

## **Her X-1: correlated variability of the 1.24 sec and the 35 day periods**

Ruediger Staubert (IAA Tübingen), Susanne Schandl (IAAT)

Both the 1.24 s pulsational period and the 35 day turn-on period of Her X-1 show long-term variability. It is shown that both periods vary in a highly correlated way: when the spin-up rate drops the 35 day precessional period gets shorter. This correlation is most evident on long time scales ( $\sim 2000$  days), e.g. during two extended spin-down episodes, but also on shorter timescales (a few 100 days) on which quasi-periodic variations are apparent. The likely common cause are variations of the rate of mass accretion onto the neutron star. A physical explanation within the framework of the coronal wind model is proposed. Further details on the jitter of the 35 day clock will be discussed. Recently, a third 'extended low' has been observed which may allow further insight into a possible correlation of such events with spin-down episodes.