

Search for optical counterparts to isolated neutron stars with the 6-meter Telescope of SAO RAS

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Some results of the program for search and study of optical counterparts to pulsars and candidates to isolated neutron stars (INSs) with the 6-meter Telescope of SAO RAS are presented. Broadband observations of close and/or highly energetic (high velocity) neutron stars and pulsars, along with studies in the H α line, were carried out with the prime focus focal reducer SCORPIO in the image mode. No optical counterparts have been found to RX J0007+7302, PSR B0355+54, PSR B0823+26, and PSR B2334+61; the upper limits on the detection level in the R band are 26.^m2, 25.^m4, 26.^m1, 24.^m5 and 25.^m6, respectively. Two faint objects have been found in the circle of the RBS 1774 position using the data of XMM-Newton observations. Based on the faintness ($B=26^m$) and colors of the detected objects ($(B-V)$ and $(V-R)$ are ≈ 0.6 , 0.1, 0.5 and 0.3, respectively) we do not rule out that one of them can be an optical counterpart to this INS. Further deep multiband and polarimetric studies are needed to clarify this point.