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The bibliographical entries for *Individual Stars* and *Collections of Data*, as well as a few *General* entries, are categorized according to the following coding scheme. Data from archives or databases, or previously published, are identified with an asterisk. The observation codes in the first four groups may be followed by one of the following wavelength codes.

- g. γ -ray. i. infrared. m. microwave. o. optical
 r. radio u. ultraviolet x. x-ray

1. Photometric data

- a. CCD b. Photoelectric c. Photographic d. Visual

2. Spectroscopic data

- a. Radial velocities b. Spectral classification c. Line identification d. Spectrophotometry

3. Polarimetry

- a. Broad-band b. Spectropolarimetry

4. Astrometry

- a. Positions and proper motions b. Relative positions only c. Interferometry

5. Derived results

- a. Times of minima b. New or improved ephemeris, period variations
 c. Parameters derivable from light curves d. Elements derivable from velocity curves
 e. Absolute dimensions, masses f. Apsidal motion and structure constants
 g. Physical properties of stellar atmospheres h. Chemical abundances
 i. Accretion disks and accretion phenomena j. Mass loss and mass exchange
 k. Rotational velocities

6. Catalogues, discoveries, charts

- a. Catalogues b. Discoveries of new binaries and novae
 c. Identification of optical counterparts of γ -ray, x-ray, IR, or radio sources d. Finding charts

7. Observational techniques

- a. New instrument development b. Observing techniques
 c. Reduction procedures d. Data-analysis techniques

8. Theoretical investigations

- a. Structure of binary systems b. Circumstellar and circumbinary matter
 c. Evolutionary models d. Loss or exchange of mass and/or angular momentum

9. Statistical investigations

10. Miscellaneous

- 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

- π Aqr *Langer, N. et al.* (7 authors) 2020, A&A 633, A40. (8abcd) γ Cas stars: normal Be stars with discs impacted by the He-star companion wind?
- R Aqr *Bujarrabal, V. et al.* (5 authors) 2020, A&A 633, C1. (2cox, 10b) High-resolution observations of the symbiotic system. Direct imaging of the gravitational effects of the secondary on the stellar wind (Corrigendum).
- LY Aqr
(PSR J2051–0827) *Polzin, E.J. et al.* (8 authors) 2019, MNRAS 490, 889. (1r, 5ij, 8bd) 10-yr radio monitoring of the black widow PSR.
Zharikov, S. et al. (5 authors) 2019, MNRAS 489, 5547. (1ao, 4a, 5bcg, 6cd) Optical detection of the black widow binary PSR.
- V889 Aql *Kiran, E. et al.* (4 authors) 2019, ApSS 364, 214. (2ao, 5abcdef) Eccentric EB.
- V1333 Aql
(Aql X-1) *Degenaar, N. et al.* (10 authors) 2019, MNRAS 488, 4477. (1x, 2dx, 5gi) NS crust cooling in the LMXB.
Gusinskaia, N.V. et al. (11 authors) 2020, MNRAS 492, 2858. (1rx, 5cg, 8a) The interplay between accretion inflow (X-ray) and jet outflow (radio).
- V1343 Aql
(SS 433) *Fang, K., Charles, E., Blandford, R.D.* 2020, ApJL 889, L5. (1ao, 2dgg) GeV–TeV counterparts of the SS 433/W50 complex.
- V1413 Aql *Tatarnikova, A.A., Tatarnikov, A.M., Tarasova, T.N.* 2020, AstL 46, 24. (2cd, 5g). Symbiotic binary in quiescent and active states in 2012-2017.
- V1487 Aql
(GRS 1915+105) *Belloni, T.M. et al.* (6 authors) 2019, MNRAS 489, 1037. (1x, 5i) Detection of high-frequency QPOs using AstroSat X-ray observations.
Misra, R. et al. (4 authors) 2020, ApJL 889, L36. (2dx) QPO frequency due to truncated AD.
Shreeram, S., Ingram, A. 2020, MNRAS 492, 405. (1x, 5cg, 8a) Radial disc ionization profile.
- V801 Ara
(4U 1636–53) *Karpouzias, K. et al.* (6 authors) 2020, MNRAS 492, 1399. (1x*, 5bcg, 8a) The Comptonizing medium through its lower kilohertz QPOs.
Lyu, M. et al. (5 authors) 2019, ApJ 885, 5. (1x) No correlation between QPO frequency and amplitude.
Ribeiro, E.M. et al. (5 authors) 2019, MNRAS 489, 4980. (1x, 5i) The NS LMXB kHz QPOs in the frequency-energy space.
- V821 Ara
(GX 339-4) *García, J.A. et al.* (15 authors) 2019, ApJ 885, 48. (1gx) The HMXB 2017-2018 outburst.
Vincentelli, F.M. et al. (12 authors) 2019, ApJL 887, L19. (1ix) IR-emitting relativistic jet.
- TT Ari *Bruch, A.* 2019, MNRAS 489, 2961. (1ao, 5bcij) 40-yr photometric monitoring of the nova-like variable. This is the first time that the orbital period is seen in photometric data.
- FS Aur *Chavez, C.E. et al.* (7 authors) 2020, RMxAA 56, 19. (1o*, 8a) CV in a triple system.
- V423 Aur *Wu, C.-J. et al.* (11 authors) 2020, RAA 20, 33. (1ao, 2ao, 5j) Irregular changes in H α emission observed by LAMOST.
- V509 Cam *Li, K. et al.* (9 authors) 2019, RAA 19, 147. (1ao, 5abcej) Totally eclipsing contact binary.
- RU Cnc *Cokluk, K.A. et al.* (6 authors) 2019, MNRAS 488, 4520. (1ao, 2a, 5abcddeg) Absolute properties of the active RS CVn-type EB with red giant branch and main-sequence components.

