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# The mass of the compact object in the low-mass X-ray binary 2S 0921-630

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## Abstract

We interpret the observed radial-velocity curve of the optical star in the low-mass X-ray binary 2S 0921-630 using a Roche model, taking into account the X-ray heating of the optical star and screening of X-rays coming from the relativistic object by the accretion disk. Consequences of possible anisotropy of the X-ray radiation are considered. We obtain relations between the masses of the optical and compact (X-ray) components, m v and m x , for orbital inclinations i = 60°, 75°, and 90°. Including X-ray heating enabled us to reduce the compact object's mass by ~0.5-1 M ⊙, compared to the case with no heating. Based on the K0III spectral type of the optical component (with a probable mass of m v ≈ 2.9 M ⊙), we concluded that m x ≈ 2.45-2.55 M ⊙ (for i = 75°-90°). If the K0III star has lost a substantial part of its mass as a result of mass exchange, as in the V404 Cyg and GRS 1905+105 systems, and its mass is m v ≈ 0.65-0.75 M ⊙, the compact object's mass is close to the standard mass of a neutron star, m x ≈ 1.4 M ⊙ (for i = 75°-90°). Thus, it is probable that the X-ray source in the 2S 0921-630 binary is an accreting neutron star. © Pleiades Publishing, Inc., 2006.

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