International Astronomical Union
Commission G1

# BIBLIOGRAPHY OF CLOSE BINARIES

## No. 116

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g. $\gamma$-ray. i. infrared. m. microwave. o. optical
r. radio u. ultraviolet x. x-ray

**1. Photometric data**

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a. Abstract b. Addenda or errata

**Abbreviations**

| | | | | | |
|---|---|---|---|---|---|
| AD | accretion disk | IP | intermediate polar | RV | radial velocity |
| BH | black hole | LC | light curve | SB | spectroscopic binary |
| CB | close binary | LMXB | low-mass x-ray binary | WD | white dwarf |
| CV | cataclysmic variable | NS | neutron star | WR | Wolf-Rayet star |
| EB | eclipsing binary | PSR | pulsar | GW | gravitational wave |
| HMXB | high-mass x-ray binary | QPO | quasi-periodic oscillation | | |

## Individual Stars

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|---|---|
| OT And | *Fekel, F.C. et al.* (6 authors) 2022, AJ 164, 224. (1a, 2a, 5abcde) High-dispersion spectroscopy and $BV$ photometry of the A-type EB. |
| V455 And | *Dudnik, A.A. et al.* (5 authors) 2023, AstBu 78, 25. (2, 5eg) The WZ Sge-type dwarf nova in quiescent state. |
| V724 And | *Wang, S. et al.* (4 authors) 2022, RAA 22, 115004. (1ao, 2co, 5abcegj) Magnetic-activity contact binary. |
| $\pi$ Aqr | *Tsujimoto, M. et al.* (4 authors) 2022, PASJ 75, 177. (2adox, 5deij) X-ray and optical spectroscopic study of the $\gamma$ Cas analog source. |
| V1294 Aql | *Harmanec, P. et al.* (24 authors) 2022, A&A 666, A136. (1abo*, 2acdo, 5d) A bad boy among Be stars or an important clue to the Be phenomenon? |
| V1343 Aql<br>(SS 433) | *Fogantini, F.A. et al.* (5 authors) 2023, A&A 669, A149. (2x, 5j) Precessional evolution of the HMXB jet-disk system.<br>*Inoue, H.* 2022, PASJ 74, 1263. (5ij, 8ad) Steady jet ejections from the innermost region of advection-dominated accretion flow around the BH.<br>*Kayama, K. et al.* (9 authors) 2022, PASJ 74, 1143. (2dx, 5ij) X-ray structure and spectral variation of non-thermal emission of the west SS 433/W 50 region. |
| V1408 Aql<br>(4U 1957+115) | *Mudambi, S.P. et al.* ( 4 authors) 2022, MNRAS 517, 4489. (1ax, 2dx, 5ij) Spectral characteristics of the BH binary. |
| V1487 Aql<br>(GRS 1915+105) | *Alberti, T. et al.* (4 authors) 2022, MNRAS 517, 3568. (1ax, 2dx, 5ij) Stochastic dynamical description of the HMXB $\kappa$ and $\rho$ bursting classes.<br>*Mikusincova, R. et al.* (8 authors) 2023, MNRAS 519, 6138. (3bx, 8a) X-ray polarimetry as a tool to measure the BH spin: IXPE simulations.<br>*Vincentelli, F.M. et al.* (24 authors) 2023, Nature 615, 45. (1irux, 5i) A BH and NS shared accretion instability. |
| V801 Ara<br>(4U 1636−536) | *Pinaki, R., Beri, A., Mondal, A.S.* 2022, JApA 43, 45. (1ax, 2dx, 5ij) Thermonuclear X-ray bursts with short-recurrence times.<br>*Wiśniewicz, M. et al.* (5 authors) 2023, ApJ 944, 214. (1x) QPOs. |
| V821 Ara<br>(GX 339-4) | *Peirano, V. et al.* (4 authors) 2023, MNRAS 519, 1336. (1ax, 2dx, 5ij) Dual-corona Comptonization model for the BH LMXB type-b QPOs. |
| RS Ari | *Yücel, G., Bakiş, V.* 2022, MNRAS 516, 2486. (1ao, 2a, 5cdeg, 8c) Detailed evolutionary model. |
| V455 Aur | *Yücel, G., Bakiş, V.* 2022, MNRAS 516, 2486. (1ao, 2a, 5cdeg, 8c) Detailed evolutionary model. |
| V749 Aur | *Chang, L.-F. et al.* (4 authors) 2022, PASJ 74, 1421. (1ao, 5abce) Poor-thermal contact binary. |
| V808 Aur | *Sytov, A.Y., Sobolev, A.V.* 2022, ARep 66, 936. (7c, 8) Synthetic Doppler tomography of the eclipsing polar. |
| V849 Aur | *Pejcha, O. et al.* (8 authors) 2022, A&A 667, A53. (1ao, 2co, 5abceifgk) Misaligned orbits and period resonance in the double-eclipsing EB. |
| ZZ Boo | *Southworth, J.* 2023, Obs 143, 19. (1ao, 2ao*, 5e) Rediscussion of EBs Paper 12: An F-type twin system. |
| CR Boo | *Boneva, D. et al.* (7 authors) 2022, Ap&SS 367, 110. (1ao) AM CVn system humps and superhumps, and outburst parameters. |
| EW Boo | *Kim, H.-Y. et al.* (7 authors) 2022, AJ 164, 216. (1a, 2a, 5abcde) Short-period Algol with a $\delta$ Sct pulsator. |

