It is very true, *says I*, the Inventor of the third System, I told you of t'other Night, the famous *Ticho Brahe*, (one of the greatest Astronomers that ever was,) did not apprehend the least Danger from an Eclipse, when every Body else was under the greatest Consternation ; but what Apprehensions do you think he entertain'd instead of them ? This great Man was so unaccountably superstitious, that if an Hare did but cross him, or an Old Woman bolt upon him first at his coming

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out,

out, he presently look'd upon his Journey to be Ominous, shut himself up for that Day, and would not meddle with the least Business. It would be very unreasonable, *reply'd she*, after such a Man could not redeem himself from the Fear of Eclipses, without falling into some other *Foible* as troublesome, that the Inhabitants of that Moon of *Jupiter*, whereof we were talking, should come off upon easier Terms: But we will give them no Quarter; they shall come under the general Rule, and if they are free from one Errour, shall fall into another to put 'em upon Equivalent: But as I don't trouble myself, because I can't guess what, pray clear another Difficulty to me, which has given me some Pain for several Minutes. Pray tell me, if the Earth be so little in comparison of *Jupiter*, whether his Inhabitants do discover us? Indeed, I believe not, *says I*; for if we appear to him ninety times less than he appears to us, judge you if there be any possibility: Yet this we may reasonably

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nably conjecture, that there are Astronomers in *Jupiter*, who after they have made the most curious Telescopes, and taken the clearest Night for their Observations, may have discover'd a little Planet in the Heavens, which they never saw before; if they publish their discovery, most People know not what they mean, or laugh at 'em for Fools; nay, the Philosophers themselves will not believe 'em, for fear of destroying their own Opinions, yet some few may be a little Curious; they continue their Observations, discover the little Planet again, and are now assur'd it is no Vision; then they conclude it has a Motion round the Sun, and after a thousand Observations, find that it compleats this Motion in a Year; and at last, (thanks to the Learned,) they know in *Jupiter* that our Earth is a World, every Body runs to see it at the end of the Telescope, tho' 'tis so little, 'tis hardly discover'd.

It must be Pleasant, *says she*, to see the Astronomers of both Planets, leveling their Tubes at one another, and mutually asking, what World is that? What People inhabit it? Not so fast neither, *reply'd I*; for tho' they may from *Jupiter* discover our Earth, yet they may not know us; that is, they don't in the least suspect it is inhabited; and should any One there chance to have such a Fancy, he might be sufficiently ridicul'd, if not prosecuted for it; for my part, I believe they have work enough to make Discoveries on their own Planet, not to trouble their Heads with ours; and it is so large, that if they have any such Thing as Navigation, their *Christopher Columbus* could never want Employment; why, I warrant you, they have not yet discover'd the hundredth part of their Planet. But if *Mercury* is so little, they are all (as it were) near Neighbours, and 'tis but taking a Walk, to go round that Planet. But if we don't appear to 'em in *Jupiter*, they cannot certainly

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ly discover *Venus* and *Mercury*, which are much less than the Earth, and at a greater distance; but in lieu of it, they see *Mars*, their own Four Moons, and *Saturn* with his; this I think is work enough for their Astronomers; and Nature has been so kind to conceal from 'em the rest of the Universe.

Do you think it a Favour then, *says she*? Yes certainly, *says I*, for there are sixteen Planets in this great Vortex: Nature saves us the trouble of studying the Motions of 'em all, and shows us but Seven, which I think is very obliging, tho' we know not how to value the Kindness, for we have recover'd the other Nine which were hid from us, and so render the Science of Astronomy much more Difficult than Nature design'd it.

If there are sixteen Planets, *says she*, *Saturn* must have five Moons. 'Tis very true, *says I*, and two of these five are but lately discover'd; but there is somewhat that is more remarkable, since his Year is thirty of ours, and



there are consequently in him some Countries, where their Night is fifteen Years long ; what can you imagine Nature has invented to give Light, during so dreadful a Night ? Why, she has not only given *Saturn* five Moons, but she has encompass'd him round with a great Circle or Ring ; this being plac'd beyond the reach of the Shadow, which the Body of that Planet casts, reflects the Light of the Sun continually on those Places where they cannot see the Sun at all.

I protest, *says the Countess*, this is very surprizing, and yet all is contriv'd in such great Order, that it is impossible not to think, but Nature took Time to consider the Necessities of all Animate Beings, and that the disposing of these Moons was not a work of Chance ; for they are only divided among those Planets which are farthest distant from the *Sun*, the *Earth*, *Jupiter*, *Saturn* ; indeed it was not worth while to give any to *Mercury* or *Venus*, they have too much Light already ; and they account

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count their Nights (as short as they are) a greater Blessing than their Day. But pray, why has not *Mars* a Moon too? It seems he has none, tho' he is much farther than the Earth from the Sun. It is very true, *says I*; no doubt but he has other helps, tho' we don't know 'em: You have seen the *Phosphorus*, both liquid and dry, how it receives and imbibes the Rays of the Sun, and what a great Light it will cast in a dark Place: Perhaps *Mars* has many great high Rocks, which are so many Natural *Phosphoruses*, which in the Day take in a certain provision of Light, and return it again at Night. What think you, Madam, is it not very Pleasant, when the Sun is down, to see those lighted Rocks, like so many glorious Illuminations, made without any Art, and which can do no manner of Hurt by their Heat? Besides, there is a kind of Bird in *America*, that yields such a Light, you may read by it in the darkest Night; and who knows but *Mars* may have great Flocks of these

Birds, that as soon as it is Night, disperse themselves into all Parts, and spread from their Wings another Day.

I am not at all contented, *says she*, with your Rocks, or your Birds; 'tis a pretty Fancy indeed, but 'tis a sign that there should be *Moons* in *Mars*, since Nature has given so many to *Saturn* and *Jupiter*, and if all the other Worlds that are distant from the *Sun*, have *Moons*, why should *Mars* only be excepted? Ah, *Madam*, *says I*, when you are a little more dip'd in Philosophy, you will find Exceptions in the very best Systems; there are always some Things that agree extremely well, but then there are others that do not accord at all, those you must leave as you found 'em, if ever you intend to make an End; We will do so by *Mars*, if you please, and say no more of him, but return to *Saturn*. What d'ye think of his great Ring, in the Form of a Semi-Circle, that reaches from one End of the Horizon to the other, which reflecting the Light of the Sun, performs  
the

## Plurality of WORLDS. 129

the Office of a continual Moon? And must we not inhabit this Ring too, *says she* smiling? I confess, *says I*, in the humour I am in, I could almost send Colonies every where; and yet I can't well plant any there, it seems so irregular a Habitation; but for the five little Moons, they can't chuse but be inhabited; tho' some think this Ring is a Circle of Moons, which follow close to one another, and have an equal Motion; and that the five little Moons fell out of this Circle; how many Worlds are there then in the Vortex of *Saturn*? But let it be how it will, the People in *Saturn* live very Miserably: 'Tis true, this Ring gives Light to 'em, but it must be a very poor one, when the Sun seems to 'em but a little pale Star, whose Light and Heat cannot but be very weak at so great a Distance; they say *Greenland* is a perfect *Bagnio* in comparison of that Planet, and that they would expire with Heat in our coldest Countries.

You give me, *says she*, such an Idea of *Saturn*, that makes me shake with Cold, and that of *Mercury*, puts me into a Fever. It cannot be otherwise, *reply'd I*, for the two Worlds, which are the Extremities of this great Vortex, must be opposite in all Things. They must then, *says she*, be very wise in *Saturn*, for you told me they were all Fools in *Mercury*. If they are not wise, *says I*, yet they have all the Appearances of being very Flegmatick: They are People that know not what it is to laugh, they take a Days time to answer the least Question you can ask 'em; and are so very grave, that were *Cato* living among 'em, they would think him a *Merry-Andrew*.

