that occur in accessible portions of our Earth. Without assuming magnetic poles in the Sun's body, or any special magnetic forces in the solar rays, the central body may, as a powerful source of heat, excite magnetic activity on our planet.

The attempts that have been made to prove, by means of meteorological observations prosecuted for many years at *individual* spots, that one side of the Sun (for instance, the side which was turned toward the Earth on the 1st of January, 1846) possesses a more intense heating power than the opposite one,* have not led to more reliable results than the older Greenwich observations of Maskeleyne, which were supposed to prove that the Sun had decreased in diameter.

The observations made by Counselor Schwabe, of Dessau, for reducing the periodicity of the Sun's spots to definite numerical relations, appear to have a surer foundation. No astronomer of the present day, however admirable may have been his instruments, could have devoted his attention more continuously to this subject than Schwabe, who, during the long period of twenty-four years, frequently examined the Sun's disk upward of 300 days in the year. As his observations of the Sun's spots from 1844 to 1850 have not yet been published, I have presumed so far on our friendship as to request that he would communicate them to me, and at the same time answer a number of questions which I proposed to him. I will close this section of the *Physical Constitution of our Central Body* with the observations with which this observer has allowed me to enrich the astronomical portion of my work.

"The numbers contained in the following table leave no doubt that, at least from the year 1826 to 1850, the occurrence of spots has been so far characterized by periods of ten years, that its maxima have fallen in the years 1828, 1837, and 1848, and its minima in the years 1833 and 1843. I have had no opportunity," says Schwabe, "of acquainting myself with the older observations in a continued series, but I willingly concur in the opinion that this period may itself be further characterized by variability."†

* Compare Nervander of Helsingfors, in the *Bulletin de la Classe Physico-Mathém. de l'Acad. de St. Pétersbourg*, tom. iii., 1845, p. 30–32; and Buys-Ballot, of Utrecht, in Poggend., *Annalen der Physik*, vol lxviii., 1846, p. 205–213.

† I have distinguished by inverted commas the quotations from Schwabe's manuscript communications from p. 85–87. Only the observations of the years 1826 to 1843 have already been published in Schumacher's *Astron. Nachr.*, No. 495 (bd. xxi., 1844), p. 235.