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An Account of Several Nebulae or Lucid Spots Like Clouds, Lately Discovered among the Fixt Stars by Help of the Telescope

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I. *An Account of several Nebulæ or lucid Spots like Clouds, lately discovered among the Fixt Stars by help of the Telescope.*

IN our last we gave a short Account of the several New Stars that have appeared in the Heavens, within the last 150 Years, some of which afford very surprizing Phenomena. But not less wonderful are certain luminous Spots or Patches, which discover themselves only by the Telescope, and appear to the naked Eye like small Fixt Stars; but in reality are nothing else but the Light coming from an extraordinary great Space in the Ether; through which a lucid *Medium* is diffused, that shines with its own proper Lustre. This seems fully to reconcile that Difficulty which some have moved against the Description *Moses* gives of the Creation, alledging that Light could not be created without the Sun. But in the following Instances the contrary is manifest; for some of these bright Spots discover no sign of a Star in the middle of them; and the irregular Form of those that have, shews them not to proceed from the Illumination of a Central Body. These are, as the aforesaid New Stars, Six in Number, all which we will describe in the order of time, as they were discovered; giving their Places in the Sphere of Fixt Stars, to enable the Curious, who are furnished with good Telescopes, to take the Satisfaction of contemplating them.

The first and most considerable is that in the Middle of *Orion's* Sword, marked with θ by *Bayer* in his *Uranometria*, as a single Star of the third Magnitude; and is so accounted by *Ptolemy*, *Tycho Brahe* and *Hevelius*: but is in reality

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reality two very contiguous Stars environed with a very large transparent bright Spot, through which they appear with several others. These are curiously described by *Hugenius* in his *Systema Saturnium* pag. 8. who there calls this brightness *Portentum, cui certe simile aliud nusquam apud reliquas Fixas potuit animadvertere* : affirming that he found it by chance in the Year 1656. The Middle of this is at present in Π $19^{\circ}.00$, with South Lat. $28^{\circ}\frac{3}{4}$.

About the Year 1661 another of this sort was discovered (if I mistake not) by *Bullialdus*, in *Cingulo Andromedæ*. This is neither in *Tycho* nor *Bayer*, having been omitted, as are many others because of its smallness : But it is inserted into the Catalogue of *Hevelius*, who has improperly call'd it *Nebulosa* instead of *Nebula* ; it has no sign of a Star in it, but appears like a pale Cloud, and seems to emit a radiant Beam into the North East, as that in *Orion* does into the South East. It precedes in Right Ascension the Northern in the Girdle, or ν *Bayero*, about a Degree and three Quarters, and has Longitude at this time Υ . $24^{\circ}.00'$ with Lat. North $33^{\circ}\frac{1}{3}$.

The Third is near the Ecliptick between the *Head* and *Bow* of *Sagittary*, not far from the Point of the Winter Solstice. This it seems was found in the Year 1665 by a German Gentleman *M. J. Abraham Ihle*, whilst he attended the Motion of *Saturn* then near his *æpkelion*. This is small but very luminous, and emits a Ray like the former. Its Place at this time is ψ . $4^{\circ}\frac{1}{2}$ with about half a Degree South Lat.

A fourth was found by *M. Edm. Halley* in the Year 1677, when he was making the Catalogue of the Southern Stars. It is in the *Centaur*, that which *Ptolemy* calls δ $\epsilon\mu$ $\nu\iota\varsigma$ ξ $\nu\acute{o}\tau\epsilon$ $\epsilon\kappa$ $\rho\acute{\iota}\nu\omega\varsigma$. which He names *in dorso Equino Nebula* and is *Bayer's* ω ; It is in appearance between the fourth and fifth Magnitude, and emits but a small Light for its Breadth,

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and is without a radiant Beam; this never rises in *England*, but at this time its Place is $m\ 5^{\circ}\frac{3}{4}$ with $35^{\circ}\frac{1}{5}$ South Lat.

A Fifth was discovered by Mr. G. Kirch in the Year 1681, preceding the Right Foot of *Antinous*: It is of its self but a small obscure Spot, but has a Star that shines through it, which makes it the more luminous. The Longitude of this is at present $w. 9^{\circ}$. *circiter*, with $17^{\circ}\frac{1}{2}$. North Latitude.

The Sixth and last was accidentally hit upon by M. Edm. Halley in the Constellation of *Hercules*, in the Year 1714. It is nearly in a Right Line with ζ and n of *Bayer*, somewhat nearer to ζ than n : and by comparing its Situation among the Stars, its Place is sufficiently near in $m\ 26^{\circ}\frac{1}{2}$. with $57^{\circ}\ 00$. North. Lat. This is but a little Patch, but it shews it self to the naked Eye, when the Sky is serene and the Moon absent.

There are undoubtedly more of these which have not yet come to our Knowledge, and some perhaps bigger but though all these Spots are in Appearance but little, and most of them but of few Minutes in Diameter; yet since they are among the Fixt Stars, that is, since they have no Annual Parallax, they cannot fail to occupy Spaces immensely great, and perhaps not less than our whole Solar System. In all these so vast Spaces it should seem that there is a perpetual uninterrupted Day, which may furnish Matter of Speculation, as well to the curious Naturalist as to the Astronomer.