RS CVn	<i>Xiang, Y. et al.</i> (9 authors) 2020, MNRAS 492, 3647. (2abc, 5deg, 8a) The first Doppler imaging.
EL CVn	<i>Wang, L. et al.</i> (11 authors) 2020, AJ 159, 4. (1ao, 2a, 5cde) Pre-He WD in post-mass transfer binary.
η Car	<i>H.E.S.S. Collaboration, Abdalla, H. et al.</i> (234 authors) 2020, A&A 635, A167. (1bg, 5g) Detection of very-high-energy γ -ray emission from the colliding wind binary with H.E.S.S. <i>Meaner, A. et al.</i> (9 authors) 2019, A&A 630, L6. (3di) Mid-IR evolution from 1968 to 2018. <i>Smith, N., Soker, N.</i> 2019, MNRAS 489, 268. (1aiou, 5j) UV Mg II emission from fast neutral ejecta around the binary may be an excellent tracer of significant reservoirs of freely expanding, unshocked, and otherwise invisible neutral atomic gas in a variety of stellar outflows. <i>White, R. et al.</i> (6 authors) 2020, A&A 635, A144. (1bg, 8b) γ -ray and X-ray constraints on non-thermal processes.
γ Cas	<i>Langer, N. et al.</i> (7 authors) 2020, A&A 633, A40. (8abcd) γ Cas stars: normal Be stars with discs impacted by a He-star companion wind?
UU Cas	<i>Kononov, D.A., Gorda, S.Y., Parfenov, S.U.</i> 2019, ApJ 883, 186. (2co, 5i, 8c) Gas dynamic features in the massive CB in the late stage of the first mass transfer phase.
EG Cas	<i>Yang, Y., Yuan, H., Dai, H.</i> 2019, PASP 131, 124201. (1ao, 2a, 5abcde) Infrared excess binary.
V635 Cas (4U 0115+63)	<i>Martin, R.G., Franchini, A.</i> 2019, MNRAS 489, 1797. (8abd) Kozai-Lidov disc oscillations driving giant outbursts in the Be/X-ray binary.
V1033 Cas	<i>Kozhevnikov, V.P.</i> 2019, ApSS 364, 208. (1bo) Extensive photometry and spin period of the IP.
ST Cen	<i>Moriarty, D.J.W. et al.</i> (6 authors) 2020, ApSS 365, 1. (1ao, 2abo, 5abcde) Chromospherically active close EB.
V752 Cen	<i>Zhou, X. et al.</i> (4 authors) 2019, MNRAS 489, 4760. (1ao, 5abcej) Triple-lined contact SB with sudden and continuous period changes.
V775 Cen	<i>Moriarty, D.J.W. et al.</i> (6 authors) 2020, ApSS 365, 1. (1ao, 2abo, 5abcde) Chromospherically active close EB.
IL Cep	<i>Ismailov, N.Z. et al.</i> (4 authors) 2020, ARep 64, 23. (1a, 2a, 5d) The Herbig Be star as a long-periodic SB.
Z Cha	<i>Court, J.M.C. et al.</i> (11 authors) 2019, MNRAS 488, 4149. (1ao, 5abceij, 8d) TESS study of the eclipsing dwarf nova covering both an outburst and a superoutburst.
BR Cir	<i>Schulz, N.S. et al.</i> (6 Authors) 2020, ApJ 891, 150. (1dx, 5i) Origin of X-ray line emission in the HMXB.
V691 CrA	<i>Xing, Z.-P., Li, X.-D.</i> 2019, ApJ 887, 201. (8abcd) Rapid orbital expansion in the LMXB.
TV Crt (HD 98800)	<i>Martin, R.G., Lubow, S.H.</i> 2019, MNRAS 490, 1332. (8abd) Disc mass effect on polar alignment of a protoplanetary disc around an eccentric binary.
BP Cru (GX 301-2)	<i>Zheng, X., Liu, J., Gou, L.</i> 2020, MNRAS 491, 4802. (1x, 5cgi, 8b) Spatial distribution of circumstellar material.
BZ Cru	<i>Langer, N. et al.</i> (7 authors) 2020, A&A 633, A40. (8abcd) γ Cas stars: normal Be stars with discs impacted by a He-star companion wind?

