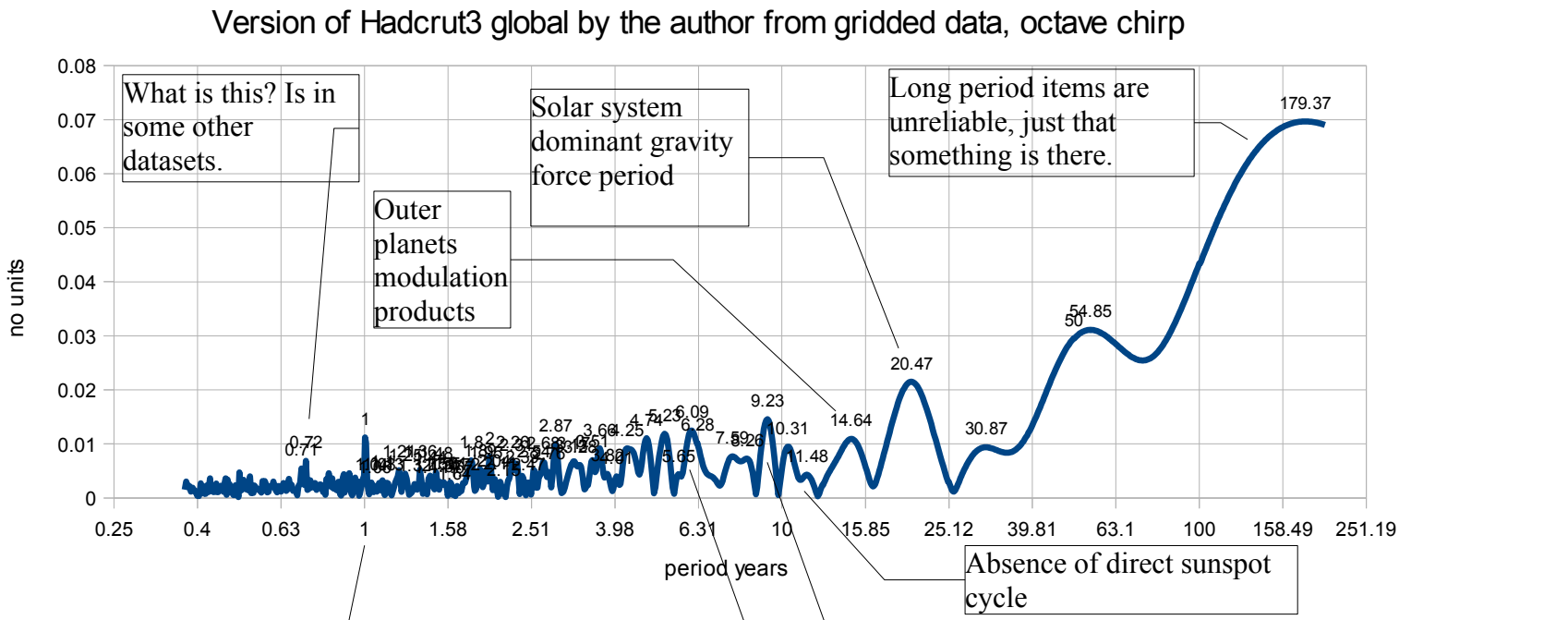


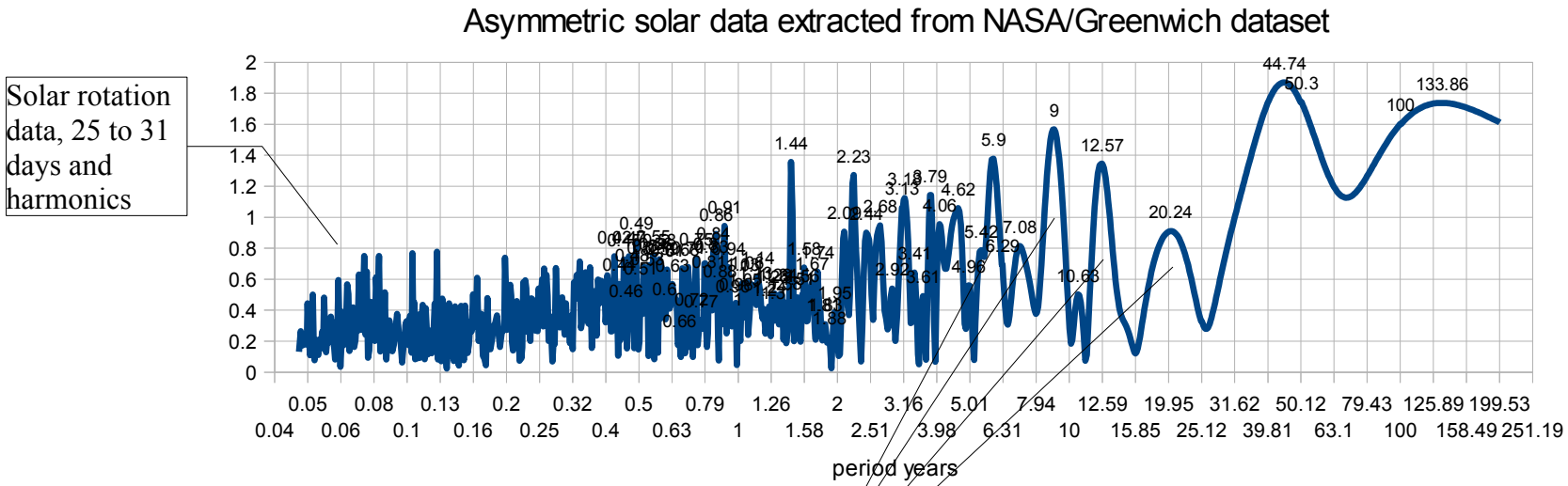
This is primarily a demo of octave chirp z-transform, kaiser-bessel windowed. Some items are roughly fixed period, some random moving around, some modulation, a lot we do not know.

