

New timing properties of 4U 1820-30

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4U 1820-30 is a Galactic X-ray binary with an 11-min orbital period. This period is the second shortest known of any binary. The binary consists of a low-mass white dwarf and a neutron star, separated by only about 100 000 km. The system loses its angular momentum by emission of gravitational waves, which leads to a high rate of mass transfer from the white dwarf onto the neutron star. This, in turn, leads to strong X-ray emission, which is modulated at the 11-min. period. There is also a very strong 170-d modulation, which is probably due to the presence of a 3rd, much more remote, star in the system. The third star modulates the eccentricity of the inner orbit, resulting in the variable rate of the mass transfer. I will report a discovery of a new property of the X-ray variability, which strongly depends on the phase of the 170-d modulation. The discovered effect can be explained by dynamics of the triple system.