V404 Cyg	<i>Kajava, J.J.E. et al.</i> (5 authors) 2020, A&A 634, A94. (1aox, 5a) Rapid spectral transition of the BH binary. <i>Oates, S.R. et al.</i> (13 authors) 2019, MNRAS 488, 4843. (1aox, 5ij, 8b) Swift UVOT observations of the 2015 outburst.
V1143 Cyg (HD 185912)	<i>Lester, K.V. et al.</i> (11 authors) 2019, AJ 158, 218. (2a, 4c, 5cde) Visual orbit of the SB/EB.
V1521 Cyg (Cyg X-3)	<i>Cao, X., Zdziarski, A.A.</i> 2020, MNRAS 492, 223. (5gi, 8ac) Jets in the soft state.
HY Eri	<i>Beuermann, K. et al.</i> (5 authors) 2020, A&A 634, A91. (1aox, 2aox, 3bo, 5eij) A peculiar and neglected X-ray discovered EB polar.
IM Eri	<i>Kato, T. et al.</i> (23 authors) 2020, PASJ 72, 11. (1ao, 5i) Nova in an IW And-type state.
UZ For	<i>Khangale, Z.N. et al.</i> (20 authors) 2020, MNRAS 492, 4298. (1aor, 2abc, 3b, 5cdegi) A spectroscopic, photometric, polarimetric, and radio study.
DQ Her	<i>Schaefer, B.E.</i> 2020, MNRAS 492, 3323. (5bg, 8a) New measures of the sudden change in the orbital period.
HZ Her (Her X-1)	Leahy, D.A., Postma, J., Chen, Y. 2020, ApJ 889, 131. (1aou, 2dou) AstroSat UVIT observations of the XB PSR. <i>Kosec, P. et al.</i> (6 authors) 2020, MNRAS 491, 3730. (1x, 2d, 5cgi) Discovery of an ionized AD wind.
V1005 Her	<i>Zhu, L.-Y. et al.</i> (5 authors) 2019, MNRAS 489, 2677. (1ao, 5abce) A W-type shallow contact binary with evidence of a third-body.
V1197 Her	<i>Zhou, X., Soonthornthum, B.</i> 2020, RAA 20, 10. (1ao, 5abceg) W-type W UMa binary.
VW Hyi	<i>Nakaniwa, N. et al.</i> 2019, MNRAS 488, 5104. (1adx, 2dx, 5chij) Variation of the mass accretion rate on to the WD in the dwarf nova.
CS Ind	<i>Kato, T. et al.</i> (6 authors) 2019, PASJ 71, L4. (1ao, 5i) SU UMa-type dwarf nova with long precursor outburst.
UV Lep	<i>Holdsworth, D.L., Saio, H., Kurtz, D.W.</i> 2019, MNRAS 489, 4063. (1ao, 2ao, 5bcdegk) The unique roAp star in a binary system observed with B-band, TESS and SALT photometry.
β Lyr	<i>Bastian, U.</i> 2019, A&A 630, L8. Gaia 8: discovery of a star cluster containing β Lyr (determined from astrometric and photometric data from HIPPARCOS and Gaia DR2).
MV Lyr	<i>Dobrotka, A., Negoro, H., Mineshige, S.</i> 2019, A&A 631, A134. (2ao, 5i) Shot profile morphology of fast variability in the CV is similar to that of an XB and a blazar.
V404 Lyr	<i>Lee, J.W. et al.</i> (4 authors) 2019, AJ 159, 24. (1ao, 2a, 5cde) γ Dor star
V754 Lyr (KIC 5608384)	<i>Yu, Z. et al.</i> (14 authors) 2019, MNRAS 489, 1023. (1aioux, 2abcdo, 5bcdegij, 8ac) Analysis and evolutionary modeling of the 9-h period CV showing an outburst in Kepler data.
BT Mon	<i>Schaefer, B.E.</i> 2020, MNRAS 492, 3323. (5bg, 8a) New measures of the sudden change in the orbital period.
V694 Mon (MWC 560)	<i>Lucy, A.B. et al.</i> (14 authors) 2020, MNRAS 492, 3107. (1aorux, 5cgi) How are ADs affected by their outflows?
QX Nor (4U 1608–52)	<i>Jaisawal, G.K. et al.</i> (17 authors) 2019, ApJ 883, 61. (1gir, 6b) NICER observes secondary peak in the decay of a thermonuclear burst.

DT Oct	Šimon, V., Edelmann, H. 2019, <i>AstBu</i> 74, 490. (1acd, 5c). Long-term activity of the little known dwarf nova.
RS Oph	<i>Nikolov, Y.M., Zamanov, R.K., Stoyanov K.A.</i> 2019, <i>AcA</i> 69, 361. (3b) Spectropolarimetric observations of the recurrent nova.
V2051 Oph	<i>Baptista, R., Wojcikiewicz, E.</i> 2020, <i>MNRAS</i> 492, 1154. (1ai, 5cegi) The quiescent AD and its spiral arms.
V2134 Oph (MXB 1659–298)	<i>Iaria, R. et al.</i> (10 authors) 2019, <i>A&A</i> 630, A138. (2dx, 5i) Broadband spectral analysis of the LMXB in the soft and hard states.
V2216 Oph (GX 9+9)	<i>Iaria, R. et al.</i> (8 authors) 2020, <i>A&A</i> 635, A209. (2dx, 5i) Reflection component in the bright atoll source.
V2293 Oph (GRS 1716–249)	<i>Jiang, J. et al.</i> (5 authors) 2020, <i>MNRAS</i> 492, 1947. (1x*, 5cgi) NuSTAR view of the hard and intermediate states. <i>Tao, L. et al.</i> (6 authors) 2019, <i>ApJ</i> 887, 184. (1gx) BH spin determined from the hard intermediate state.
V2606 Oph (GRS 1739-278)	<i>Xie, F.-G., Yan, Z., Wu, Z.</i> 2020, <i>ApJ</i> 891, 31. (1r, 1x) Radio/X-ray correlation in the mini-outbursts of the BH X-ray transient.
V2212 Ori (Par 1802)	<i>Cheng, S.J., Vinson, A.M., Naoz, S.</i> 2019, <i>MNRAS</i> 489, 2298. (8ad) Three-body dynamical evolution of M-dwarfs in triple systems, including tidal and pre-main-sequence evolution to explain the difference in temperature of the stars despite their identical masses.
V2790 Ori	<i>Kriwattanawong, W., Kriwattanawong, K.</i> 2019, <i>RAA</i> 19, 143. (1ao, 5abcej, 8cd) Contact EB photometric analysis and evolutionary stage.
V348 Pav	<i>Oliveira, A.S. et al.</i> (6 authors) 2019, <i>MNRAS</i> 489, 4032. (1ao, 2o, 3a, 5bcdej, 8b) Constraining the post-shock properties using CYCLOPS.
SZ Pic	<i>Martinez, C.I. et al.</i> (5 authors) 2019, <i>MNRAS</i> 490, 5832. (1aio, 2abc, 5abcdeg) Photometric and spectroscopic study.
SX Psc	<i>Wang, Z.H., Zhu, L.Y.</i> 2019, <i>PASJ</i> 71, 101. (1ao, 5abcej) A near-contact mass-transferring binary with a possible brown dwarf companion.
EQ Psc	<i>Baran, A.S. et al.</i> (7 authors) 2019, <i>MNRAS</i> 489, 1556. (1ao, 2ado, 5bcdegh) Kepler and spectroscopic observations of sdBV+dM/bd binary.
VV Pup	<i>Bonnet-Bidaud, J.M. et al.</i> (10 authors) 2020, <i>A&A</i> 633, A145. (1bo, 5i, 8b) Fast QPOs in the eclipsing polar.
AV Pup	<i>Han, Q.-W., Li, L.-F., Jiang, D.-K.</i> 2019, <i>RAA</i> 19, 174. (1ao, 5abj) High-mass-ratio contact binary.
HM Sge	<i>Sanad, M.R., Abdel-Sabour, M.A.</i> 2020, <i>RMxAA</i> 56, 63. (2du, 5gj) Symbiotic nova UV spectral behavior.
V1082 Sgr	<i>Xu, X., Shao, Y., Li, X.-D.</i> 2019, <i>MNRAS</i> 489, 3031. (1x, 2dx, 5ej, 8ac) X-ray observations and binary evolution modeling of the magnetic CV suggests a lobe-filling companion star.
V4580 Sgr	<i>Wang, S.Q. et al.</i> (5 authors) 2020, <i>ApSS</i> 365, 47. (8abc) High plasma cut-off frequency blocks the radio emission from the accreting millisecond X-ray PSR.
V1007 Sco (HD 152248)	<i>Rosu, S. et al.</i> (6 authors) 2020, <i>A&A</i> 635, A145. (1ao, 2ao, 5f) Apsidal motion in the massive binary.
V479 Sct (LS 5039)	<i>Chang, Z. et al.</i> (5 authors) 2019, <i>RAA</i> 19, 180. (2dg, 5ij) A diagnostic of the HMXB orbital spectrum with Fermi-LAT.
NN Ser	<i>Lanza, A.F.</i> 2020, <i>MNRAS</i> 491, 1820. Internal magnetic fields, spin-orbit coupling, and orbital period modulation in the CB.