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| AN Cam | *Yücel, G., Bakiş, V.* 2022, MNRAS 516, 2486. (1ao, 2a, 5cdeg, 8c) Detailed evolutionary model. |
| AS Cam | *Kozyreva, V.S., Kusakin, A.V., Bogomazov, A.I.* 2022, PZ 42, 10. (1ao) EB LCs. |
| BY Cam | *Mason, P.A. et al.* (10 authors) 2022, ApJ 938, 142. (1ao, 8d) Magnetic valve at L1 position. |
| HM Cnc | *Munday, J. et al.* (18 authors) 2023, MNRAS 518, 5123. (1ao, 2cu, 5ab, 8c) Two decades of optical timing of the shortest-period double WD system. |
| IQ CMa | *Ulaş, B., Ulusoy, C.* 2023, MNRAS 518, 4180. (1ao*, 5c) Algol-type EB with a $\delta$ Scuti component. |
| $\eta$ Car | *Abraham, Z. et al.* (5 authors) 2022, MNRAS 517, 47.(2cr) Telluric absorption lines in the ALMA spectra.<br>*Strawn, E. et al.* (17 authors) 2023, MNRAS 519, 5882. (2aco, 5d) Orbital kinematics over three periastra with a possible detection of the secondary's motion. |
| QZ Car | *Brož, M. et al.* (19 authors) 2022, A&A 666, A24. (2ao*, 4co*, 5e, 8) N-body model.<br>*Mayer, P. et al.* (21 authors) 2022, A&A 666, A23. (1abo*, 2ao*, 5cde) Hot quadruple system with an EB (Ac1+Ac2) and an SB (Aa1+Aa2). |
| V395 Car<br>(2S 0921−630) | *Yoneyama, T., Dotani, T.* 2023, PASJ 75, 30. (2dx*, 5gi) The eclipsing LMXB AD corona. |
| RX Cas | *Mennickent, R.E. et al.* (9 authors) 2022, A&A 666, A51. (1aio, 5abc) Cyclic changes in the interacting binary. |
| AO Cas | *Abdul Qadir, Y. et al.* (5 authors) 2023, A&A 670, A176. (3ao, 5c) High-precision broadband linear polarimetry of the early-type binary. |
| V523 Cas | *Yang, Y. et al.* (4 authors) 2022, RAA 22, 125012. (1ao, 2ao, 5abcegj) Light and period variations of the K-type contact binary. |
| V608 Cas | *Lloyd, C.* 2022, Obs 142, 256. (1ao, 5b) Is this a quadruple system? |
| V1022 Cas | *Fekel, F.C. et al.* (6 authors) 2022, AJ 164, 224. (1a, 2a, 5abcde) High-dispersion spectroscopy and $BV$ photometry of the F-type EB. |
| V1264 Cas | *Alenazi, M.S., Elkhateeb, M.M.* 2022, Ap 65, 470. (1a, 5ce) EB LC modeling. |
| V779 Cen<br>(Cen X-3) | *Bachtar, R. et al.* (4 authors) 2022, MNRAS 517, 5138. (1ax, 2dx, 4ij) AstroSat timing and spectral studies in multiple luminosity states.<br>*Liu, Q. et al.* (9 authors) 2022, MNRAS 516, 5579. (1x, 5bcg) Detection of a QPO.<br>*Tamba, T. et al.* (6 authors) 2023, ApJ 944, 9. (1x, 2x) Orbital- and spin-phase variability in the X-ray emission from the accreting PSR.<br>*Torregrosa, Á. et al.* (5 authors) 2022, RMxAA 58, 355. (2cdx, 5i) The HMXB seen by MXI over six years.<br>*Tsygankov, S.S. et al.* (99 authors) 2022, ApJL 941, L14. (3ax) Relationship between polarization and activity.<br>*Yang, W. et al.* (7 authors) 2023, MNRAS 519, 5402. (2dx, 5i) Two cyclotron resonance scattering features in the X-ray PSR by Insight-HXMT. |
| V822 Cen<br>(Cen X-4) | *van den Eijnden, J. et al.* (6 authors) 2022, MNRAS 516, 2641. (1rx, 5cegi) Radio observations at low accretion rates. |
| V830 Cen<br>(1E 1145.1−6141) | *Ghising, M. et al.* (5 authors) 2022, MNRAS 517, 4132. (1ax, 2dx, 5ij) HMXB. |

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| VW Cha | *Zsidi, G. et al.* (6 authors) 2022, ApJL 941, 177. (1io, 2ao) Accretion variability. |
| QR Com | *Wang, S. et al.* (4 authors) 2022, RAA 22, 115004. (1ao, 2co, 5abcegj) Magnetic-activity contact binary. |
| RT Cru | *Pujol, A. et al.* (12 authors) 2023, A&A 670, A32. (1ux, 2co, 5j) Paused accretion in the symbiotic binary. |
| BP Cru (GX 301-2) | *Simaz Bunzel, A. et al.* (4 authors) 2023, A&A 670, A80. (8c) Evolution of the eccentric HMXB. |
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| V404 Cyg | *Fender, R.P. et al.* (11 authors) 2023, MNRAS 518, 1243. (1ai*x*, 4cr, 5j) Particle acceleration and kinetic feedback from the HMXB. |
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| V1687 Cyg (WR 140) | *Eatson, J.W., Pittard, J.M., Van Loo, S.* 2022, MNRAS 517, 4705. (8abd) Dust growth in the episodic WCd system. |
| V2246 Cyg (EXO 2030+375) | *Tamag, R. et al.* (5 authors) 2022, MNRAS 515, 5407. (1x, 5cgi) Spectral and timing analysis. |
| V2840 Cyg | *Pothuneni, R.R., Devarapalli, S.P., Jagirdar, R.* 2023, RAA 23, 025017. (1ao*, 2co, 5abcegj, 6a) Contact binary. |
| $\alpha$ Eri (Achernar) | *Kervella, P. et al.* (19 authors) 2022, A&A 667, A111. (2ao, 3bio, 4cio, 5dekj) The binary system of the spinning-top Be star. |
| KT Eri | *Schaefer, B.E. et al.* (4 authors) 2022, MNRAS 517, 3864. (1aio, 2ao*, 5bdegi) Recurrent nova with a 40-50 yr recurrence time-scale. |
| U Gru | *Johnston, C. et al.* (7 authors) 2023, A&A 670, A167. (1ao*, 2ao) Tidal perturbations and pulsation eclipse mapping in the hierarchical triple. |
| 89 Her | *Gallardo Cava, I. et al.* (5 authors) 2023, A&A 671, A80. (4cr, 5j) The nebula around the binary post-AGB star. |
| AM Her | *Ridder, M.E. et al.* (4 authors) 2023, MNRAS 519, 5922. (1x, 4cr) Radio detection of the unusual polar. |
| V934 Her (4U 1700+24) | *Ablimit, I.* 2023. MNRAS 519. 1327. (8bcd) A promising formation channel for the symbiotic XB. |
| V1494 Her (CRTS J172718.0+431624) | *Papageorgiou, A. et al.* (6 authors) 2023, AJ 165, 80. (1a, 5bc) Ultra-short-period contact EB. |
| V664 Lac | *Alenazi, M.S., Elkhateeb, M.M.* 2022, Ap 65, 470. (1a, 5ce) EB LC modeling. |
| HI Leo | *Yang, Y. et al.* (4 authors) 2022, RAA 22, 125012. (1ao, 2ao, 5abcaegj) Light and period variations of the K-type contact binary. |
| V373 Lib (1SWASP J150957.56−115308.4) | *Barani, C. et al.* (6 authors) 2022, RMxAA 58, 237. (1ao, 2ao, 5abcde) Overcontact binary. |
| HT Lyn | *Meng, Z.-B. et al.* (5 authors) 2022, RAA 22, 115015. (1ao, 5abce) Semi-detached near-contact binary with stable orbital period. |