It is odd to consider, *says she*, that the Inhabitants of *Mercury* are all Life, and the Inhabitants of *Saturn* quite contrary; but among us some are brisk, and some are dull; it is, I suppose, because our Earth is plac'd in the Middle of the other Worlds, and so we participate of both Extreams, there is no  
fix'd

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fix'd or determin'd Character; some are made like the Inhabitants of *Mercury*, some like those of *Saturn*; we are a Mixture of the several Kinds that are found in the rest of the Planets. Why, *says I*, don't you approve of the Idea? Methinks it is pleasant to be compos'd of such a fantastical Assembly, that one would think we were collected out of different Worlds; we need not travel, when we see the other Worlds in Epitome at home.

I am sure, *says the Countess*, we have one great Convenience in the Scituation of our World; it is not so hot as *Mercury* and *Venus*, nor so cold as *Jupiter* or *Saturn*; and our Country is so justly plac'd, that we have no Excess either of Heat or Cold. I have heard of a Philosopher, who gave Thanks to Nature that he was born a Man and not a Beast, a *Greek* and not a *Barbarian*; and for my Part, I render Thanks that I am seated in the most temperate Planet of the Universe, and in one of the most temperate Regions of that Planet.

You

You have more Reason, *says I*; to give Thanks that you are Young and not Old; that you are Young and Handsom, and not Young and Ugly; that you are Young, Handsom, and a *French* Woman, and not Young, Handsom, and an *Italian*; these are other-guess Subjects for your Thanks, than the Scituation of your Vortex, or the Temperature of your Country.

Pray Sir, *says she*, let me give Thanks for all Things, to the very Vortex in which I am planted: Our Proportion of Happiness is so very small, that we should lose none, but improve continually what we have, and be grateful for every Thing, tho' never so common or inconsiderable. If nothing but exquisite Pleasure will serve us, we must wait a long time, and be sure to pay too dear for it at last. I wish, *says I*, that Philosophy was the Pleasure you propose, that when you think of Vortexes you would not forget an humble Servant of your Ladyships. I esteem it a Pleasure, *says she*, while it diverts me  
with.

with something new, but no longer. I will engage for it till To-morrow, *re-  
ply'd I*, for the fix'd Stars are beyond what you have yet seen.



## The Fifth Evening's CONVERSATION.

*That the fix'd Stars are so many Suns,  
every one of which gives Light to a  
World.*

**T**HE Countess was very im-  
patient to know what would  
become of the *fix'd Stars*; are  
they inhabited, *says she*, as  
the Planets are, or are they not inha-  
bited at all, or in short, what shall we  
do with 'em? You may soon guess, *says  
I*, the *fix'd Stars* cannot be less distant  
from the Earth than Fifty Millions of  
Leagues; nay, if you anger an Astro-  
nomer,



nomer, he will set 'em farther. The Distance from the *Sun* to the farthest *Planet*, is nothing in Comparison of the Distance from the *Sun*, or from the *Earth*, to the *fix'd Stars*, it is almost beyond Arithmetick. You see their Light is bright and shining, and did they receive it from the *Sun*, it must needs be very weak after a Passage of Fifty Millions of Leagues; then judge how much it is wasted by Reflexion, for it comes back again as far to us, so that forwards and backwards, here are an Hundred Millions of Leagues for it to pass, and 'tis impossible it should be so clear and strong as the Light of a *fix'd Star*, which cannot but proceed from it self; so that in a Word, all the *fix'd Stars* are luminous Bodies in themselves, and so many *Suns*.

I perceive, *says the Countess*, where you would carry me; you are going to tell me, that if the *fix'd Stars* are so many *Suns*, and our *Sun* the Center of a Vortex that turns round him, why may not every *fix'd Star* be the Center  
of

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of a Vortex that turns round the fix'd Star? Our Sun enlightens the Planets; why may not every fix'd Star have Planets to which they give Light? You have said it, *reply'd I*, and I will not contradict you.

But you have made the Universe so large, *says she*, that I know not where I am, or what will become of me; what is it all to be divided into Vortexes confusedly, one among another? Is every Star the Center of a Vortex, as big as ours? Is that vast Space which comprehends our Sun and Planets, but an inconsiderable Part of the Universe? And are there as many such Spaces, as there are fix'd Stars? I protest it is dreadful, the Idea confounds and overpowers me. And for my Part, *reply'd I*, it gives me Satisfaction; when the Heavens were a little blue Arch, stuck with Stars, methought the Universe was too strait and close, I was almost stifled for want of Air; but now it is enlarg'd in Heighth and Breadth, and a Thousand and a Thousand Vortexes

texes taken in; I begin to breath with more Freedom, and think the Universe to be incomparably more magnificent than it was before. Nature has spar'd no Cost, even to profuseness, and nothing can be so glorious, as to see such a prodigious Number of Vortexes, whose several Centers are possess'd by a particular Sun, which makes the very Planets turn round it. The Inhabitants of a Planet of one of these innumerable Vortexes, see on all sides these luminous Centers of the Vortex, with which they are encompass'd; but perhaps they don't see the Planets, who receiving but a faint Light from their Sun, can't send it beyond their own World.

You present me with a kind of Perspective of so vast a Length, that no Eye can reach to the End of it: I plainly see the Inhabitants of the Earth, and you have made me discover those who dwell in the Moon, and in other Planets of our Vortex; these Inhabitants indeed I conceive pretty plainly, but I don't see 'em so clearly as those of the Earth:

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Earth: After these we come to the Inhabitants of the Planets which are in the other Vortexes, but they are sunk into so great a Depth, that tho' I do all I can to see them, yet I must confess I can hardly perceive 'em; by the Expression you use in speaking of 'em, they seem to be almost annihilated; you ought then to call 'em the Inhabitants of one of those innumerable Vortexes: We our selves, for whom the same Expression serves, must confess, that we scarce know where we are, in the Midst of so many Worlds; for my own Part, I begin to see the Earth so fearfully little, that I believe from henceforth, I shall never be concern'd at all for any Thing; that we so eagerly desire to make our selves Great, that we are always designing, always troubling and harassing our selves, is certainly because we are ignorant what these Vortexes are; but now I hope my new Lights will in part justify my Laziness, and when any one reproaches me with my Indolence, I will answer, *Ah, did you*

*you but know what the fix'd Stars are!* It was not fit, *says I*, that *Alexander* should know what they were; for a certain Author who maintains that the Moon is inhabited, very gravely tells us, that *Aristotle* (from whom no Truth could be long conceal'd) must necessarily be of an Opinion, back'd with so much Reason; but yet he never durst acquaint *Alexander* with the Secret, lest he should run mad with Despair, when he knew there was another World which he could not conquer: With much more Reason than was this Mystery of Vortexes and fix'd Stars, kept secret in *Alexander's* Time, for tho' they had been known in those Days, yet it had been but an ill Way of making his Court to have said any thing of them to that ambitious Prince; for my Part, I that know 'em, am not a little troubled to find my self not one Jot the wiser for all the Knowledge I have of 'em; the most they can do, according to your Way of Reasoning, is but to cure People of their Ambition,  
and

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and their unquiet restless Humour, which are Diseases I am not at all troubled with ; I confess I am guilty of so much Weakness, as *to be in Love with what is Beautiful* ; that's my Distemper, and I am confident the Vortexes can never cure it : What if the other Worlds render ours so very little ? They cannot spoil fine Eyes, or a pretty Mouth, their Value is still the same, in spite of all the Worlds that can possibly exist.