NP Ser (GX 17+2)	<i>Agrawal, V.K., Nandi, A., Ramadevi, M.C.</i> 2020, ApSS 365, 41. (2dx, 5i) Spectral evolution along the Z-track of the NS LMXB. Corrigendum: 2020, ApSS 365, 56.
V411 Ser	<i>Kashi, A.</i> 2020, MNRAS 492, 5261. (5ei, 8acd) Wind collision and accretion simulations.
AY Sex (PSR J1023+0038)	<i>Baglio, M.C. et al.</i> (9 authors) 2019, A&A 631, A104. (1aoi, 2dx, 5ij) Outflow mechanisms in the transitional PSR. <i>Veledina, A., Nättilä, J., Beloborodov, A.M.</i> 2019, ApJ 884, 144. (8bd) Wind-heated AD.
UZ Tau E	<i>Sytov, A.Yu., Fateeva, A.M.</i> 2019, AstL 63, 1045. () Periodic accretion in the T Tauri binary.
FS Tau A	<i>Yang, Y. et al.</i> (59 authors) 2019, ApJ 889, 140. (2dr, 3ai) Polarimetry and submillimeter imaging: misaligned circumbinary disk system.
GG Tau	<i>Phuong, N.T. et al.</i> (16 authors) 2020, A&A 635, A12. (2cr, 5i) Gas properties and dynamics from the cavity to the outer disk.
V471 Tau	<i>Lanza, A.F.</i> 2020, MNRAS 491, 1820. Internal magnetic fields, spin-orbit coupling, and orbital period modulation in the CB.
V837 Tau	<i>Kolbin, A.I. et al.</i> (6 authors) 2019, AstBu 74, 451. (2a, 5dgh) RS CVn.
QU TrA (4U 1543–624)	<i>Ludlam, R.M. et al.</i> (20 authors) 2019, ApJ 883, 39. (1g, 2cdrx, 5i) The August 2017 outburst.
KV UMa (XTE J1118+480)	<i>Šimon, V.</i> 2020, PASA 37, e003. (1co, 5i) Outbursts of the BH X-ray transient in the optical band.
V342 UMa	<i>Li, K. et al.</i> (9 authors) 2019, RAA 19, 147. (1ao, 5abcej) Totally eclipsing contact binary.
γ^2 Vel	<i>Martí-Devesa, G. et al.</i> (4 authors) 2020, A&A 635, A141. (1bg, 5j, 8b) Hints of γ -ray orbital variability.
GP Vel (Vel X-1)	<i>Liao, Z. et al.</i> (4 authors) 2020, MNRAS 492, 5922. (1x, 5cgi, 8a) AD spectral evidence.
LM Vel (IGR J08408–4503)	<i>Ducci, L. et al.</i> (4 authors) 2019, A&A 631, A135. (2dx, 5i) AD by Roche overflow in the supergiant fast HMXB.

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

HD 36276 (TIC 149160359)	<i>Wang, K., Zhang, X., Dai, M.</i> 2020, ApJ 888, 49. (1ao, 5abce) Pulsating extremely low-mass pre-WD EB.
HD 42659	(see UV Lep)
HD 49798	<i>Krtićka, J. et al.</i> (8 authors) 2019, A&A 631, A75. (2cou, 5ghj) Hot subdwarf wind model with accurate abundances for the H-dominated HMXB component.
HD 81485 (HIP 45734)	<i>Tokovinin, A.</i> 2020, AJ 159, 88. (1ax, 2a, 5de) Quadruple system.
HD 98800	(see TV Crt)
HD 152248	(see V1007 Sco)
HD 166734	(see V411 Ser)
HD 185912	(see V1143 Cyg)
HD 202400	<i>North, P.L. et al.</i> (5 authors) 2010, Obs 140, 11. (2ao, 5ed) Spectroscopic orbit of the dwarf barium star.