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| IR Lyn | *Meng, Z.-B. et al.* (5 authors) 2022, RAA 22, 115015. (1ao, 5abce) Semi-detached near-contact binary with stable orbital period. |
| V563 Lyr | *Nelson, R.H.* 2022, RMxAA 58, 223. (1ao, 2ao, 5abcde) Overcontact binary. |
| AW Men | *Ulaş, B., Ulusoy, C.* 2023, MNRAS 518, 4180. (1ao*, 5c) Algol-type EB with a $\delta$ Scuti component. |
| AT Mic | *Kuznrysov, A.A. et al.* (4 authors) 2023, RAA 23, 015006. (1aux, 5ij) Flares. |
| V616 Mon (1A 0620−00) | *dePolo, D.L. et al.* (8 authors) 2022, MNRAS 516, 4640. (1r, 5cgi) Flickering radio jet from the quiescent BH XB. |
| V838 Mon | *Liimets, T. et al.* (18 authors) 2023, A&A 670, A13. (1ao, 2bo) A slow waking up of Sleeping Beauty? |
| GV Nor | *Sürgit, D. et al.* (8 authors) 2023, MNRAS 519, 4699. (1ao, 2ao, 5cdefgk) Apsidal motion and absolute parameters. |
| V381 Nor | *Rink, K.Caiazzo, I., Heyl, J.* 2022, MNRAS 517, 1389. (1ax, 8) Testing general relativity using QPOs from the BH XB. |
| RS Oph | *Molaro, P. et al.* (10 authors) 2023, MNRAS 518, 2614. (2cou, 5gh) $^7$Be detection in the recurrent nova 2018 outburst.<br>*Munari, U. et al.* (8 authors) 2022, A&A 666, L6. (2co, 4cr, 5j) Bipolar ejecta from the 2021 nova outburst.<br>*Ness, J.-U. et al.* (12 authors) 2023, A&A 670, A131. (2x, 5j) High-resolution 2006 and 2021 X-ray spectra revealing the SSS variability cause.<br>*Rushton, M.T. et al.* (7 authors) 2022, MNRAS 517, 2526. (2cdi, 5ij) Rise and fall of silicate dust following the 2006 outburst. |
| V2400 Oph | *Ridder, M.E. et al.* (4 authors) 2023, MNRAS 519, 5922. (1x, 4cr) Radio detection of the unusual IP. |
| KN Per | *Gao, X.-Y. et al.* (9 authors) 2022, PASP 134, 114202. (1a, 2a, 5abc) Long-period low-mass-ratio CB. |
| V518 Per (GRO J0422+32) | *Casares, J. et al.* (14 authors) 2022, MNRAS 516, 2023. (1x, 5cgi) Evidence for a low-mass BH in the system. |
| SZ Psc | *Karmakar, S. et al.* (4 authors) 2023, MNRAS 518, 900. (1aoux, 2dx, 5gj) Superflare and coronal properties of the RS CVn-type EB. |
| TY Psc | *Dudnik, A.A. et al.* 5 authors 2023, AstBu 78, 25. (2, 5eg) Parameters of the SU UMa-type dwarf nova in quiescent state. |
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| V3890 Sgr | *Evans, A. et al.* (7 authors) 2022, MNRAS 517, 6077. (2ci, 5ghij) The 2019 eruption reveals separation into equatorial and polar winds. |
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| V4142 Sgr | *Rosales, J.A. et al.* (7 authors) 2023, A&A 670, A94. (1ao*, 2au, 5cd) Double periodic variable with an accretor surrounded by the AD's atmosphere. |
| V4580 Sgr (SAX J1808.4−3658) | *Illiano, G. et al.* (22 authors) 2023, ApJL 942, L35. (1x, 2x) Accreting millisecond X-ray PSR 2022 outburst; orbit may be shrinking. |

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| V4634 Sgr (GS 1826−238) | *Capitanio, F. et al.* (97 authors) 2023, ApJ 943, 129. (1x, 2x, 3b) Polarization properties of the weakly magnetized NS XB in the high soft state. |
| V4641 Sgr | *Shaw, A.W. et al.* (10 authors) 2022, MNRAS 516, 124. (1x, 5cegi) High resolution X-ray spectroscopy. |
| V5097 Sgr (WR 104) | *Soulain, A. et al.* (5 authors) 2023, MNRAS 518, 3211. (8abd) Dust nucleation in the colliding-wind WR system. |
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| | *Williams, R. et al.* (7 authors) 2022, ApJL 941, 138. (2acio) Multiepoch coverage of the sustained high-luminosity nova. |
| V818 Sco (Sco X-1) | *Abbott, R. et al.* (1695 authors) 2022, ApJL 941, L30. Model-based cross-correlation search for GWs from the LMXB in LIGO O3 data. |
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| V881 Sco | *Sürgit, D. et al.* (8 authors) 2023, MNRAS 519, 4699. (1ao, 2ao, 5cdefgk) Apsidal motion and absolute parameters. |
| V907 Sco | *Zasche, P. et al.* (4 authors) 2023, AJ 165, 81. (1a, 2a, 5abcd) Unique triple system switched to eclipsing mode again. |
| V1033 Sco (GRO J1655−40) | *Rink, K.Caiazzo, I., Heyl, J.* 2022, MNRAS 517, 1389. (1ax, 8) Testing general relativity using QPOs from the BH XB. |
| | *Tomaru, R., Done, C., Mao, J.* 2023, MNRAS 518, 1789. (2dgx*, 5ij) The wind from the BH AD in the LMXB. |
| V490 Sct | *Volkov, I.M., Kravtsova, A.S.* 2022, AJ 164, 194. (1a, 5abcf) Apsidal motion and physical parameters. |
| V659 Sct (Nova Sct 2019) | *Munari, U., Righetti, G.L., Dallaporta, S.* 2022, MNRAS 516, 4805. (1ao, 2a, 5cdeg) Multiple flares caused by mass ejection episodes. |
| NP Ser (GX 17+2) | *Wang, D.-H., Zhang, C.-M., Lei, Y.-J.* 2022, RAA 22, 125010. (1ax*, 5i) AD structure and X-ray radiation from kHz QPOs and cross-correlations. |
| DQ Tau | *Pouilly, K. et al.* (6 authors) 2023, MNRAS 518, 5072. (2ao, 3bo, 5dfgi) Accretion, magnetic fields and apsidal motion in the pre-main-sequence binary. |
| V471 Tau | *Kundra, E. et al.* (7 authors) 2022, MNRAS 517, 5358, (1ao, 5ab) Variability of eclipse timings. |
| V725 Tau (1A 0535+262) | *Chhotaray, B. et al.* (6 authors) 2023, MNRAS 518, 5089. (2cdox, 5i) The Be/XB 2020 outburst. |
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| | *Ma, R. et al.* (24 authors) 2022, MNRAS 517, 1988. (1ax, 5i) mHz QPOs challenge current models. |
| | *van den Eijnden, J. et al.* (9 authors) 2022, MNRAS 516, 4844. (1r, 5cgi) Radio monitoring. |
| V773 Tau | *Kenworthy, M.A. et al.* (12 authors) 2022, A&A 666, A61. (1ao, 5cijk, 8b) Eclipse of the Aa-Ab CB by the B component disk. |
| QV Tel (HR 6819) | *Romagnolo, A. et al.* (5 authors) 2022, A&A 667, A55. (8c, 9) Testing the presence of a dormant BH in the inner binary. |
| KZ TrA (4U 1626−673) | *Marshall, H.L. et al.* (95 authors) 2022, ApJ 940, 70. (2dx, 3ax) Two-component models of the pulsed emission. |