This *Love*, reply'd the Countess, smiling, is a strange Thing ; let the World go how 'twill, 'tis never in Danger ; there is no System can do it any harm. But tell me freely, is your System true ? Pray conceal nothing from me ; I will keep your Secret very faithfully ; it seems to have for its Foundation, but a slight Probability, which is, that if a fix'd Star be in it self a Luminous Body, like the Sun, then by consequence, it must, as the Sun is, be the Center and Soul of a World ; and have its Planets turning round about it : But is there an  
absolute

absolute necessity it must be so? Hear me, Madam, *says I*, since we are in the humour of mingling Amorous Follies with our most serious Discourse, I must tell you, that in Love and the Mathematicks, People reason alike: Allow never so little to a Lover, yet presently after you must grant him more; nay, more and more; which will at last go a great way: In like manner, grant but a Mathematician one little Principle, he immediately draws a Consequence from it; to which you must necessarily assent; and from this Consequence another, till he leads you so far (whether you will or no) that you have much ado to believe him. These two sorts of People, Lovers and Mathematicians, will always take more than you give 'em. You grant, that when two things are like one another in all visible respects, it is possible they may be like one another in those Respects that are not visible, if you have not some good Reason to believe otherwise: Now this way of arguing have I made use of. The Moon, *says I*, is inhabited,

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inhabited, because she is like the Earth; and the other Planets are inhabited, because they are like the Moon; I find the fix'd Stars to be like our Sun, therefore I attribute to them what is proper to that: You are now gone too far to be able to retreat, therefore you must go forward with a good Grace. But, *says the Countess*, if you build upon this Resemblance, or Likeness, which is between our Sun and the fix'd Stars, then, to the People of another great Vortex, our Sun must appear no bigger than a small fix'd Star, and can be seen only when 'tis Night with them. Without doubt, Madam, *says I*, it must be so: Our Sun is much nearer to us, than the Suns of other Vortexes, and therefore its Light makes a much greater Impression on our Eyes than theirs do: We see nothing but the Light of our own Sun; and when we see that, it darkens and hinders us from seeing any other Light; but in another great Vortex, there is another Sun, which rules and governs; and, in its turn, extinguishes  
the



the Light of our Sun, which is never seen there but in the Night, with the rest of the other Suns, that is, the fix'd Stars; with them our Sun is fastned to the great arched Roof of Heaven, where it makes a part of some *Bear* or *Bull*: For the Planets which turn round about it, (our Earth for Example) as they are not seen at so vast a Distance, so no Body doth so much as dream of 'em: All the Suns then are Day Suns in their own Vortexes, but Night Suns in other Vortexes: In his own World or Sphere every Sun is single, and there is but one to be seen; but every where else, they serve only to make a Number. May not the Worlds, *reply'd the Countess*, notwithstanding this great Resemblance between 'em, differ in a thousand other Things; for tho' they may be alike in one Particular, they may differ infinitely in Others.

It is certainly true, *says I*; but the Difficulty is to know wherein they differ. One Vortex has many Planets that turn round about its Sun; another  
Vortex

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Vortex has but a few : In one Vortex, there are inferior or less Planets, which turn about those that are greater ; in another perhaps, there are no inferior Planets ; here, all the Planets are got round about their Sun, in form of a little Squadron ; beyond which, is a great void Space, which reaches to the Neighbouring Vortexes : In another Place, the Planets take their Course towards the outside of their Vortex, and leave the middle void. There may be Vortexes also quite void, without any Planets at all ; others may have their Sun not exactly in their Center ; and that Sun may so move, as to carry its Planets along with it : Others may have Planets, which in regard of their Sun, ascend, and descend, according to the change of their Equilibration, which keeps them suspended. In short, what Variety can you wish for ? But, I think, I have said enough for a Man that was never out of his own Vortex.

It is not so much, *reply'd the Countess*, considering what a Multitude of  
World

Worlds there are; what you have said is sufficient for five or six, and from hence I see Thousands.

What wou'd you say, Madam, if I should tell you, there are many more fix'd Stars than those you see? And that an infinite Number are discover'd with Glasses, which are not Perceptible to our Eye-sight: In only one Constellation, where, it may be, we count twelve or fifteen, there are as many to be found as usually appear in the whole Hemisphere.

I submit, *says the Countess*, and beg your Pardon: You quite confound me with Worlds and Vortexes. Oh, Madam, I've a great deal more to tell ye, *reply'd I*, you see that whiteness in the Sky, which some call the *Milky-way*; can you imagine what That is? 'Tis nothing but an infinity of small Stars, not to be seen by our Eyes, because they are so very little; and they are sown so thick, one by another, that they seem to be one continu'd Whiteness: I wish you had a Glass, to see  
this

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this *Ant-Hill* of Stars, and this *Cluster* of Worlds, if I may so call 'em : They are in some sort, like the *Maldivy* Islands : Those twelve thousand Banks of Sand, separated only by narrow Channels of the Sea, which a Man may as easily leap over as a Ditch : So near together are the Vortexes of the *Milky-way*, that I presume, the People in one World, may talk, and shake Hands with those of another ; at least I believe the Birds of one World, may easily fly into t'other ; and that Pidgeons may be train'd up to carry Letters, as they do in the *Levant*. These little Worlds are excepted out of that general Rule, by which one Sun in his own Vortex, as soon as he appears, effaces the Light of all other foreign Suns : If you were in one of these little Vortexes of the *Milky-way*, your Sun would not be much nearer to you, and consequently, would not make any much more sensible Impression on your Eyes, than a hundred Thousand other Suns of the neighbouring Vortexes : You would

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then see your Heaven shine bright with an infinite Number of Fires, close to one another, and but a little distant from you; so that tho' you should lose the Light of your own particular Sun, yet there would still remain visible Suns enough beside your own, to make your Night as light as Day, at least, the difference would hardly be perceiv'd; for the Truth is, you would never have any Night at all: The Inhabitants of these Worlds, accustom'd to perpetual Brightness, would be strangely astonish'd, if they should be told that there are a miserable sort of People, who, where they live, have very dark Nights, and when 'tis Day with them, they never see more than one Sun; certainly they would think Nature had very little Kindness for us, and would tremble with Horror, to think what a sad Condition we are in.

I don't ask you, *says the Countess*, whether in those Worlds of the *Milky-way*, there are any Moons; I see they would be of no use to those principal  
Planets

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Planets which have no Night, and move in Spaces too strait and narrow to cumber themselves with the Baggage of inferior Planets: Yet pray take Notice, that by your liberal Multiplication of Worlds, you have started an Objection, not easily answer'd: The Vortexes whose Suns we see, touch the Vortex in which we are; and if it be true, that Vortexes are round, how then can so many Bowls, or Globes all touch one single one? I would fain imagine how this may be done, but cannot reconcile it to my self.

Madam, *says I*, You shew a great deal of Wit, in raising this Doubt, and likewise in not being able to resolve it; for in itself the Thing is extreme Difficult, and in the same manner you conceive it, no answer can be given to it; and he must be a Fool, who goes about to find Answers to Objections which are unanswerable. If our Vortex had the form of a Dye, it would have six Squares or flat Faces, and would be far from being round; and upon every one

of these Squares, might be plac'd a Vortex of the same Figure; but if instead of these six Square Faces, it had Twenty, Fifty, or a Thousand; then might a thousand Vortexes be plac'd upon it, one upon every Flat; and, you know very well, that the more flat Faces any Body has on its outside, the nearer it approaches to roundness, just as a Diamond cut Face-wise on every side, if the Faces be very many and little, it will look as round as a Pearl of the same bigness: 'Tis in this manner, that the Vortexes are round; they have an infinite number of Faces on their outside, and every one of 'em has upon it another Vortex; these Faces are not all equal and alike; but here, some are greater, and there, some less: The least Faces of our Vortex, for Example, answer to the *Milk-way*, and sustain all those little Worlds. When two Vortexes are supported by the two next Flats on which they stand, if they leave beneath any void Space between them, as it must often happen, Nature, who is  
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an excellent Husband, and suffers nothing to be useles, presently fills up this void Space with a little Vortex or two, perhaps with a Thousand, which never incommode the others, and become one, two, or a thousand Worlds more; so that there may be many more Worlds than our Vortex has flat Faces to bear 'em: I will lay a good Wager, that tho' these little Worlds were made only to be thrown into the Corners of the Universe, which otherwise would have been void and useles; and tho' they are unknown to other Worlds which they touch, yet they are well satisfy'd with their being what they are: These are the little Worlds, whose Suns are not to be discover'd but with a Telescope, and whose Number is prodigious: To conclude, all these Vortexes are join'd to one another in so admirable a manner, that every one turns round about his Sun, without changing Place; every one has such a turn as is most easie, and agreeable to its own Scituation: They take hold of one ano-



ther, like the Wheels of a Watch, and mutually help one another's Motion: And yet 'tis true, that they act contrary to one another. Every World, as some say, is like a Foot-Ball, made of a Bladder, cover'd with Leather, which sometimes swells of its own accord, and would extend it self, if it were not hindered. But this swelling World being press'd by the next to it, returns to its first Figure; then swells again, and is again depress'd; and some affirm, that the Reason why the fix'd Stars give a twinkling and trembling Light, and sometimes seem not to shine at all, is because their Vortexes perpetually push and press our Vortex, and ours again continually repulses theirs.