Notes and please! This is guesses for comment.

Annual term either should be there or not. Deep previous analysis shows it has the wrong phase for earth/solar distance, more like northern hemisphere data leakage

Peak like that tends to be a fixed period item

A very close to 6 year term is known but amplitude slowly varies. We tend to get 3 years warm, 3 years cool, not huge but there.



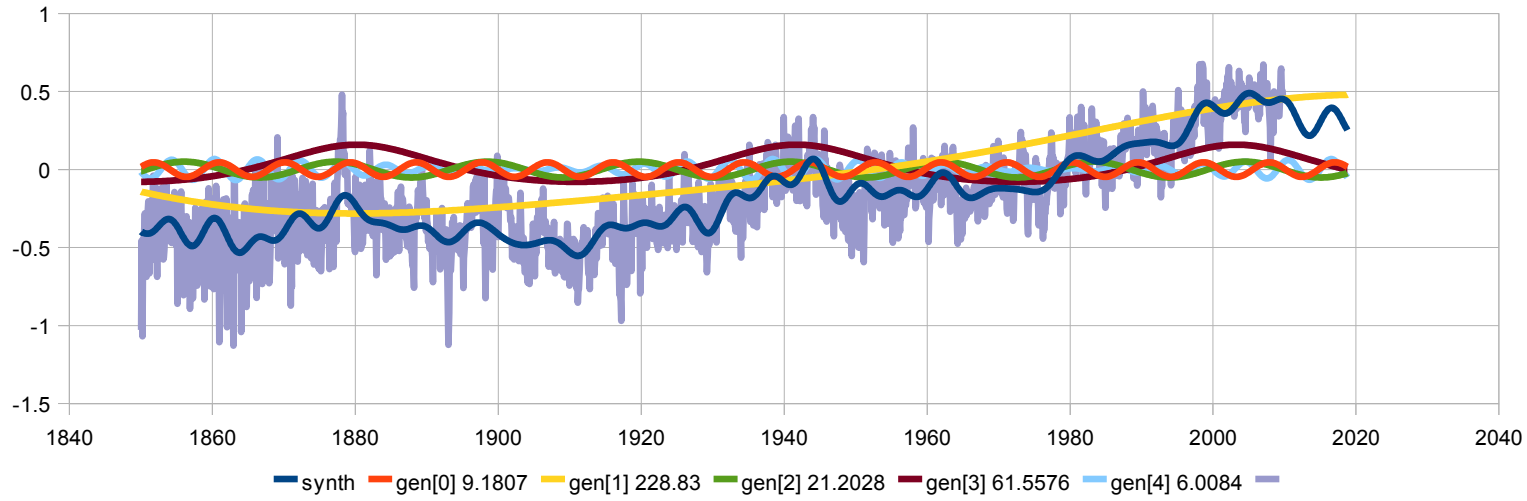
This shows an extreme spectrum range made practical by octave chirps. In practice this would not be normal usage. I've wiped some of the automatic data labels.

Note the absence of the normal sunspot cycle spectra. This is very dominant in other sunspot data.

The circa 45 year item when using software able to extract accurate phase and amplitude data shows a remarkable match to sea level satellite data, satellite UAH tropical over recent years. The phase lead sequence is: solar, air temperature, sea level.

The longest periods are suggestive of De Vries cycles, which tend to be part of a very long period sequence.

It might be an interesting exercise to extract the accurate data on the indicated terms.



This is what a quick analysis, decomposition is done using other software and the model produced.

The dark blue line is a synthesis of the dataset using a few terms, some in this case complex. Note how the 6 year and 9 year match up with the data.

I've show the transform individual components, sum plus an offset is the dark blue line. Complex amplitude modulation has been allowed and asymmetric response in one instance because it is known to give a better fit.

Note that this is **not** the official version of global temperature. The difference is probably mostly to do with how missing data is handled and the absence of statistics based changes to the data. (weighted mean and using identical extract software for UAH or RSS produces a clone of the official data (data truncation with published excepted))