HD 211276	<i>Masda, S.G. et al.</i> (8 authors) 2019, <i>AstBu</i> 74, 464. (4b, 5e). Physical and dynamical parameters of the triple stellar system.
HD 222349	<i>North, P.L. et al.</i> (5 authors) 2010, <i>Obs</i> 140, 11. (2ao, 5ed) Spectroscopic orbit of the dwarf barium star.
HD 224621	<i>North, P.L. et al.</i> (5 authors) 2010, <i>Obs</i> 140, 11. (2ao, 5ed) Spectroscopic orbit of the dwarf barium star.
HR 1099	<i>Lanza, A.F.</i> 2020, <i>MNRAS</i> 491, 1820. Internal magnetic fields, spin-orbit coupling, and orbital period modulation in the CB.
HR 1645	<i>De Rosa, R.J. et al.</i> (54 authors) 2019, <i>AJ</i> 158, 226. (4a) Detection of a low-mass companion.
CPD $-63^{\circ}2495$ (PSR B1259–63) (LS 2883)	<i>Fujita, Y. et al.</i> (5 authors) 2019, <i>PASJ</i> 71, L3. (1r, 2dr, 5ij) First detection of the HMXB with ALMA.

Objects with names including RA and DEC

2MASS J00513880–7217049 (SXP 4.78)	<i>Semena, A.N. et al.</i> (7 authors) 2019, <i>MNRAS</i> 490, 3355. (1x, 5g, 8a) Observational constraints on the magnetic field.
RX J0051.3–7216 (SXP 91.1)	<i>Monageng, I.M. et al.</i> (9 authors) 2019, <i>MNRAS</i> 489, 993. (1aox, 2o, 5bci) A recent type I outburst of the HMXB.
2MASS J00545618–7226478 (SXP 59)	<i>Weng, S.-S., Ge, M.-Y., Zhao, H.-H.</i> 2019, <i>MNRAS</i> 489, 1000. (1x, 2xd, 5i,) NuSTAR and XMM-Newton observations of the Be X-ray PSR binary during the 2017 giant outburst.
4U 0115+63	(see V635 Cas)
2MASS J01170514–7326360 (SMC X-1)	<i>Hu, C.-P. et al.</i> (5 authors) 2019, <i>ApJ</i> 885, 123. (1x) New spin-up and orbital decay rate for the HMXB.
SDSS J014823.29–004807.4 (GWAC 20181211A)	<i>Wang, J. et al.</i> (30 authors) 2020, <i>AJ</i> 159, 35. (1aio, 2do, 6b) Dwarf nova superoutbursts independently identified by SVOM/GWAC in 2018.
AllWISE J022506.37+080638.4 (GWAC 20181017A)	<i>Wang, J. et al.</i> (30 authors) 2020, <i>AJ</i> 159, 35. (1aio, 2do, 6b) Dwarf nova superoutbursts independently identified by SVOM/GWAC in 2018.
Swift J0243.6+6124	<i>Doroshenko, V. et al.</i> (118 authors) 2020, <i>MNRAS</i> 491, 1857. (1gx, 2cgi, 8a) Hot disc revealed.
RX J0318.3–6629 (NGC 1313 X-1)	<i>Jaisawal, G.K. et al.</i> (18 authors) 2019, <i>ApJ</i> 885, 18. (1x, 2c, 5i) Discussion of the AD and magnetic field.
2MASS J05045903–7031138 (OGLE LMC-ECL-6782)	<i>Kara, E. et al.</i> (17 authors) 2020, <i>MNRAS</i> 491, 5172. (1x, 5cgi) Discovery of a soft X-ray lag in the ULX.
MCSNR J0513–6724	<i>Taormina, M. et al.</i> (8 Authors) 2020, <i>ApJ</i> 890, 137. (2ou, 5de) RV analysis of the detached O-type EB and an independent distance to the LMC.
2MASS J05215658+4359220	<i>Maitra, C. et al.</i> (23 authors) 2019, <i>MNRAS</i> 490, 5494. (1x, 5bcg, 6b) Discovery of a very young HMXB in the LMC SN remnant.
ASASSN-V J052624.38–684705.6 (MACHO 80.7443.1718)	<i>Hayashi, T., Wang, S., Suto, Y.</i> 2020, <i>ApJ</i> 890, 112. (8a) Detecting an inner binary BH from the motion of the tertiary star. <i>Thompson, T.A. et al.</i> (17 authors) 2019, <i>Science</i> 366, 637. (1ao, 2aco, 5cde, 6b) A noninteracting low-mass BH–giant star binary system.
	<i>Jayasinghe, T. et al.</i> (6 authors) 2019, <i>MNRAS</i> 489, 4705. (1ao, 5abcf) Discovery of the most extreme heartbeat binary in the LMC using TESS and ASAS-SN observations.