I am in love with these Fancies, *says the Countess*; I am pleas'd with these Foot-Balls, which swell every Moment, and sink again, and with these Worlds, which are continually striving and pushing one another: But above all, I am pleas'd to see how this jostling keeps up the Trade of Light, which is certainly  
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the only Correspondence that is between them.

No, no, Madam, *says I*; Light is not their sole Commerce; the Neighbouring Worlds sometimes send Visits to us, and that in a very magnificent and splendid manner: There come Comets to us from thence, adorn'd with bright shining Hair, Venerable Beards, or Majestick Tails; these, *says the Countess*, are Embassadors, whose Visits may be well spared, since they serve only to fright us. They scare only Children, *says I*, with their extraordinary Train; but indeed, the Number of such Children is now a days very great. Comets are nothing but Planets, which belong to a Neighbouring Vortex, they move towards the out-side of it; but perhaps this Vortex being differently press'd by those Vortexes which encompass it, above, it is rounder than below, and the lower Part is still towards us. These Planets which have begun to move in a Circle above, are not aware, that below their Vortex will fail 'em, because it is

as it were broken. Therefore, to continue the Circular Motion, it is necessary that they enter into another Vortex, which we will suppose is ours, and that they cut through the outsides of it. They appear to us very high, and are much higher than *Saturn*; and according to our System, it is absolutely necessary they should be so high, for Reasons that signifie nothing to our present Subject. From *Saturn* downwards to the other side of our Vortex, there is a great void Space without any Planets. Our Adversaries often ask us, to what purpose this void Space serves? But let them not trouble themselves any more, I have found a use for it. 'Tis the Apartment of those strange Planets, which come into our World.

I understand you, *says she*, we don't suffer them to come into the Heart of our Vortex, among our own Planets, but we receive them as the *Grand Seigneur* does the Embassadors that are sent to him; he will not shew them so much Respect as to let 'em lodge in *Constantinople*,

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*noble*, but Quarters 'em in one of the Suburbs of the City : Madam, *says I*, we, and the *Ottomans* agree likewise in this, that as we receive Embassadours, but never send any, so we never send any of our Planets into the Worlds that are next us.

By this, *says she*, it appears that we are very proud ; however, I don't yet very well know what I am to believe. These foreign Planets with their Tails and their Beards have a terrible Countenance, it may be they are sent to affront us ; but ours that are of another Make, if they should get into other Worlds, are not so proper to make People afraid.

Their Beards and their Tails, Madam, *says I*, are not real, they are *Phænomena*, and but meer Appearances. These foreign Planets differ in nothing from ours ; but entring into our Vortex, they seem to us to have Tails or Beards, by a certain sort of Illumination which they receive from the Sun, and which has not been yet well explain'd. But

'tis certain, that is but a kind of Illumination, and when I am able I will tell you how 'tis done. I wish then, *says she*, that our *Saturn* would go take a Tail and a Beard in another Vortex, and fright all the Inhabitants of it. That done, I would have him come back again, leaving his terrible Accourments behind him, and taking his usual Place amongst our other Planets, fall to his ordinary Business. 'Tis better for him, *says I*, not to go out of our Vortex. I have told you how rude and violent the Shock is, when two Vortexes jostle one another, a poor Planet must needs be terribly shaken, and its Inhabitants in no better Condition. We think our selves very unhappy when a Comet appears, but 'tis the Comet that is in an ill Case. I don't believe that, *says she*, it brings all its Inhabitants with it in very good Health; there can be nothing so diverting as to change Vortexes. We that never go out of our own, lead but a dull Life; if the Inhabitants of a Comet had but the  
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the Wit\* to foresee the Time when they are to come into our World, they that had\* already made the Voyage, could tell their Neighbours beforehand what they would see, they could tell them, that they would discover a Planet with a great Ring about it, meaning our *Saturn*; they would also say, you shall see another Planet which has four little ones to wait on it; and perhaps some of them, resolv'd to observe the very Moment of their entring into our World, would presently cry out, *A new Sun, a new Sun*, as Sailors use to cry, *Land, Land*.

You have no reason then, *says I*, to pity the Inhabitants of a Comet, yet I suppose you will think their Condition lamentable, that inhabit a Vortex whose Sun comes in Time to be quite extinguished, and consequently who live in Eternal Night. How, *cry'd the Countess*, can Suns be put out? Yes, without doubt, *says I*, for People some thousand Years ago saw fix'd Stars in the Sky, which are now no more to be seen;

seen; these were Suns which have lost their Light, and certainly there must be a strange Defolation in their Vortexes, and a general Mortality over all the Planets, for what can People do without a Sun? This is a dismal Fancy, *says the Countess*, I would not, if I could help it, let it come into my Head, I will tell you, if you please, *reply'd I*, what is the Opinion of Learned Astronomers as to this Particular: They think that the fix'd Stars which have disappear'd, are not quite extinguish'd, but that they are half Suns, that is, they have one half Dark, and the other half Light, and turning round upon their own Axis or Center, they sometimes shew us their Light side, and afterwards turning to us their Dark side, we see them no more. To oblige you, Madam, I will be of this Opinion, because it is not so harsh as the other, tho' I cannot make it good but in relation to some certain Stars, because as some have lately observ'd, those Stars have their regulated times of appearing, and disappearing, otherwise

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wife there could be no such things as half Suns. But what shall we say of Stars, which totally disappear, and never shew themselves again after they have finish'd their Course of turning round upon their own Axis? You are too just, Madam, to oblige me to believe that Stars are half Suns. However, I will try once more what I can do in favour of your Opinion: The Suns are not extinct, they are only sunk so low into the immense depth of Heaven, that we cannot possibly see them; in this Case the Vortex follows his Sun and all's well again. 'Tis true that the greatest Part of the fix'd Stars have not this Motion, by which they remove themselves so far from us, because at other times they might return again nearer to us, and we should see them sometimes greater, and sometimes less, which never happens. But we will suppose that none but the little Light, and most active Vortexes which slip between the others, make certain Voyages, after which they return again  
while



while the main Body of Vortexes remain unmov'd. 'Tis likewise very strange that some fix'd Stars shew themselves to us, spending a great deal of time in appearing, and disappearing, and at last, totally and entirely disappear. Half Suns would appear again at their set and regulated Time. But Suns, which should be sunk low into the depths of Heaven, would disappear but once, and not appear again for a vast space of Time. Now, Madam, declare your Opinion boldly: Must not these Stars, of necessity be Suns, which are so much darkned, as not to be visible to us, yet afterwards shine again, and at last are wholly extinct? How can a Sun, *says the Countess*, be darkned and quite extinguish'd, when it is in its own Nature a Foundation of Light? It may be done, Madam, *says I*, with all the Ease in the World, if *Descartes's* Opinion be true, that our Sun has Spots; now whether these Spots be Scum or thick Mists, or what you please, they may thicken and unite, till at last they

cover

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cover the Sun with a Cruft, which daily grows thicker, and then farewell Sun. We have hitherto fcap'd pretty well; but 'tis faid, that the Sun for fome whole Years together has look'd very pale; for Example, the Year after *Cæſar's* Death; it was this Cruft that then began to grow, but the Force of the Sun broke through, and diffipated it; had it continu'd, we had been all loft People. You make me tremble, *reply'd the Counteſs*, and now I know the fatal Conſequences of the Sun's Pale-  
neſs, I believe inſtead of going every Morning to the Glaſs, to ſee how I look my ſelf, I ſhall caſt my Eyes up to Heaven, to ſee whether or no the Sun looks pale. Oh, Madam, *ſays I*, there is a great deal of Time requir'd to ruin a World. I grant it, *ſays ſhe*, yet 'tis but Time, that is requir'd. I confeſs it, *ſays I*, all this immense Maſs of Matter that compoſes the Univerſe, is in perpetual Motion, no Part of it excepted; and ſince every Part is mov'd, you may be ſure that Changes muſt happen  
happen

