Its brightness at its minimum keeps the mean between ν and υ of the same constellation; in the maximum it does not quite reach that of λ. It takes 4d. 21h. to attain its full brightness, and 5d. 6h. for its diminution.

(22) β Pegasi, R. A. 344° 7′, Decl. +27° 16′. Its period is pretty well ascertained, but as to the course of its variation of light nothing can as yet be asserted.

(23) Pegasi R., R. A. 344° 47′, Decl. +9° 43′.

(24) Cancri S., R. A. 128° 50′, Decl. +19° 34′.

Of these two stars nothing at present can be said.

FR. ARGELANDER.

Bonn, August, 1850.

VARIATION OF LIGHT IN STARS WHOSE PERIODICITY IS UNASCERTAINED.—In the scientific investigation of important natural phenomena, either in the terrestrial or in the sidereal sphere of the Cosmos, it is imprudent to connect together, without due consideration, subjects which, as regards their proximate causes, are still involved in obscurity. On this account we are careful to distinguish stars which have appeared and again totally disappeared (as in the star in Cassiopeia, 1572); stars which have newly appeared and not again disappeared (as that in Cygnus, 1600); variable stars with ascertained periods (Mira Ceti, Algol); and stars whose intensity of light varies, of whose variation, however, the periodicity is as yet unascertained (as η Argûs). It is by no means improbable, but still does not necessarily follow, that these four kinds of phenomena* have perfectly similar causes in the photospheres of those remote suns, or in the nature of their surfaces.

As we commenced our account of new stars with the most remarkable of this class of celestial phenomena—the sudden appearance of Tycho Brahe's star—so, influenced by similar considerations, we shall begin our statements concerning the variable stars whose periods have not yet been ascertained, with the unperiodical fluctuations in the light of η Argûs, which to the present day are still observable. This star is situated in the great and magnificent constellation of the

* Newton (*Philos. Nat. Principia Mathem.*, ed. Le Seur et Jacquier, 1760, tom. iii., p. 671) distinguishes only two kinds of these sidereal phenomena. "Stellæ fixæ quæ per vices apparent et evanescunt, quæque paulatim crescunt, videntur revolvendo partem lucidam et partem obscuram per vices ostendere." The fixed stars, which alternately appear and vanish, and which gradually increase, appear by turns to show an illuminated and a dark side. This explanation of the variation of light had been still earlier advanced by Riccioli. With respect to the caution necessary in predicating periodicity, see the valuable remarks of Sir John Herschel, in his *Observations at the Cape*, § 261.