Observations of the X-ray pulsar V 0332+53 by the INTEGRAL and RXTE observatories and RTT-150 telescope

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In this work we present results of observations of the transient X-ray pulsar V0332+53 with the INTEGRAL and RXTE observatories in a broad energy band 1–100 keV performed on December 2004 – January 2005 during a powerful outburst with the peak flux about 1 Crab in the 2–12 keV energy band [1].

The pulse profile dependences on the source luminosity and energy band were revealed; particularly, the source pulse profile becomes one-peaked instead of two-peaked at energies above 25 keV with the object luminosity decreasing.

The source average spectrum can be well fitted by a simple power-law model with a photoelectric absorption at low energies, high energy cutoff and cyclotron line with two higher harmonics.

Pulsar observations with the Russian-Turkish optical telescope RTT-150 were performed on January 2005 simultaneously with X-ray observatories. During these observations the brightness of the object in the R filter was constant ($\approx$14.12 magnitude). Based on a fast photometry we cannot make at the moment a final conclusion about possible pulsations in the optical band. Estimations of the reflected X-rays contribution to the optical radiation are given.

More detailed analysis of the INTEGRAL and RXTE data is now in progress.

References

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