happen sooner or later; but still in times proportion'd to the Effect. The Ancients were pleasant Gentlemen, to imagine that the Celestial Bodies were in their own Nature unchangeable, because they observ'd no Alteration in them; but they did not live long enough to confirm their Opinion by their own Experience; they were Boys in comparison of us. Give me leave, Madam, to explain my self by an Allegory: If Roses, which last but a Day, could write Histories and leave Memoirs one to another, and if the first Rose should draw an exact Picture of his Gardiner, and after fifteen Thousand Rose-Ages; it should be left to other Roses, and so on still to those that should succeed, without any change in it; should the Roses hereupon say, we have every Day seen the same Gardiner, and in the Memory of Roses, none ever saw any Gardiner but this; he is still the same he was, and therefore certainly he will *not* die, as we do, for there is no Change at all in him. Would not these Roses Madam, talk very foolishly? And yet there

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there would be more reason in their Discourse, than there was in what the Ancients said concerning Celestial Bodies ; and though even to this very Day there should appear no visible Change in the Heavens, and the Matter, of which they are made, should have all the Signs of an Eternal Duration, without any Change ; yet I would not believe 'em unchangeable, till I had the Experience of many more Ages. Ought we, who last but a Moment, to make our Continuance the mensurate Duration of any other Being ? 'Tis not so easie a matter to be Eternal, To have lasted many Ages of Men, one after another, Is no Sign of Immortality. Truly, *says the Countess*, I find the Worlds are far from being able to pretend to it ; I will not do 'em so much Honour, as to compare 'em to the Gardiner that liv'd so much longer than the Roses : I begin to think 'em like the Roses themselves, which blow one Day, and die the next : For now I understand, that if old Stars disappear, new ones

ones will come in their Room, because every Species must preserve it self. No Species, Madam, *says I*, can totally perish; some perhaps will tell you that such new Stars are Suns, which return to our Sight again, after they have been a long Time hid from us, in the Profundity of Heaven: Others may tell you they are Suns cleared from that thick Crust, which once cover'd them: If I should think all this possible, yet I likewise believe that the Universe may be fram'd in such a Manner, that from time to time it may produce new Suns; why may not that Matter which is proper to make a Sun, be dispers'd here and there, and gather it self again at long run, into one certain Place, and lay the Foundation of a New World? I am very much inclin'd to believe such new Productions, because they suit with that Glorious and Admirable Idea which I have of the Works of Nature. Can we think that wise Nature knows no more than the Secret of making Herbs and Plants live and die by a continual

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tinual Revolution? I am verily persuaded, and are not you so too, Madam, that Nature, without much Cost or Pains, can put the same Secret in Practice upon the Worlds? I now find, *says the Countess*, the Worlds, the Heavens, and Celestial Bodies so subject to change, that I am come to my self again. To recover our selves the better, *reply'd I*, let us say no more of these Matters. We are arriv'd at the very Roof and Top of all the Heavens; and to tell you whether there be any Stars beyond it, you must have an abler Astronomer than I am; you may place Worlds there, or no Worlds, as you please: 'Tis the Philosopher's Empire to describe those vast invisible Countries, which are, and are not, or are such as he pleases to make 'em: It is enough for me to have carried your *Mind*, as far as you can see with your Eyes.

Well, I have now, *says the Countess*, the System of the Universe in my Head; How learned am I become? Indeed, Madam, *says I*, you are pretty knowing,

ing, and with this Advantage, of believing or disbelieving any thing I have said; all the Recompence I desire for the Pains I have taken, is, that you would never look upon the *Sun*, the *Heaven*, or the *Stars*, without thinking on me.

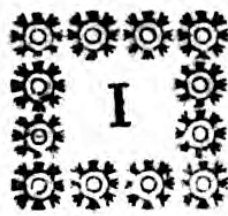


## The Sixth Evening's

### CONVERSATION.

[ Never before Translated. ]

*Some New Observations which confirm those in the preceding Discourses and several late Discoveries which have been made in the Heavens.*

 I was a considerable Time since the Countess and I had any Talk of the *Planetary Worlds*; and it was so long indeed, that we began to forget we ever had held any Discourse on that Subject.

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Subject. When I went one Day to Visit her, I came in just as two Gentlemen of Wit and Character in the World had taken their leaves of her. Well! *says she*, the very Moment she perceived me, you see what a Visit I have been receiving; and, I protest, it has given me some room to suspect that it has been in your Power to impose upon my Judgment. I should be very Proud, Madam, *reply'd I*, if I could flatter my self with such a Power, because I look upon it to be the hardest Task any one could attempt. As hard as it is, *says the Countess*, I am afraid you have done it. I do not know how it came about, but the Conversation turn'd upon the *Plurality of Worlds* with my two Friends who are just gone: I am not certain, if they did not introduce the Discourse with a Malicious Design. I made no scruple to tell them directly, that all the Planets were Inhabited; one of them reply'd, he was very well satisfied I did not believe a Word of it, and I with all the Simplicity imaginable, maintain'd



maintain'd, that it was my real Opinion ; he still look'd upon it as a piece of Dissimulation design'd to divert the Company : And I thought what made him so positive that I did not believe my own Sentiments was, that he had too high an Opinion of me to conceive that I could entertain so extravagant a Notion. As for the other Gentlemen, who had not altogether that Esteem for me, they took me at my Word. For God's sake, why did you put a Thing in my Head, which People that value me cannot think I maintain seriously ? Nay, Madam, *says I*, but why would you maintain it seriously among a set of People, who, I am sure, never enter'd into a way of Reasoning which had the least cast of Seriousness ? Must we intrust the Inhabitants of the Planets so highly ? We should content ourselves with being a little select Number of Advocates for them, and not communicate our *Mysteries* to the Vulgar. How ! *says the Countess*, do you call my two last Visitants the Vulgar ?  
They

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They may have Wit enough, *says I*, but they never Reason at all. And your Reasoners, who are a severe set of People, will make no Difficulty of sorting them with the Vulgar. On the other Side, these Men of Fire revenge themselves by ridiculing the Reasoners; and think it is a very just Principle in Nature, that every Species despises what it wants. It were right, if it was possible, to conform our selves to every Species; and it had been much better for you to have rallied on the Inhabitants of the Planets with your two Friends, because they are better at Rallery than Reasoning, which they never make Use of: You had then come off with their joint Esteem; and the Planets had not lost a single Inhabitant by it. Would you have had me sacrifice the Truth to a Jest! *reply'd the Countess*: And is that all the Conscience you have? I own to you, *says I*, that I have no great Zeal for these sorts of Truths, and I will sacrifice them with all my Soul to the last conveniencies of Com-

Company. For Instance, I see what is, and always will be, the Reason, why the Opinion of the Planets being Inhabited, is not received so probable as it really is: The Planets always present themselves to our View as Bodies which emit Light; and not at all like great Plains and Meadows. We should readily agree that Plains and Meadows were Inhabited; but for Luminous Bodies to be so too, there is no Ground to believe it. Reason may come and tell us over and over, that there are Plains and Meadows in these Planets, but Reason comes a Day too late; one Glance of our Eyes has had its Effect before her, we will not hear a Word she says, the Planets must be Luminous Bodies, and what sort of Inhabitants should they have? Our Imagination of Course would presently represent their Figures to us, it is what she cannot do, and the shortest Way is to believe there are no such Beings. Would you have me for the Establishment of these Planetary People, whose Interests are far from touching

touching me, go to attack those formidable Powers, call'd Senses and Imagination? It is an Enterprize would require a good Stock of Courage, and we cannot easily prevail on Men, to substitute their Reason in the Place of their Eyes. I Sometimes meet with reasonable People enough, who are willing, after a Thousand Demonstrations, to believe that the Planets are so many Earths: But their Belief is not such as it would be, if they had not seen them under a different Appearance; they still remember the first Idea they entertain'd, and they cannot well recover themselves from it. It is these sort of People, who, in believing our Opinion, seem to do it a Courtesie, and only favour it for the Sake of a certain Pleasur which its Singularity gives them.

