netic process in their photospheres, we may consider this process of light as variable in many ways, without assuming any local or temporary *condensations of the celestial ether*, or any intervention of the so-called *cosmical clouds*. It may either occur only once or recur periodically, and either regularly or irregularly. The electrical processes of light on our earth, which manifest themselves either as thunder-storms in the regions of the air, or as polar effluxes, together with much apparently irregular variation, exhibit nevertheless a certain periodicity dependent both on the seasons of the year and the hours of the day; and this fact is, indeed, frequently observed in the formation for several consecutive days, during perfectly clear weather, of a small mass of clouds in particular regions of the sky, as is proved by the frequent failures in attempts to observe the culmination of stars.

The circumstance that almost all these new stars burst forth at once with extreme brilliancy as stars of the first magnitude, and even with still stronger scintillation, and that they do not appear, at least to the naked eye, to increase gradually in brightness, is, in my opinion, a singular peculiarity, and one well deserving of consideration. Kepler* attached such weight to this criterion, that he refuted the idle pretension of Antonius Laurentinus Politianus to having seen the star in Ophiuchus (1604) before Bronowski simply by the circumstance that Laurentinus had said, "Apparuit nova stella parva et postea de die in diem crescendo apparuit lumine non multo inferior Venere, superior Jove." There are only three stars, which may be looked upon in the light of exceptions, that did not shine forth at once as of the first magnitude; viz., the star which appeared in Cygnus in 1600, and that in Vulpes in 1670, which were both of the third, and Hind's ne tar in Ophiuchus in 1848, which is of the fifth magnitude.

It is much to be regretted, as we have already observed, that after the invention of the telescope in the long period of 178 years, only two new stars have been seen, whereas these phenomena have sometimes occurred in such rapid succession, that at the end of the fourth century four were observed in twenty-four years; in the thirteenth century, three in sixty-one years; and during the era of Tycho Brahe and Kepler, at the end of the sixteenth and beginning of the seventeenth centuries, no less than six were observed within a

* Kepler, *De Stella Nova in pede Serp.*, p. 3.