http://www.geology.19thcenturyscience.org/books/1858-Humboldt-Cosmos/README.htm

or that of the star γ Ceti. But the duration of its periods is still more irregular: its mean is 331d. 20h., while its fluctuations have extended to a month; for the shortest time that ever elapsed from one maximum to the next was only 306 days, the longest, on the other hand, 367 days. These irregularities become the more remarkable when we compare the several occurrences of greatest brightness with those which would take place if we were to calculate these maxima on the hypothesis of a uniform period. The difference between calculation and observation then amounts to 50 days, and it appears that, for several years in succession, those differences are nearly the same, and in the same direction. This evidently indicates that the disturbance in the phenomena of light is one of a very long period. More accurate calculations, however, have proved that the supposition of one disturbance is not sufficient, and that several must be assumed, which may, however, all arise from the same cause; one of these recurs after 11 single periods; a second after 88; a third after 176; and a fourth after 264. From hence arises the formula of sines (given at p. 169, note *), with which, indeed, the several maxima very nearly accord, although deviations still exist which can not be explained by errors of observation.

(2) β Persei, Algol; R. A. 44° 36′, Decl. +40° 22′. Although Geminiano Montanari observed the variability of this star in 1667, and Maraldi likewise noticed it, it was Goodricke that first, in 1782, discovered the regularity of the variability. The cause of this is probably that this star does not, like most other variable ones, gradually increase and diminish in brightness, but for 2d. 13h. shines uniformly as a star of the 2·3d magnitude, and only appears less bright for seven or eight hours, when it sinks to the fourth magnitude. The augmentation and diminution of its brightness are not quite regular; but when near to the minimum, they proceed with greater rapidity; whence the time of least brightness may be accurately calculated to within ten to fifteen minutes. It is moreover remarkable that this star, after having increased in light for about an hour, remains for nearly the same period at the same brightness, and then begins once more perceptibly to increase Till very recently the duration of the period was held to be perfectly uniform, and Wurm was able to present all observations pretty closely by assuming it to be 2d. 21h. 48m. 58½s. However, a more accurate calculation, in which was comprehended a space of time nearly twice as long as that at Wurm's command, has shown that the period becomes gradually shorter. In the year 1784 it was 2d. 20h. 48m. 59·4s., and in the year 1842 only 2d. 20h. 48m. 55·2s. Moreover, from the most recent observations, it becomes very probable that this diminution of the period is at present proceeding more rapidly than before, so that for this star also a formula of sines for the disturbance of its period will in time be obtained. Besides, this diminution will be accounted for if we assume that Algol comes nearer to us by about 2000 miles every year, or recedes from us thus far less each succeeding year; for in that case his light would reach us as much sooner every year as the decrease of the period requires; *i. e.*, about the twelve thousandth of a second. If this be the true cause, a formula of sines must eventually be deduced.

(3) χ Cygni, R. A. 296° 12′, Decl. +32° 32′. This star also exhibits nearly the same irregularities as Mira. The deviations of the observed maxima from those calculated for a uniform period amount to forty days, but are considerably diminished by the introduction of a disturbance of 8½ single periods, and of another of 100 such periods. In its maximum this star reaches the mean brightness of a faint fifth magnitude, or