CRTS J055255.7–004426 (THOR 42)	<i>Murphy, S.I. et al.</i> (10 authors) 2020, MNRAS 491, 4902. (1ax, 2abc, 5abcdeg, 8c) Young EB with two pre-main sequence M dwarf components.
2MASS J06114907+2249326 (LS V +22°25) (LB-1)	<i>Belczynski, T. et al.</i> (10 authors) 2020, ApJ 890, 113. (8ac) The formation of a 70 M_{\odot} BH at high metallicity and an 8 M_{\odot} B stellar companion. <i>Irrgang, A. et al.</i> (5 authors) 2020, A&A 633, L5. (2bco, 5eh) A stripped helium star component in the potential BH binary. <i>Liu, J. et al.</i> (55 authors) 2019, Nature 575, 618. (2ao, 5dg) A wide star-BH binary system from RV measurements.
PSR J0614+2229	<i>Zhang, Y.R. et al.</i> (4 authors) 2020, ApJ 890, 31. (1r*) Multifrequency study on the mode switching.
PSR J0621+1002	<i>Tang, W., Liu, D., Wang, B.</i> 2019, MNRAS 490, 752. (5e, 8acd) Evolution of a NS + He star system into an intermediate-mass binary PSR.
RX J0649.8–0737	<i>Joshi, A. et al.</i> (6 authors) 2020, MNRAS 491, 201. (1aox, 2abc, 5bcg) Optical and X-ray study of the polar.
2PBC J0658.0–1746	<i>Bernardini, F. et al.</i> (5 authors) 2019, MNRAS 489, 1044. (1ix, 2d, 5abceij) Hard X-ray eclipsing polar in the orbital period gap.
RX J0749.1–0549	<i>Joshi, A. et al.</i> (6 authors) 2020, MNRAS 491, 201. (1aox, 2abc, 5bcg) Optical and X-ray study of the polar.
IGR J08408–4503	(see LM Vel)
RX J0859.1+0537	<i>Joshi, A. et al.</i> (6 authors) 2020, MNRAS 491, 201. (1aox, 2abc, 5bcg) Optical and X-ray study of the polar.
GALEX J093448.2–251248	<i>Koen, C.</i> 2019, MNRAS 490, 1283. (1ao, 5bce, 6b) Multiband time-series of the short-period ATLAS variable: likely a reflection effect binary.
VTC J095517.5+690813	<i>Moriya, T.</i> 2019, MNRAS, 490, 1166. (8acd) Radio transient in M81 may be caused by the accretion-induced collapse of a WD.
PSR J1023+0038	(see AY Sex)
XTE J1118+480	(see KV UMa)
SDSS J120857.30+191656.5 (GWAC 20180415A)	<i>Wang, J. et al.</i> (30 authors) 2020, AJ 159, 35. (1aio, 2do, 6b) Dwarf nova superoutbursts independently identified by SVOM/GWAC in 2018.
SDSS J122405.58+184102.7	<i>Avilés, A. et al.</i> (7 authors) 2020, RMxAA 56, 11. (1ao, 2cdo) Noneclipsing CV, a probable SW Sex system.
XSS J12270–4859	<i>de Martino, D. et al.</i> (8 authors) 2020, MNRAS 492, 5607. (1rx, 5bcg) NuSTAR and Parkes observations of the millisecond PSR binary in the rotation-powered state. <i>Miraval Zanon, A. et al.</i> (5 authors) 2020, A&A 635, A30. (1ax, 8bd) High-and-low luminosity modes and peculiar low-soft-and-hard activity in the transitional PSR.
PSR B1259–63	(see CPD –63°2495)
ATO J199.6731–31.7189	<i>Koen, C.</i> 2019, MNRAS 490, 1283. (1ao, 5bce, 6b) Multiband time-series of the short-period ATLAS variable: a near-contact M dwarf binary.
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4FGL J1405.1–6119	<i>Corbetz, R.H.D. et al.</i> (11 authors) 2019, ApJ 884, 93. (1gir, 6b, 5b) HMXB with O star and NS.