Well, *says the Countess*, interrupting me, and is not this enough for an Opinion, which is but barely probable? You would be very much surpriz'd, *says I*, if I should tell you, *probable* is a very modest Term. Is it simply probable

bable that such a one as *Alexander* ever was? You hold it very certain that there was, and upon what is this Certainty founded? Because you have all the Proofs which you could desire in a like Matter, and there does not the least Subject for Doubt present it self, to suspend or arrest your Determination; for else you never could see this *Alexander*, and you have not one *Mathematical* Demonstration that there ever was such a Man, Now what would you say if the Inhabitants of the Planets were almost in the very same Case? We cannot pretend to make you see them, and you cannot insist upon the Demonstration here, as you would in a *Mathematical* Question; but you have all the Proofs you could desire in a like Matter: The entire Resemblance of the *Planets* with the *Earth* which is inhabited, the Impossibility of conceiving any other Use for which they were created, the Fecundity, and Magnificence of Nature, the certain Regards she seems to have had to the Necessities of their Inhabitants, as in  
giving

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giving *Moons* to those *Planets* remote from the *Sun*, and more *Moons* still to those yet more remote; and what is still very material, there are all things to be said on this side, and nothing on the other; and you cannot comprehend the least Subject for a Doubt, unless you will take the Eyes and Understanding of the *Vulgar*. In short, supposing that these Inhabitants of the Planets really are, they could not declare themselves by more Marks, or Marks more sensible; and after this you are to consider whether you are willing not to take their Case to be more than purely probable. But you would not have me, *replies the Countess*, look upon this to be as certain as that there was such a Man as *Alexander*? Not altogether, Madam, *says I*, for tho' we have as many Proofs touching the Inhabitants of the Planets, as we can have in the Situation we are, yet the Number of these Proofs is not great. I must renounce these Planetary Inhabitants, *replies she*, interrupting me, for I can't conceive how to rank 'em in my Imagination;

gination ; there is no absolute Certainty of them, and yet there is more than a Probability ; so that I'm confounded in my Notions. Ah, Madam, *says I*, never put your self out of conceit with them for that ; the most common and ordinary Clocks shew the Hours, but those are wrought with more Art and Nicety which shew the Minutes. Just so your ordinary Capacities are sensible of the Difference betwixt a simple Probability, and a compleat Certainty ; but 'tis only your fine Spirits that discern the exact Proportions of Certainty or Probability, and can mark, if I may use the Phrase, the Minutes in their Sentiments. Now place the Inhabitants of the Planets a little below *Alexander* ; but above, I can't tell how many Points of History which are not so clearly prov'd : I believe this Position will do well. I love Order, *says the Countess*, and you oblige me in ranging my Ideas for me : But pray, why didn't you take this Care before ? Because, *says I*, should you believe the Inhabitants of the Planets either a little more or less than

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than they deserve, there will be no great Damage in it. I'm sure that you don't believe the Motion of the Earth so fully as it ought to be believ'd; and have you much Reason to complain on that Score? O! For that matter, *replies she*, I have discharg'd my self well, you have nothing to reproach me with on that Account, for I firmly believe that the Earth turns. And yet, *says I*, Madam, I have not given you the strongest Reasons in proving it. Ah! Traitor, *replies the Countess*, to make me believe things upon feeble Proofs: Then you did not think me worthy of believing upon substantial Reasons? I only prov'd things, *says I*, upon little engaging Reasons, and such as were adapted to your peculiar Use: Should I have conjur'd up as strong and solid Arguments, as if I had been to attack a Doctor in the Science? Yes, *says the Countess*, pray take me for a Doctor from this Moment, and let me have your additional Demonstrations of the Earth's moving.



Withal my Heart, *says I*, Madam, and I own the Proof pleases me strangely, perhaps because I think it was of my own finding; yet it is so good and natural, that I must not presume positively to have been the Inventor of it: It is most certain, that if a learned Man was puzzled, and desir'd to make Replications to it, he would be oblig'd to hold forth at large, which is the only Method in the World to confound a learned Man. We must grant, that all the Celestial Bodies, in four and twenty Hours, turn round the Earth, or that the Earth turning on it self, imparts this Motion to all the Celestial Bodies. But that they really have this Revolution in four and twenty Hours round the Earth, is a Matter which has the least Appearance in the World, tho' the Absurdity does not presently appear to our View. All the Planets certainly make their great Revolution about the Sun; but these Revolutions of theirs are unequal according to the Distances of the respective Planets from the Sun; for the most remote ones make their  
Course

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Course in a larger Time, which is most agreeable to Nature: The same Order is observ'd among the little secondary Planets in turning about a great one. The four Moons of *Jupiter*, and the five of *Saturn*, make their Circles in more or less Time round their great Planet, according as they are more or less remote. Besides, it is certain that the Planets have Motions upon their own Centers, and these Motions likewise are unequal; we cannot well tell how to account for this Inequality, whether it proceeds from the different Magnitudes of the Planets, or on the different Swiftnes of the particular Vortexes which inclose them, and the liquid Matters in which they are sustain'd; but, in short, the Inequality is most undoubted; and such is the Order of Nature in general, that whatever is common to many things, is found at the same Time to vary in some different Particulars.

I understand you, *says the Countess*, interrupting me, and, I think, there's a great deal of Reason in what you say;

I'm entirely of your Mind, if the Planets turn'd about the Earth, they wou'd do it in unequal Spaces of Time, according to their Distances, as they do about the Sun: Is not that the Meaning of what you were saying? Exactly, Madam, *says I*, their unequal Distances, with respect to the Earth, their different Magnitudes, and the different Rapidity of the particular Vortexes inclosing them, should consequently produce Differences in their pretended Motion round the Earth, as well as in all their other Motions. And the fix'd Stars which are at such a prodigious Distance from us, and so much elevated above every thing that can take a general Motion round us, at least which are scituated in a Place whence this Motion should be very much weaken'd, would there not be a very great Appearance that they did not turn at all about us in four and twenty Hours, as the Moon does who is so near us? And should not Comets, which are Strangers in our Vortex, and which run Courses so differing one from another, and with  
such

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such unequal Rapidity, be excus'd from turning round us in the same Space of four and twenty Hours? But no Matter, fix'd Stars, and Comets, and all must turn round the Earth in four and twenty Hours; yet, if there were some Minutes of Difference in these Motions, we might be contented; and they all must make them with the most exact Equality, or rather the only exact Equality which is in the World, and not one Minute more or less allow'd. In Reality, this Matter is strangely to be suspected.

Oh! *says the Countess*, since 'tis possible that this grand Equality should be only in our Imagination, I'm entirely convinc'd it is deriv'd only from thence: I'm very well pleas'd, that any which is against the Genius of Nature, should fall entirely upon our selves, and that she should stand discharg'd, tho' at our Expence. For my part, *says I*, I'm such a Foe to a perfect Equality, that I cannot even allow that all the Turns which the Earth every Day makes on her self, should be precisely in four and

twenty Hours, and always equal one to another; I should be very much inclin'd to think that there are Differences. Differences! *cry'd the Countess*, Why, do not our Pendulums mark an entire Equality? Oh, *says I*, to your Pendulums I must object, for they cannot be altogether just; and sometimes when they are, in shewing us that one Circuit of twenty four Hours, is longer or shorter than another, we should rather be inclin'd to believe them irregular, than to suspect the Earth of any Irregularity in her Revolutions. What a pleasant Respect is this we have for her, I would no more depend on the Earth than on a Pendulum! And the very same Casualties almost which will disorder the one, will make the other irregular! Only, I believe, there must be some more Time allow'd for the Earth, than a Pendulum, to be visibly put out of Order; and that's all the Advantage we can give on her side. But might she not by Degrees draw nearer to the Sun? And there finding herself in a Scituation, where the Matter is more agitated, and  
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the Motion more rapid, ſhe will in leſs Time make her double Revolution both about the Sun and her ſelf; ſo conſe- quently her Years and Days will be much ſhorten'd, but not to be perceiv'd, becauſe we muſt ſtill go on to divide the Years into three hundred and ſixty five Days, and the Days into twenty four Hours: So that without living longer than we now do, we ſhall live more Years; and on the other Hand, as the Earth ſhall withdraw from the Sun, we ſhall live fewer Years than we do now, and yet have our Lives of the ſame Extent. There is a great deal of Probability, *ſays the Counteſs*, that whenever it falls out ſo, long Succeſſions of Ages will make but very little Differences. I agree with you, Madam, *reply'd I*, the Conduct of Nature is very nice, and ſhe has a Method of bringing about all Things by Degrees, which are not ſenſible, but in very obvious and eaſie Changes: We are ſcarce able to perceive the Change of the Seaſons, and for ſome others which are made with a certain Deliberation, they do

