

Search for Optical Counterparts to Isolated Neutron Stars at the 6meter Telescope of SAO RAS

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Some results of the program for search for and studies of optical counterparts to pulsars and candidates to isolated neutron stars (INS) at the 6m telescope SAO RAS are presented. Broadband observations of close and/or highly energetic (high velocity) NSs and pulsars along with studies in the $H\alpha$ 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, upper limits on the level of detection 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 from XMM-Newton observations. Based on the faintness ($B=26m$) and colours of the objects detected ($(B-V)$ and $(V-R)$ are of about 0.6, 0.1, 0.5 and 0.3, accordingly) we do not ruled out that one of them can be an optical counterpart! to this INS. Futher deep multiband and polarimetric studies are needed.