2S 1417–624	<i>Ji, L. et al.</i> (116 authors) 2020, MNRAS 491, 1851. (1gx, 2cg, 8a) Timing properties.
	<i>Gupta, S., Naik, S., Jaisawal, G.K.</i> 2019, MNRAS 490, 2458. (1x, 2dx, 5i) NuSTAR view of the Be/XB PSR during the 2018 giant outburst.
	<i>Gupta, S., Naik, S., Jaisawa, K.</i> 2020, MNRAS 491, 5298. Erratum.
MAXI J1535–571	<i>Russell, T.D. et al.</i> (22 authors) 2019, ApJ 883, 198. (1r, 4b) Decoupling of disk and jet.
ZTF J153932.16+502738.8	<i>Lü, G. et al.</i> (7 authors) 2020, ApJ 890, 69. (2dx) Formation scenario of the eclipsing double WD system.
4U 1543–624	(see QU TrA)
4U 1608–52	(see QX Nor)
1RXS J162659.8–244536 (SR 24)	<i>Mayama, S. et al.</i> (69 authors) 2019, AJ 159, 12. (3bi) Misaligned disks in the hierarchical triple system.
4U 1630–472 (Nor X-1)	<i>Trueba, N. et al.</i> (8 authors) 2019, ApJ 886, 104. (1dx) Comprehensive Chandra study of the disk wind.
4U 1636–536	(see V801 Ara)
IGR J16393–4643	<i>Kabiraj, S., Islam, N., Paul, B.</i> 2020, MNRAS 491, 1491. (1x, 2bc, 5cg) Investigating a unique partial eclipse.
PSR J1640–4631	<i>Shi, H., Hu, H.-W., Chen, W.-C.</i> 2019, PASJ 71, L5. (8a) Application of a two-dipole model with an anomalous braking index.
MAXI J1659–152	<i>Rout, S.K., Vadawale, S., Méndez, M.</i> 2020, ApJL 888, L30. (1x, 2x) Retrograde spin of the BH in the LMXB.
MXB 1659–298	(see V2134 Oph)
IGR J17062–6143	<i>Hernández Santisteban, M.V. et al.</i> (11 authors) 2019, MNRAS 488, 4596. (1aioux, 2dox, 5gi, 6cd) Multi-wavelength characterization of the accreting millisecond X-ray PSR and ultracompact binary.
1RXS J170854.4–321857	<i>Armas Padilla, M., López-Navas, E.</i> 2019, MNRAS 488, 5014. (1x, 2x, 5ij) Ultra-compact NS system derived from X-ray spectroscopy.
IGR J17091–3624	<i>Gatuzz, E. et al.</i> (4 authors) 2020, MNRAS 491, 4857. (1rx, 5cgi) Detection of an intrinsic absorber and compact jet emission.
GRS 1716–249	(see V2293 Oph)
4U 1728–34 (GX 354-00)	<i>Coughenour, B.M. et al.</i> (4 authors) 2019 ApJ 889, 136. (1x, 2dx) Modeling the LMXB upper kHz QPOs with X-ray reverberation.
GRS 1739–278	(see V2606 Oph)
H 1743–322	<i>Shidatsu, M., Done, C.</i> 2019, ApJ 885, 112. (8b) Thermal wind model for LMXB absorption features.
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GRO J1750–27	<i>Rouco Escorial, A. et al.</i> (8 authors) 2019, A&A 630, A105. (2dx, 5i) Quiescent X-ray variability in the NS Be/X-ray transient.
IGR J17591–2342	<i>Gusinskaia, N.V. et al.</i> (10 authors) 2020, MNRAS 492, 1091. (1rx, 5cg) Radio and X-ray monitoring in outburst.
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SAX J1808.4–3658	(see V4580 Sgr)
MAXI J1820+070 (ASASSN-18ey)	<i>Buisson, D.J.K. et al.</i> (13 authors) 2019, MNRAS 490, 1350. (1x, 2dx, 5ci) Comparing the evolution of X-ray spectral and timing properties through the initial hard state of the outburst with NuSTAR.
	<i>Homan, J. et al.</i> (16 authors) 2020, ApJL 891, L29. (1r, 1x) Rapid change in X-Ray variability and a jet ejection.
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2A 1822–371	(see V691 CrA)
MAXI J1828–249	<i>Oda, S. et al.</i> (11 authors) 2019, PASJ 71, 108. (1ao, 2dx, 5i) BH XB candidate.
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2MASS J19072286+3748571	<i>Hoyman, B., Çakirli, Ö., Özdarcan, O.</i> 2020, MNRAS 491, 5980. (1ao, 2abc, 5acdeg) Physical properties and pulsational characteristics.
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GRS 1915+105	(see V1487 Aql)
2MASS J19165992–1625176 (EPIC 219568666)	<i>Torres, G. et al.</i> (10 authors) 2019, ApJ 887, 109. (1aioi, 2aoi, 5dek) EB/SB2 in the open cluster Ruprecht 147.
2MASS J19182607+4853028 (TIC 416264037)	<i>Wang, K., Zhang, X., Dai, M.</i> 2020, ApJ 888, 49. (1ao, 5abce) Pulsating extremely low-mass pre-WD EB.
2MASS J19291594+4637198 (KIC 9832227)	<i>Kovacs, G., Hartman, J.D., Bakos, G.A.</i> 2019, A&A 631, A126. (1ao, 5ab) The hierarchical triple nature of the former red nova precursor candidate.
PSR J2051–0827	(see LY Aqr)
GRO J2058+42	<i>Molkov, S. et al.</i> (5 authors) 2019, ApJL 883, L11. (2dx) Discovery of a pulse-phase-transient cyclotron line in the X-ray PSR.
EC 21178–5417	<i>Ruiz-Carmona, R. et al.</i> (4 authors) 2020, MNRAS 491, 344. (1ao, 2bc, 5cgi) Spiral structure of the AD.
J213056.71+442046.5	<i>Kupfer, T. et al.</i> (32 authors) 2020, ApJ 891, 45. (1aioru, 5cg, 6b) Ultra-compact Roche lobe-filling hot subdwarf binary.

SDSS J214354.59+124457.8	<i>Altan, M. et al.</i> (20 authors) 2019, MNRAS, 489 1451. (1o, 2bc, 6obd, 5bcj) Z Cam type star with superhumps in standstill.
CS 22876–032	<i>González Hernández, J.I. et al.</i> (7 authors) 2019, A&A 628, A111. (2co, 5h) The ${}^6\text{Li}/{}^7\text{Li}$ isotopic ratio in the metal-poor binary.
HE 2316–0909 (PHL 457)	<i>Baran, A.S. et al.</i> (7 authors) 2019, MNRAS 489, 1556. (1ao, 2ado, 5bcdegh) Kepler and spectroscopic observations of the sdBV+dM/bd binary.

X-ray sources with constellation or galaxy names

Aql X-1	(see V1333 Aql)
Cir X-1	(see BR Cir)
Cyg X-3	(see V1521 Cyg)
Her X-1	(see HZ Her)
M82 X-2	<i>Bachetti, M. et al.</i> (12 Authors) 2020, ApJ 891, 44. (2dx) Pulsating ULX source with ransient pulsations, spin-down, and a glitch.
NGC 1313 X-1	(see RX J0318.3–6629)
Nor X-1	(see 4U 1630–472)
Sgr X-1	(see 1RXS J174755.8–263352)
SMC X-1	(see 2MASS J01170514–7326360)
Vel X-1	(see GP Vel)