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The first part of the  
 book is devoted to the  
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 West. It starts with  
 the apostles and  
 goes on to the  
 present. The author  
 examines the  
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 monasteries. He  
 also discusses the  
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 summary of the  
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Which she would reach  
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do not fail to escape our Observance. However all is in a perpetual Whirl, and not so much as the Ladies Face in the Moon, which was discover'd with Telescopes, within this twenty Years, but what is grown considerably old. She had a good tolerable Countenance, but now her Cheeks are sunk, her Nose grown long, and her Chin and Forehead meet, so that all her Graces are vanish'd, and Age has made her a terrible Spectacle.

What a Story do you tell me, *says the Countess*, interrupting me? 'Tis no Imposition, Madam, *reply'd I*, they have perceiv'd in the Moon a particular Figure which had the Air of a Woman's Head jetting out of Rocks, and it is owing to some Changes that have happen'd there. Some Pieces of Mountains have moulder'd away, and left us to discover three Points, which can only serve to make up the Forehead, Nose, and Chin, of an old Woman. Well, *says she*, but don't you think it is some Destiny that had a particular Spite to Beauty? And very justly it was this  
Female-

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Female-Head, which she would attack above all the Moon. Perhaps in Recompence, *reply'd I*, the Changes which happen upon our Earth, dress out some Face, which the People in the Moon see; I mean something like what we conceive a Face in the Moon; for every one bestows on Objects those Ideas of which they themselves are full. Our Astronomers see on the Surface of the Moon, the Faces of Women, and may be, if the Ladies were to make their Speculations, they would discern the Resemblance of fine Mens Faces. For my Part, Madam, I don't know whether I should not fancy your Ladyship's Charms there. I protest, *says she*, I can't help being oblig'd to any One who should find me there. But to come back to what you were mentioning just now: Do any considerable Changes affect the Earth? In all Appearance they do, *reply'd I*: Our Fables tell us, that *Hercules* with his Hands split asunder the Two Mountains, call'd *Calpe* and *Abila*, which stand betwixt *Africk* and *Spain*, stop'd the  
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the Ocean from flowing there, and that immediately the Sea rush'd with Violence over the Land, and made that great Gulph which we call the *Mediterranean*. Now this is not wholly fabulous, but a History of those remote Times, which has been disguis'd, either from the Ignorance of the People, or thro' the love they had for the Marvellous, the two most ancient Frailties of Mankind. That *Hercules* should separate two Mountains with his two Hands, is absolutely incredible; but that in the time of one *Hercules* or other, for there were Fifty of that Name, the Ocean should force down two Mountains, not so strong as others in the World, and perhaps thro' the Assistance of some Earthquake, and so take his Course betwixt *Europe* and *Africk*, gives me no manner of Pain to believe. What a notable Spot might the *Lunar* Inhabitants all on the sudden discover on our Earth; for you know, Madam, that Seas are Spots. It is no less the common Opinion, that *Sicity* was disjoyn'd from *Italy*, and *Cyprus* from *Syria*.

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*ria* : There are sometimes new Islands form'd in the Seas: Earthquakes have swallow'd up Mountains, others have rose and have alter'd the Course of the Planets. The Philosophers give us Apprehensions, that the Kingdoms of *Naples* and *Sicily*, which are Countries laid upon great subterranean Vaults, full of Sulphur, will one day sink in, when those Vaults shall no longer be able to resist the Flames which they contain, and at this time exhale at Vents, *to wit*, *Vesuvius* and *Aetna*. Is not here enough to diversify the Sight which we give to the People in the Moon?

I had much rather, *says the Countess*, that we disgusted them with the same Object always, than diverted them with the swallowing up of Provinces.

I don't know, *reply'd I*, if within this little time there have not been several burnt up in *Jupiter*. What, Provinces burnt up in *Jupiter*! *Cries the Countess*, upon my Word, that wou'd be considerable News. Very considerable,  
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rable, *says I*, Madam: We have remark'd this Year in *Jupiter* a long Trail of Light, more glaring than the rest of that Planet's Body. We have here had Deluges, perhaps they may have suffer'd great Conflagrations in *Jupiter*: How do we know to the contrary? *Jupiter* is Ninety Times bigger than the Earth, and turns on his one Center in Ten Hours, whereas we don't turn in less than four and twenty, which implies that his Motion is two hundred and sixteen times stronger than ours. May it not be possible, that in so rapid a Circulation, its most dry and combustible Parts should take fire as we see the Axle-trees in Wheels, from the force of Motion, will perfectly flame? But however it is, this Light of *Jupiter* is by no means comparable to another, which in all Probability is as Ancient as the World, and yet we have never seen it. How does a Light order it to be conceal'd, *says the Countess*? There must be some singular Address to compass that Point.

This

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This Light, *reply'd I*, never appears but at Twilight, which is often strong enough to drown it; and even when Twilight suffers it to appear, either the Vapours of the Horizon rob us of it, or it is so very faint and hard to be perceiv'd, that for want of Exactness in our Knowledge, we mistake it for the Twilight. But, in short, for these last sixteen Years, they have with much Certainty distinguish'd it; and it has been for some Time the Delight of the Astronomers, whose Curiosity wanted waking by some Novelty, and they could not well have been more touch'd, if they had discover'd some new secondary Planets. The too latter Moons of *Saturn*, for Instance, did not ravish them to that Degree which the Guards or Moons of *Jupiter* did: But now we are fully accustom'd to it; we see, one Month before, and after, the Vernal Equinoctial, when the Sun's set and the Twilight over, a certain whitish Light resembling the Tail of a Comet. We see the same before Sun rise, and before the  
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the Twilight, towards the Autumnal Equinoctial; and towards the Winter Solstice we see it Night and Morning, except at these Times it can't, as I but now observ'd, disengage it self from the Twilights, which are too strong and lasting; for we suppose it to be a continu'd Light, and in all Probability it is so. We have begun to conjecture that it is produc'd from some prodigious Quantity of Matter crowded together, which circles round the Sun to a certain Extent: The greatest Part of his Rays pierce thro' this gross Circuit, and come down to us in a right Line; but some resting on the inner Surface of this Matter, are from thence reflected to us, and come with the direct Rays, or else we can't have them either Morning or Evening. Now as these reflected Rays are shot from a greater Height than those which are direct, we must consequently have them sooner, and keep them longer.

On this foot, I must acquiesce in what I have already mentioned, that  
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the *Moon* must have no Twilight for want of being surrounded by such a gross Air as the *Earth*. But she can be no loser; her Twilights will proceed from that kind of gross Air which surrounds the *Sun*, and reflex his Rays on Places which his direct ones cannot reach. But pray let me know, *says the Countess*, are not there Twilights settled for all the Planets, who will not need every one to be Cloathed with a distinct gross Air, because that which surrounds the Sun alone, may have one general Effect for all the Planets in the Vortex? I am mighty willing to think that Nature, agreeable to that Inclination which I know she has to Oeconomy, and good Management, should make that single means answer her purpose: Yet, *reply'd I*, notwithstanding that suppos'd Oeconomy, she must have, with Respect to our Earth, two Causes for Twilight; one whereof, which is the thick Air about the Sun, will be pretty Useless, and can only be an Object of Curiosity for the Academy



Academy Students: But not to conceal any thing, it is possible that only the Earth sends out from herself Vapours and Exhalations gross enough to produce Twilights, and that Nature had reason to provide by one general Means for the Necessities of all the other Planets, which are, if I may so say, of a purer Mould, and their Evaporations consequently more Subtle. We are perhaps those among all the Inhabitants of the Worlds in our Vortex, who requir'd to have a more gross and thick Air given us to breath in. With what Contempt would the Inhabitants of the other Planets consider us, if they knew this?