BG Tri — *Stefanov, S.Y. et al.* (4 authors) 2022, MNRAS 516, 2775. (1ao, 5bceg) Detailed photometric study.

ZZ UMa — *Southworth, J.* 2022, Obs 142, 267. (1ao, 2ao*, 5e) Rediscussion of EBs Paper 11: a solar-type system with total eclipses and a radius discrepancy.

HU Vel (PSR J0835−4510) — *Xie, F. et al.* (93 authors) 2022, Nature 612, 658. (3bx, 5j) Vela PSR wind nebula X-rays are polarized to near the synchrotron limit.
*Yan, S.-Z. et al.* (5 authors) 2023, ChA&A 47, 91. (1r, 5c) Observations of a single pulse.

QS Vir — *Ridder, M.E. et al.* (4 authors) 2023, MNRAS 519, 5922. (1x, 4cr) Radio detection of the unusual CV.

W Vol — *Ulaş, B., Ulusoy, C.* 2023, MNRAS 518, 4180. (1ao*, 5c) Algol-type EB with a $\delta$ Scuti component.

QU Vul — *Santamaría, E. et al.* (5 authors) 2022, MNRAS 517, 2567. (2co, 5j) Integral field spectroscopy case study of a nova shell.

V406 Vul (XTE J1859+226) — *Motta, S.E. et al.* (8 authors) 2022, MNRAS 517, 1469. (1ax*) BH mass and spin through the relativistic precession model using a QPO triplet.
*Yanes-Rizo, I.V. et al.* (11 authors) 2022, MNRAS 517, 1476. (1aio, 2abio, 5bcde) A refined dynamical mass for the BH and companion.

## HR, HD, HDE, BD, CoD, CPD, SAO Objects

HD 3191 — *Martí, J. et al.* (5 authors) 2023, Ap&SS 368, 7. (2ao, 5b) Hints in the RV data of the XB photometric period with the Joan Oró telescope.

HD 5980 — *Koenigsberger, G. et al.* (8 authors) 2022, RMxAA 58, 403. (2adou, 5dgj) The WR system wind-wind collision.

HD 71636 — *Fekel, F.C. et al.* (6 authors) 2022, AJ 164, 224. (1a, 2a, 5abcde) High-dispersion spectroscopy and $BV$ photometry of the F-type EB.

HD 73900 — *Abu-Dhaim, A. et al.* (6 authors) 2022, AcA 72, 171. (2d, 5d) Physical parameters of the binary system.

HD 152147 — *Putkuri, C. et al.* (7 authors) 2022, MNRAS 517, 3101. (2ao, 5degk) The massive supergiant SB2 orbit: a new target for interferometry.

HD 187276 (KIC 10417986) — *Feng, G.-J. et al.* (12 authors) 2022, RAA 22, 105005. (1ao*, 2aco, 5bcdegh) Spectroscopic confirmation of the nature of the binary with a $\delta$ Sct component.

HD 265435 — *Qi, W.-Z., Liu, D.-D., Wang, B.* 2023, RAA 23, 015008. (8bcd) Type Ia SN progenitor candidate.

HR 6819 — (see QV Tel)

BD+47°378 — *Hong, K. et al.* (6 authors) 2022, AJ 164, 121. (1a, 2a, 5cde) EB containing a $\delta$ Sct pulsating star.

CPD−29°2176 — *Richardson, N.D. et al.* (9 authors) 2023, Nature 614, 45. (2aodx, 5bd) HMXB descended from an ultra-stripped SN.

CPD−54°810 — *Miller, N.J. et al.* (5 authors) 2022, MNRAS 517, 5129. (1aou, 2ao, 5bcdeg) Fundamental effective temperature of the detached EB.

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| CPD−65°264 | *Hernandez, M.S. et al.* (9 authors) 2022, MNRAS 517, 2867. (1ao*, 2aou, 5bcdeg) The WD binary pathways survey – VIII. A post-common envelope binary with a massive WD and an active G-type secondary star. |

