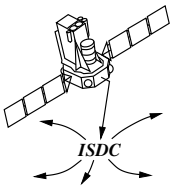

I N T E G R A L
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UNIVERSITÉ DE GENÈVE

ASTROPHYSICS SEMINAR

Tuesday, July 15, 2003 at 11:00

The variable Cyclotron Line in GX 301-2

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Abstract. We present observations of the High Mass X-ray Binary GX 301-2 taken in 2000 November with the Rossi X-ray Timing Explorer. The neutron star orbits its companion, the B1 Ia+ hyper giant Wray 977, in an eccentric 41.5 day orbit. During periastron passage the neutron star passes through the outer atmosphere in a height of 0.1 R_{star} above Wray 977, resulting in strong X-ray flaring activity.

We observed the system for ∼200 ksec during the pre-periastron flare and the actual periastron passage of the neutron star. To model the spectrum we use a power law with the Fermi Dirac cutoff and a cyclotron line at higher energies plus either a reflection component or a heavily absorbed partial covering component. Phase resolved spectra show that the energy and the depth of the cyclotron resonant scattering feature vary strongly with pulse phase: It is deepest in the rise of the secondary pulse, while it is relatively weak in the rise of the main pulse. The energy varies by more than 25% from ∼29 keV to ∼39 keV.

Additional Information

The seminars are given in the ISDC "Pavillon" building
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