They would be out in their Reasoning, *says the Countess*, we're not to be despis'd for being wrap'd about with a thick Air, since the Sun himself is so surrounded. Pray tell me, is not this Air produc'd by certain Vapours, which you have formerly told me issued from the Sun, and does it not serve to break the first force of his Rays, which had  
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else probably been to Excess? I conceive that the Sun may be veil'd by Nature, to be more proportion'd to our use. Well, Madam, *reply'd I*, this is some small opening to a System which you have started very happily. We may add, that these Vapours may produce a kind of Rain, which falling back upon the Sun may cool and refresh it, as we sometimes throw Water into a Forge, when the Fire is too fierce. There is nothing which we may not presume to help out Nature's Address, but she has another kind of Address very particular, which is to conceal her self from us, and we should not willingly be confident that we have found out her Method of acting on her Designs in it: In case of New Discoveries, we should not be too importunate in our Reasonings, tho' we are always fond enough to do it; and your true Philosophers are like Elephants, who as they go, never put their second Foot to the Ground, till their first be well fix'd. The Comparison seems the more just to me, *says she*, as  
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the Merit of those two Species of Animals, Elephants and Philosophers, does not at all consist in Exterior Agreements. I am willing to mistake the Judgment of both; now teach me some of the latter Discoveries, and I promise you not to make any rash Systems.

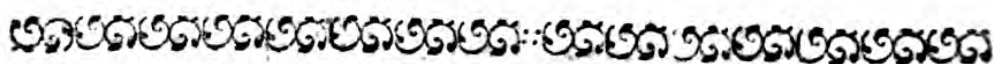
I'll tell you, Madam, *reply'd I*, all the News I know from the Firmament, and I believe the freshest Advices you can have. I am sorry they are not as surprizing and wonderful, as some Observations which I read t'other Day in an Abridgment of the *Chinese Annals*, written in *Latin*, and publish'd lately. They see a Thousand Stars at a Time, which fall from the Sky into the Sea with a prodigious Noise, or are dissolv'd, and melt into Rains; and these are Things which have been seen more than once in *China*. I met with this Observation at two several Times pretty distant from each other, without reckoning a certain Star which goes *Eastward*, and bursts like a Squib, always with a great Noise. It is great Pity that these

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these sort of *Phænominas* should be reserv'd for *China*, and that our Countries should never have their Share of these Sights. It is not long since our Philosophers thought they might affirm on good Grounds, That the Heavens and all the Celestial Bodies were Incorruptible, and therefore incapable of Change; and yet at the same time, there were other Men in the other part of the Earth who saw Stars dissolve by Thousands, which must produce a very different Opinion. But, *says the Countess*, did we ever hear it allow'd that the *Chinese* were such great Astronomers? 'Tis true, we did not, *says I*, but the *Chinese* have an Advantage from being divided from us by such a prodigious Tract of Earth, as the *Greeks* had over the *Romans* by being so much Prior in Time: Distances of every sort pretend a Right of Imposing on us. In Reality, I think still more and more, that there is a certain Genius which has never yet been out of the Limits of *Europe*, or at least not much beyond them: perhaps he may not be permitted

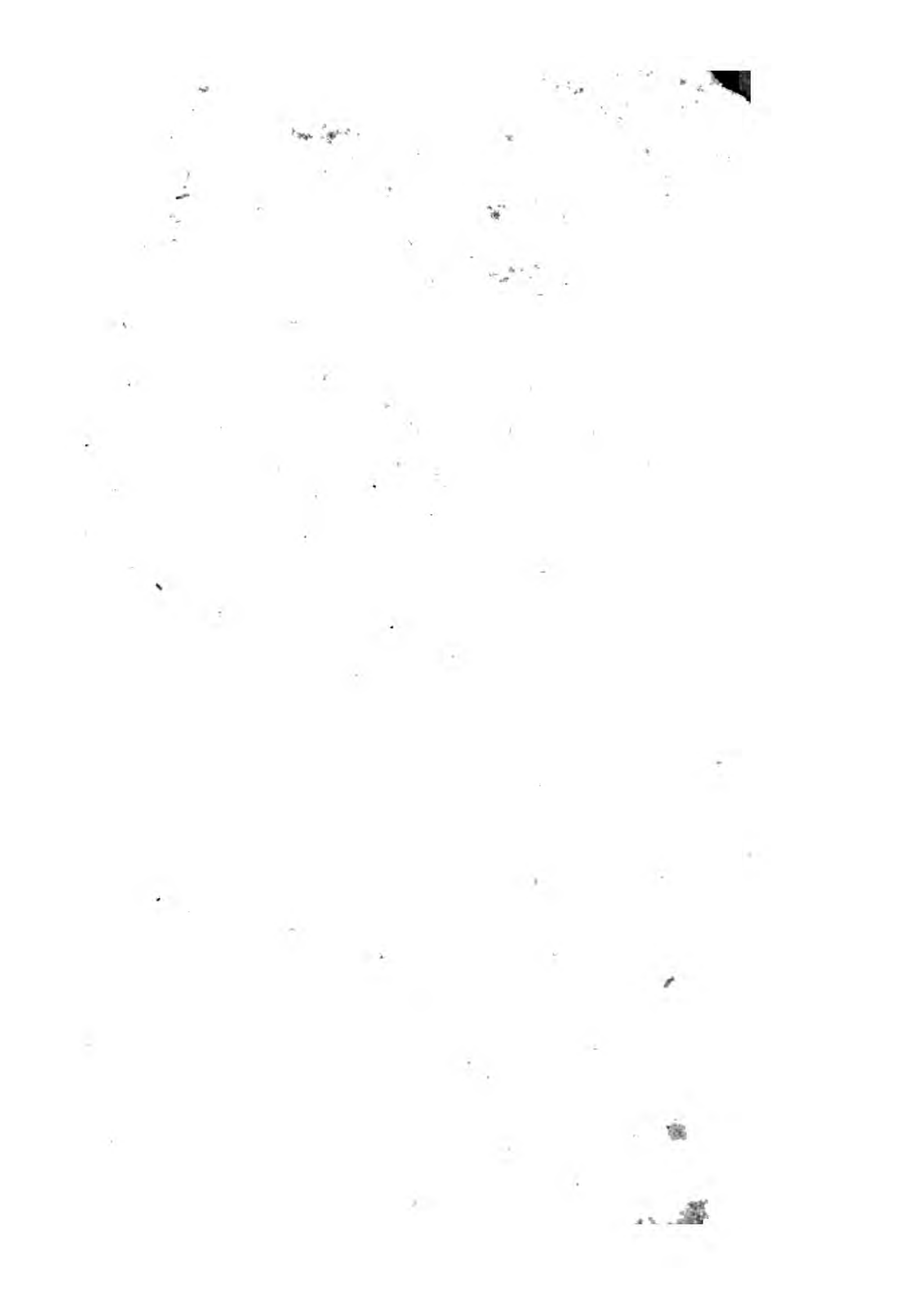
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to spread over any great Extent of the Earth at once, and that some fatality prescribes him very narrow Bounds. Let us indulge him whilst we have him; the best of it is, he is not fetter'd up to the Sciences and dry Speculations, but launches out with as much Success into Subjects of Pleasure, in which Point I question whether any People equal us. These are Subjects, Madam, that ought to give you Entertainment, and make up your whole *System of Philosophy*.



*F I N I S.*

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