## Objects with names including RA and DEC

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| 2MASS J00073480−1605314 (Gaia 0007−1605) | *Lagos, F. et al.* (4 authors) 2023, MNRAS 519, 2302. (8c) Common envelope evolution and triple dynamics as potential pathways to form the inner WD + brown dwarf binary of the triple system. |
| XMMU J001446.8−391123 | *Robba, A. et al.* (17 authors) 2022, MNRAS 515, 4669. (1x, 5cgi) A transient ULX in NGC 55. |
| PNV J00444033+4113068 | *Tampo, Y. et al.* (16 authors) 2022, PASJ 74, 1287. (1ao, 2co, 5abci) WZ Sge-type dwarf nova. |
| 1SWASP J010313.78+352903.7 | *Wang, Z., Zhu, L., Yuan, K.* 2023, RAA 23, 015003. (1ao, 5abcgi) Totally eclipsing EB in poor thermal contact. |
| HE 0107−5240 | *Aguado, D.S. et al.* (25 authors) 2022, A&A 668, A86. (2ao, 5deg) The CEMP-no star with [Fe/H] $\leq -4.5$ is an SB with a period of $\approx 36$ yr. |
| RX J0209.6−7427 | *Hou, X. et al.* (13 authors) 2022, ApJ 938, 149. (2dx) Main pulsed X-ray emission from the HMXB emission column fan beam.<br>*Liu, J. et al.* (7 authors) 2022, MNRAS 517, 3354. (2dx, 5i) Super-Eddington accretion. |
| Swift J0243.6+6124 | *Liu, J. et al.* (7 authors) 2022, MNRAS 517, 3354. (2dx, 5i) Super-Eddington accretion.<br>*Liu, W. et al.* (11 authors) 2022, A&A 666, A110. (1aio, 2dox, 5i) HMXB multiwavelength observations. |
| GRO J0422+32 | (see V518 Per) |
| SWIFT J0503.7−2819 | *Rawat, N. et al.* (5 authors) 2022, MNRAS 517, 1667. (1aox, 2dx, 5bei) A nearly synchronous IP below the period gap? |
| eRASSU J050810.4–660653 | *Ghising, M. et al.* (5 authors) 2023, MNRAS 518, 893. (1ax, 2dx, 5ij) Spectral and timing analysis of the LMC Be/XB. |
| 2MASS J05160118−3124457 (TOI-450) | *Tofflemire, B.M. et al.* (15 authors) 2023, AJ 165, 46. (1a, 2b, 5abcde) Low-mass pre-main-sequence EB in the Columba association. |
| eRASSU J052914.9−662446 | *Maitra, C. et al.* (15 authors) 2023, A&A 669, A30. (1ao, 2x) Broadband study and the discovery of pulsations from the Be/XB in the LMC.<br>*Rai, B. et al.* (5 authors) 2022, MNRAS 517, 4092. (1ax, 2dx, 5ij) Spectral and timing properties of the recently discovered Be/X-ray PSR. |
| 1RXS J053246.1−662203 (LMC X-4) | *Sharma, R. et al.* (4 authors) 2023, MNRAS 519, 1764. (1ax, 2dx, 5i) HMXB broad-band mHz QPOs and spectral study. |
| 1A 0535+262 | (see V725 Tau) |
| 2MASS J06083197−5932280 (TOI-1338) | *Gakis, D., Gourgouliatos, K.N.* 2023, MNRAS 519, 3832. (7d) Binary and circumbinary planet orbits. |
| 2MASS J06195643−1758186 (TIC 60040774) | *Priyatikanto, R. et al.* (4 authors) 2022, MNRAS 516, 1183. (1ao, 2a, 5abcdeg) A binary with a WD primary and a main sequence secondary. |
| 1A 0620−00 | (see V616 Mon) |
| ZTF J064726.39+223431.6 | *Kovalev, M. et al.* (4 authors) 2023, MNRAS 519, 5454. (1ao, 2aco, 5cdegk) SB2 and detached EB. |

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| MAXI J0709−159 | *Sugizaki, M. et al.* (13 authors) 2022, PASJ 74, 1131. (1ax, 2cdox, 5ij, 6bc) Supergiant fast X-ray transient associated with the Be star LY CMa. |
| 2MASS J07144779+2749504 (ATO J108.6991+27.8306) | *Ma, S. et al.* (6 authors) 2022, RAA 23, 035012. (1ao, 5abcg) Relatively deep, low mass-ratio contact binary. |
| PSR J0737−3039 | *Hu, H. et al.* (19 authors) 2022, A&A 667, A149. (4cr) Gravitational signal propagation in the double PSR studied with the MeerKAT telescope. |
| PSR J0740+6620 | *Salmi, T. et al.* (18 authors) 2022, ApJL 941, 150. (1x, 2x) The radius from NICER with background estimates. |
| ASAS J082151−0612.6 | *Wadhwa, S.S. et al.* (7 authors) 2022, RAA 22, 105009. (1aou*x*, 5ceg) Potential red nova progenitor. |
| 2MASS J08343881+3133147 (TIC 172900988) | *Gakis, D., Gourgouliatos, K.N.* 2023, MNRAS 519, 3832. (7d) Binary and circumbinary planet orbits. |
| PSR J0835−4510 | (see HU Vel) |
| 2S 0921−630 | (see V395 Car) |
| GRO J1008−57 | *van den Eijnden, J. et al.* (9 authors) 2022, MNRAS 516, 4844. (1r, 5cgi) Radio monitoring. |
| IGR J10101−5654 | *Bouchet, T. et al.* (4 authors) 2022, MNRAS 517, 3034. (1ai, 2cdioux, 5gij) A Be HMXB.<br>*Bouchet, T. et al.* (4 authors) 2023, MNRAS 519, 2198. Corrigendum. |
| IGR J11435−6109 | *Bouchet, T. et al.* (4 authors) 2022, MNRAS 517, 3034. (1ai, 2cdioux, 5gij) A Be HMXB with a B0.5Ve companion.<br>*Bouchet, T. et al.* (4 authors) 2023, MNRAS 519, 2198). Corrigendum. |
| 1E 1145.1−6141 | (see V830 Cen) |
| 2MASS J12220147−5737565 | *Stassun, K.G. et al.* (8 authors) 2022, ApJL 941, 125. (1ao, 2ao, 5cdeig) Low-mass pre-main-sequence EB discovered with TESS. |
| CXOU J122941.0+075744 | *Athukoralalage, W.R. et al.* (7 authors) 2023, MNRAS 518, 855. (2dox, 5ij) Optical and X-ray follow-up of the NGC 4472 ULX. |
| IGR J12489−6243 | *Bouchet, T. et al.* (4 authors) 2022, MNRAS 517, 3034. (1ai, 2cdioux, 5gij) A helium-rich CV with a K0-2 subgiant companion.<br>*Bouchet, T. et al.* (4 authors) 2023, MNRAS 519, 2198). Corrigendum. |
| 2XMM J125556.57+565846.4 | *Mazeh, T. et al.* (27 authors) 2022, MNRAS 517, 4005. (1aoux, 2ao, 5deg) Probable dormant NS in a short-period binary system. |
| PSR J1311−3430 | *De Luca, A. et al.* (6 authors) 2022, A&A 667, L7. (2aioux*, 5ij) A puzzling 2-hour X-ray periodicity in the 1.5-hour orbital period black widow PSR. |
| SDSS J134441.83+204408.3 | *Littlefield, C. et al.* (9 authors) 2023, ApJL 943, L24. (1o, 2ouc) A highly asynchronous short-period magnetic CV with a 56 MG field strength. |
| MAXI J1348−630 | *Liu, Y.X. et al.* (29 authors) 2022, ApJ 938, 108. (2dx) Transitions and origin of type-B QPOs.<br>*Mall, G., Vadakkumthani, J., Misra, R.* 2023, RAA 23, 015015. (1ax, 2dx, 5cij) BH XB broadband spectral properties.<br>*Titarchuk, L., Seifina, E.* 2023, A&A 669, A57. (1x, 5ei) Estimating the BH mass and binary inclination using a scaling technique. |
| ROTSE1 J135349.96+305203.3 | *Barani, C. et al.* (6 authors) 2022, RMxAA 58, 237. (1ao, 2ao, 5abcde) Overcontact binary. |
| 4FGL J1408.6−2917 | *Swihart, S.J. et al.* (7 authors) 2022, ApJL 941, 199. (1goxir, 2oix) A new flaring black widow candidate and demographics of black widow NS PSRs. |

