

Astronomy Reports 2016 vol.60 N12, pages 1029-1034

The mass of the black hole in the X-ray binary LMC X-1

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Abstract

© 2016, Pleiades Publishing, Ltd. A dynamical estimate of the mass of the black hole in the LMC X-1 binary system is obtained in the framework of a Roche model for the optical star, based on fitting of the He I 4471 Å and He II 4200 Å absorption lines assuming LTE. The mass of the black hole derived from the radial-velocity curve for the He II 4200 Å line is $m_x = 10.55 M_\odot$, close to the value found earlier based on a model with two point bodies [1].

<http://dx.doi.org/10.1134/S1063772916120015>