Objects with other designations

ASASSN-14ho	<i>Kato, T.</i> 2020, PASJ 72, L2. (1ao, 5i) Longest-period dwarf nova with multiple rebrightenings.
ASASSN-18ey	(see MAXI J1820+070)
AT2017gfo	(see GW170817)
AT 2018hso	<i>Cai, Y.-Z. et al.</i> (23 authors) 2019, A&A 632, L5. (1aio, 2do) The transitional gap transient: new insights into the luminous red nova phenomenon. (see 2MASS J19165992–1625176)
EPIC 219568666	<i>Jin, Z.-P et al.</i> (7 authors) 2020, Nature Astronomy 4, 77. (1aoi*, 2dx*) Possibly a kilonova associated with the GRB.
GRB 070809	<i>Gayathri, V. et al.</i> (7 authors) 2020, ApJL 890, L20. (8c) GW candidate modeled as a hierarchical BH merger.
GW170817 (AT2017gfo)	<i>Jiang, J.-L. et al.</i> (9 authors) 2019, ApJ 885, 39. (8a) NS equation of state.
	<i>Soma, S., Bandyopadhyay, D.</i> 2020, ApJ 890, 139. (8a) Properties of binary components using equations of state in finite temperature field theory models.
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GW190425	<i>Han, M.-Z. et al.</i> (8 authors) 2020, ApJL 891, L5. (8c) A NS-BH merger? <i>Kyutoku, K. et al.</i> (7 authors) 2020, ApJL 890, L4. (2dx) Possibility of being a BH-NS binary merger.
GWAC 20180415A	(see SDSS J120857.3+191656.5)
GWAC 20181017A	(see AllWISE J022506.37+080638.4)
GWAC 20181211A	(see SDSS J014823.29-004807.4)
GX 17+2	(see NP Ser)
GX 301-2	(see BP Cru)
GX 339-4	(see V821 Ara)
GX 354-00	(see 4U 1728-34)
GX 9+9	(see V2216 Oph)
HIP 45734	(see HD 81485)
HIP 109951	(see HD 211276)
KIC 2557430	(see 2MASS J19072286+3748571)
KIC 5608384	(see V754 Lyr)
KIC 9832227	(see 2MASS J19291594+4637198)
KOI-964	(see 2MASS J19135987+4759472)
KSN:BS-C11a	<i>Ridden-Harper, R. et al.</i> (10 authors) 2019, MNRAS 490, 5551. (1ao, 5bcg, 6b, 8a) Discovery of a new WZ Sge-type CV.
LB-1	(see 2MASS J06114907+2249326)
LB 283	<i>Koen, C.</i> 2019, MNRAS 490, 1283. (1ao, 5bce, 6b) Multiband time-series of the short-period ATLAS variable: likely a reflection effect binary.
LS 2883	(see CPD -63°2495)
LS 5039	(see V479 Sct)
LS V +22°25	(see 2MASS J06114907+2249326)
2M12451043+1217401	<i>Fernández-Trincado, J.G. et al.</i> (15 authors) 2019, A&A 631, A97. (2c, 5h, 6b) Discovery of a nitrogen-enhanced mildly metal-poor binary system with possible evidence for pollution from an extinct AGB star.
MACHO 80.7443.1718	(see ASASSN-V J052624.38-684705.6)
MACHO 97-BLG-28	<i>Blackman, J.W. et al.</i> (9 authors) 2020, ApJ 890, 87. (1aio*) Revised model for the stellar binary microlensing event.
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MWC 560	(see V694 Mon)
NGTS-7 Ab	<i>Jackman, J.A.G. et al.</i> (39 authors) 2019, MNRAS 489, 5146. (1ao, 2ahco, 4a, 5abcdgk, 6bd) Discovery of an ultrashort-period brown dwarf transiting a tidally locked and active M dwarf.
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OGLE LMC-ECL-6782	(see 2MASS J05045903-7031138)
Par 1802	(see V2212 Ori)
PHL 457	(see HE 2316-0909)
S190425z	<i>Pozanenko, A.S. et al.</i> (4 authors) 2019, AstL 45, 710. (1g, 2dgx) Observation of the second LIGO/Virgo event connected with a binary NS merger in the γ -ray range.

S190814bv	<i>Saleem, M. et al.</i> (4 Authors) 2020, ApJ 891, 130. (2dg) Possible relativistic jet associated with the binary NS merger candidate.
SR 24	<i>Andreoni, I. et al.</i> (52 Authors) 2020, ApJ 890, 131. (1aio) Optical/near-IR counterpart to the NS–BH merger.
SN 2006gy	(see 1RXS J162659.8–244536) <i>Jerkstrand, A., Maeda, K., Kawabata, K.S.</i> 2020, Science 367, 415. (2c) A type Ia SN at the heart of the superluminous transient. Common envelope evolution of a progenitor binary can synchronize envelope ejection and SN explosion.
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SXP 4.78	(see 2MASS J00513880–7217049)
SXP 59	(see 2MASS J00545618–7226478)
SXP 91.1	(see RX J0051.3–7216)
THOR 42	(see CRTS J055255.7–004426)
TIC 149160359	(see HD 36276)
TIC 416264037	(see 2MASS J19182607+4853028)
47 Tuc E32	<i>Thompson, I.B. et al.</i> (23 authors) 2020, MNRAS 492, 4254. (1ao, 2abc, 5abcdeg) Age and distance of the globular cluster from the photometric and spectroscopic analysis of the detached EB.
TWA 3A	<i>Tofflemire, B.M., Mathieu, R.D., Johns-Krull, C.M.</i> 2019, AJ 158, 245. (2, 5i) T Tauri binary, with evidence for preferential accretion onto the primary.
WR 121a	(see 2MASS J18473666–0156334)

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Editor-in-Chief: W. Van Hamme

Department of Physics
Florida International University
Miami, FL 33199, U.S.A.

Phone: +1 305 348-3670
Fax: +1 305 348-6700
vanhamme@fiu.edu