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| 2S 1417−624 | *Mandal, M., Pal, S.* 2022, Ap&SS 367, 112. (1xi) Timing and spectral studies of the X-ray PSR during the 2021 outburst. |
| 1SWASP J150957.56−115308.4 | (see V373 Lib) |
| 2MASS J15274848+3536572 | *Lin, J. et al.* (16 authors) 2023, ApJL 944, L4. (1crxio, 2abciorx) An X-ray-dim "isolated" NS in a binary? |
| MAXI J1535−571 | *Chen, X. et al.* (14 authors) 2022, MNRAS 517, 182. (1ax, 5ij) Wavelet analysis of the transient QPOs in the XB with Insight-HXMT.<br>*Titarchuk, L., Seifina, E.* 2023, A&A 669, A57. (1x, 5ei) Estimating the BH mass and binary inclination using a scaling technique. |
| XTE J1550−564 | (see V381 Nor) |
| SDSS J162256.66+473051.0 | *Deminova, N.R. et al.* 4 authors 2022, AstBu 77, 415. (1a, 2ac, 5bcdeh) Refined parameters of the pre-CV with a sdB sub-dwarf companion. |
| 4U 1626−67 | (see KZ TrA) |
| GLEAM-X J162759.5−523504.3 | *Konar, S.* 2023, JApA 44, 1 (8a) Radio transient enigma. |
| IRAS 16293−2422 | *Maureira, M.J. et al.* (9 authors) 2022, ApJL 941, L23. (1r, 2r) Dust hot spots around an O binary component and departure from the passive irradiation model. |
| 4U 1630−47 | (see Nor X-1) |
| MAXI J1631−479 | *Fu, Y.-C. et al.* (17 authors) 2022, RAA 22, 115002. (2dx, 5bij) Spectral and timing analysis of the BH transient during its 2019 outburst with Insight-HXMT.<br>*Rout, S.K. et al.* (4 authors) 2023, ApJ 944, 68. (1xg, 2xg) Implications for a high inclination and massive BH. |
| 4U 1636−536 | (see V801 Ara) |
| ZTF J163743.49+491740.4 | *Sarkar, A., Ge, H., Tout, C.A.* 2023, MNRAS 519, 2567. (8cd) The helium star formation channel for the AM CVn system. |
| GRO J1655−40 | (see V1033 Sco) |
| 4U 1700+24 | (see V934 Her) |
| 1RXS J170849.0−400910 | *Zane, S. et al.* (102 authors) 2023, ApJL 944, L27. (1x, 2x, 3) A strong X-ray polarization signal from the magnetar. |
| XTE J1710−281 | *Jain, C. Sharma, R., Paul, B.* 2022, MNRAS 517, 2131. (1ax, 5ab) Eclipse timings of the LMXB and a third orbital period glitch. |
| PSR J1717+4308A | *Zhang, P. et al.* (5 authors) 2023, ApJ 945, 70. (1oi, 2oi) Likely detection of $\gamma$-ray pulsations in the NGC 6341 globular cluster PSR. |
| CRTS J172718.0+431624 | (see V1494 Her) |
| 2MASS JJ17284110−0034514 (Gaia DR3 4373465352415301632) | *El-Badry, K. et al.* (21 authors) 2023, MNRAS 518, 1057. (1aiou, 2ao, 4ao, 5degh) A sun-like star orbiting a BH. |
| Swift J1728.9−3613 | *Saha, D., Mandal, M., Pal, S.* 2023. MNRAS 519, 519. (1ax, 2dx, 5ij) BH XB spectral and timing study. |
| 4U 1730−22 | *Bult, P. et al.* (14 authors) 2022, ApJ 940, 81. (2dx) Observation of thermonuclear X-ray bursts and distance determination.<br>*Chen, Y.-P. et al.* (14 authors) 2023, ApJL 942, L12. (1x, 2x) Peculiar burst properties of the 2021/2022 outbursts observed by Insight-HXMT. |
| IGR J17329−2731 | *Ablimit, I.* 2023. MNRAS 519. 1327. (8bcd) A promising formation channel for the symbiotic XB. |
| XTE J1739−285 | *Mondal, A.S. et al.* (4 authors) 2022, MNRAS 516, 1256. (1x, 5cgi) Evidence of hard power-law spectral cutoff and disc reflection features. |

