Period analysis of the Hα equivalent width in P Cygni

The large data set of Halpha equivalent width measurements (almost 23 years) enables an analysis of its (quasi)-periodic behavior (see fig. below). The data set is a compilation of professional data (Markova & Scuderi) and amateur data, gotten with partly very different spectrographs.
The Scargle-periodogram shows a main period of approx. 1200 days. This is fairly close to the period of the visual brightness of 1300 days, which has been often assumed / discussed in the past, and confirms a certain connection between both, as it has been found in our international campaign "Photometry and Spectroscopy" and has been published in AAVSO newsletter.The other small periods between 500 to 900 days are caused probably by sampling effects (alias periods).

Fig. 1: Hα-EW time behavior
Fig. 2: Periodogram
Fig. 3: Phase plot