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| Suzaku J174035−301416 | *Mondal, S. et al.* (7 authors) 2022, A&A 666, A150. (2dx, 5eg, 6bc) An IP candidate toward the Galactic plane. |
| H 1743−322 | *Shui, Q.C. et al.* (14 authors) 2023, ApJ 943, 165. (1x, 2x, 5i) Tracing the accretion geometry with type C QPOs. |
| 4XMM J174917.7−283329 | *Mondal, S. et al.* (8 authors) 2023, A&A 671, A120. (2x, 5i) Discovery of periodicities in the highly variable IP. |
| 4XMM J174954.6−294336 | *Mondal, S. et al.* (8 authors) 2023, A&A 671, A120. (2x, 5i) Discovery of periodicities in the highly variable IP. |
| SWIFT J1749.4−2807 | *Marino, A. et al.* (21 authors) 2022, MNRAS 515, 3838. (1x, 5cgi) Outflows and spectral evolution. |
| GRO J1750−27 | *Malacaria, C. et al.* (14 authors) 2023, A&A 669, A38. (1x, 5i) The unaltered PSR: a supercritical X-ray NS that does not blink an eye. |
| IGR J17591−2342 | *Manca, A. et al.* (12 authors) 2023, MNRAS 519, 2309. (1ax, 2cdx, 5ij) LMXB accreting millisecond X-ray PSR. |
| MAXI J1803−298 | *Feng, Y. et al.* (7 authors) 2022, MNRAS 516, 2074. (1x, 5ceg) The new BH candidate spin. |
| SAX J1808.4−3658 | (see V4580 Sgr) |
| ZTF J1813+4251 | *Burdge, K.B. et al.* (27 authors) 2022, Nature 610, 467. (1aio, 2ao, 5bcdegik, 8c) A dense 0.1-solar-mass star in a 51-min-orbit-period EB. |
| 1SWASP J181417.43+481117.0 | *Lee, J. et al.* (4 authors) 2022, MNRAS 515, 4702. (1ao, 2a, 5cdeg) A pre-He WD in the EB. |
| Swift J1818.0−1607 | *Uzuner, M. et al.* (11 authors) 2022, ApJL 942, 8. (1g, 2g) Bursts from the high-magnetic-field PSR. |
| MAXI J1820+070 | *Abe, H. et al.* (444 authors) 2022, MNRAS 517, 4736. (1agoux, 4cgr, 5ij) The LMXB system during the 2018 outburst.<br>*Kawamura, T. et al.* (4 authors) 2023, MNRAS 519, 4434. (2dx, 5i) Accretion flow in the BH binary.<br>*Peng, J.Q. et al.* (15 authors) 2023, MNRAS 518, 2521. (1ax, 5i) An overall scenario for the outburst evolution of the BH LMXB.<br>*Titarchuk, L., Seifina, E.* 2023, A&A 669, A57. (1x, 5ei) Estimating the BH mass and binary inclination using a scaling technique. |
| GS 1826−238 | (see V4634 Sgr) |
| 2MASS J18361702−5110583 | *Parsons, S.G. et al.* (11 authors) 2023, MNRAS 518, 4579. (2aciou, 5bdeg) WD + subgiant binary. |
| EXO 1846−031 | *Williams, D.R.A. et al.* (18 authors) 2022, MNRAS 517, 2801. (1ax, 4cr, 5ij) BH XB reawakening after a 34-year slumber. |
| PSR J1846.4−0258 | *Uzuner, M. et al.* (11 authors) 2022, ApJL 942, 8. (1g, 2g) Bursts from the high-magnetic-field PSR. |
| Swift J1858.6−0814 | *Vincentelli, F.M. et al.* (24 authors) 2023, Nature 615, 45. (1irux, 5i) A BH and NS shared accretion instability. |
| XTE J1859+226 | (see V406 Vul) |
| ZTF J1901+1458 | *Sousa, M.F. et al.* (5 authors) 2022, ApJ 941, 28. (8d) Double WD merger progenitor of a massive, rapidly rotating, magnetic WD. |
| 4U 1907+09 | *Tobrej, M. et al.* (5 authors) 2023, MNRAS 518, 4861. (1ax, 2dx, 5ij) The HMXB PSR has multiple absorption-line features in its spectrom. |
| SDSS J190817.07+394036.4 | *Veresvarska, M., Scaringi, S.* 2023, MNRAS 518, 5576. (1ao*, 5i) Low-frequency aperiodic variability in the ultracompact interacting AM CVn binary. |

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| GRS 1915+105 | (see V1487 Aql) |
| 2MASS J19204469+4343258 (KIC 7955301) | *Gaulme, P. et al.* (16 authors) 2022, A&A 668, A173. (1ao*, 2ao, 5bcdg) A hierarchical triple system with eclipse timing variations and an oscillating red giant. |
| SMSS J192054.50−200135.5 | *Li, J. et al.* (15 authors) 2022, MNRAS 515, 3370. (1ao, 2a, 5cdegi) Possible detection of an ejected common envelope. |
| 2MASS J19310592+4229532 (KIC 6951642) | *Samadi-Ghadim, A., Lampens, P., Gizon, L.* 2022, A&A 667, A60. (1ao*, 2ao, 5cdgk) A Kepler $\gamma$ Doradus - $\delta$ Scuti star with intermediate to fast rotation in a possible single-lined binary system. |
| SGR 1935+2154 | *Tong, H.* 2023, RAA 23, 025013. (1r, 5bcij) The magnetar's anti-glitch. |
| SGR J1935+2154 | *Lu, X.-F. et al.* (13 authors) 2023, RAA 23, 035007. (2dx, 5c, 9) Burst phase distribution based on Insight-HXMT. |
| XTE J1946+274 | *Devaarj, A., Paul, B.* 2022, MNRAS 517, 2599. (1ax, 2dx, 5ij) Phase-dependent cyclotron line feature in the Be/XB 2018 outburst. |
| PSR J1952+2630 | *Gautam, T. et al.* (7 authors) 2022, A&A 668, A187. (3ar, 5be) Relativistic effects in the mildly recycled PSR binary. |
| 4U 1957+115 | (see V1408 Aql) |
| PSR B1957+20 | (see QX Sge) |
| EXO 2030+375 | (see V2246 Cyg) |
| ZTF J205515.98+465106.5 | *Deshmukh, K. et al.* (9 authors) 2023, MNRAS 519, 148. (1aox, 2acio, 3ao, 5abi) Limiting the AD light in the mass transferring hot subdwarf binary. |
| GRO J2058+42 | *Reig, P. et al.* (4 authors) 2023, A&A 671, A48. (1ao, 5i) Long-term optical variability of the Be/XB. |
| SAX J2103.5+4545 | *van den Eijnden, J. et al.* (9 authors) 2022, MNRAS 516, 4844. (1r, 5cgi) Radio monitoring. |
| ASAS J210406−0522.3 | *Wadhwa, S.S. et al.* (4 authors) 2022, JApA 43, 42. (1ao, 5ce) Low-mass-ratio contact binary. |
| PSR J2108+4516 | *Andersen, B.C. et al.* (28 authors) 2023, ApJ 943, 57. (1r, 2r) CHIME discovery of a binary PSR with a massive nondegenerate companion. |
| ZTF J213056.71+442046.5 | *Deshmukh, K. et al.* (9 authors) 2023, MNRAS 519, 148. (1aox, 2acio, 3ao, 5abi) Limiting the AD light in the mass transferring hot subdwarf binary. |
| IGR J21343+4738 | *Gorban, A.S. et al.* (4 authors) AstL 48, 798. (2agx, 2dx, 5bi) The X-ray PSR observed with NuSTAR, Swift and SRG. |
| PSR J2140−2311B (M30B) | *Balakrishnan, V. et al.* (17 authors) 2023, ApJL 942, L35. (1r, 4cr, 5be) Redetection of the elusive binary PSR. |
| SRGe J214919.3+673634 | *Bikmaev, I.F. et al.* (21 authors) 2022, AstL 48, 530. (1a, 2, 5bi) Candidate AM Her variable discovered by the eROSITA telescope onboard the Spectrum-Roentgen-Gamma orbital observatory. |
| 4U 2206+54 | *Jain, C., Yadav, A., Sharma, R.* 2022, JApA 43, 101. (1ax, 2cdx, 5bij) HMXB change in spin-down rate and detection of a broad emission line. |
| SDSS J221141.80+113604.4 | *Sousa, M.F. et al.* (5 authors) 2022, ApJ 941, 28. (8d) Double WD merger progenitor of massive, rapidly rotating, magnetic WD. |
| SDSS J222551.65+001637.7 | *French, J.R. et al.* (7 authors) 2023, MNRAS 519, 5008. (2bdi, 4ci, 5e, 6b) A resolved WD-brown dwarf binary with a small projected separation. |
| LAMOST J224040.77−020732.8 | *Yuan, H. et al.* (10 authors) 2023, AJ 165, 119. (1a, 2ab, 5d, 6b) Discovery of an extremely low-mass binary in the LAMOST survey. |

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| 1RXS J230645.0+550816 | *Kozhevnikov, V.P.* 2022, Ap&SS 367, 129. (1bo, 5b) IP precise photometric period. |
| PSR B2319+60 | *Chen, J.-L. et al.* (12 authors) 2022, RAA 22, 115014. (1r, 5bc) Mode changing, pulse nulling and subpulse drifting in the asymmetric conal triple radio PSR. |
| HS 2325+8205 | *Sun, Q.-B. et al.* (12 authors) 2023, MNRAS 518, 3901. (1ao*, 5ab) QPOs in the eclipsing dwarf nova. |

## X-ray sources with constellation or galaxy names

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|---|---|
| Cen X-3 | (see V779 Cen) |
| Cen X-4 | (see V822 Cen) |
| Cir ULX5 | *Middleton, K., Gúrpide, A., Walton, D.J.* 2023, MNRAS 519, 2224. (5ij, 8ab) Propeller states in the locally supercritical ULX. |
| Cyg X-1 | (see V1357 Cyg) |
| Cyg X-2 | (see V1341 Cyg) |
| IC 10 X-1 | *Bhattacharya, S. et al.* (8 authors) 2023, ApJ 944, 52. (2acox) Stellar wind of the WR star. |
| IC 324 X-1 | *Middleton, K., Gúrpide, A., Walton, D.J.* 2023, MNRAS 519, 2224. (5ij, 8ab) Propeller states in the locally supercritical ULX. |
| LMC X-4 | (see 1RXS J053246.1−662203) |
| M33 X-7 | *Ramachandran, V. et al.* (13 authors) 2022, A&A 667, A77. (2dioux, 5egij, 8c) Phase-resolved spectroscopic analysis of the BH XB EB. |
| M51 ULX-8 | *Allak, S.* 2022, MNRAS 517, 3495. (1aox, 6c) Detection of a 125.5-day optical periodic modulation of the NS ULX. |
| M82 X-1 | *Mondal, S., Palit, B., Chakrabarti, S.K.* 2022, JApA 43, 90. (2dx, 5cei) Accretion flows around the ULX. |
| M82 X-2 | *Bachetti, M. et al.* (24 authors) 2022, ApJ 937, 125. (1x) Orbital decay driven by extreme mass transfer. |
| NGC 55 ULX-1 | *Barra, F. et al.* (14 authors) 2022, MNRAS 516, 3972. (1x*, 5cegi) Unveiling the disc structure. |
| NGC 300 ULX-1 | *Ng, M. et al.* (5 authors) 2022, ApJ 940, 138. (2dx) Absorbed power-law model is best fit to spectral evolution. |
| NGC 1042 ULX1 | *Ghosh, T., Rana, V.* 2022, MNRAS 517, 4247. (1ax, 2dx, 5i) ULX spectral variability. |
| NGC 1313 X-1 | *Gúrpide, A. et al.* (5 authors) 2022, A&A 666, A100. (2dio, 5ij) A shock-ionised bubble, an X-ray photoionised nebula, and two SN remnants in the ULX. |
| NGC 1313 X-1 | *Middleton, K., Gúrpide, A., Walton, D.J.* 2023, MNRAS 519, 2224. (5ij, 8ab) Propellar states in the locally supercritical ULX. |
| Nor X-1<br>(4U 1630−47) | *Yang, Z.-X. et al.* (100 authors) 2022, ApJ 937, 33. (2dx) BH XB mHz QPO modulation. |
| Sco X-1 | (see V818 Sco) |
| Sgr X-1<br>(GX 3+1) | *Nath, A. et al.* (4 authors) 2022, JApA 43, 93. (1bx, 2dx, 5ij) Rapid type-I thermonuclear burst from the LMXB. |

SMC X-3 — *Liu, J. et al.* (7 authors) 2022, MNRAS 517, 3354. (2dx, 5i) HMXB super-Eddington accretion.

## Objects with other designations

Achernar — (see $\alpha$ Eri)

AT2018cow — *Zhang, W. et al.* (14 authors) 2022, RAA 22, 125016. (1x, 5ei) A possible 250 s X-ray quasi-periodicity in the fast blue optical transient.

AT 2021biy — *Cai, Y.-Z. et al.* (76 authors) 2022, A&A 667, A4. (1aio, 2cdo, 3bo, 5ceg) Luminous red nova in NGC 4631.

FRB 20201124A — *Ikebe, S. et al.* (17 authors) 2023, PASJ 75, 199. (2dr, 5c) Detection of a bright burst from the repeating fast radio burst at 2 GHz.
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