

Refereed Publications

- Abbott, T.M.C., A. Alarcon, S. Allam, ..., B. Hoyle, ..., J.J. Mohr, ..., J. Weller, ..., and DES Collaboration: Cosmological Constraints from Multiple Probes in the Dark Energy Survey. *Physical Review Letters* 122, 171301 (2019).
- Abbott, T.M.C., F.B. Abdalla, A. Alarcon, ..., J.J. Mohr, ..., J. Weller, R. Williamson, W.L.K. Wu, B. Yanny, O. Zahn, Y. Zhang, J. Zuntz, et al.: Dark Energy Survey year 1 results: Joint analysis of galaxy clustering, galaxy lensing, and CMB lensing two-point functions. *Physical Review D* 100, 023541 (2019).
- Abbott, T.M.C., F.B. Abdalla, A. Alarcon, ..., B. Hoyle, ..., J.J. Mohr, ..., J. Weller, et al.: Dark Energy Survey Year 1 Results: Measurement of the Baryon Acoustic Oscillation scale in the distribution of galaxies to redshift 1. *Mon. Not. R. Astron. Soc.* 483, 4866-4883 (2019).
- Abbott, T.M.C., F.B. Abdalla, S. Avila, M. Banerji, ..., B. Hoyle, J.J. Mohr, ..., J. Weller, et al.: Dark Energy Survey year 1 results: Constraints on extended cosmological models from galaxy clustering and weak lensing. *Physical Review D* 99, 123505 (2019).
- Abbott, T.M.C., S. Allam, P. Andersen, ..., B. Hoyle, ..., J.J. Mohr, et al.: First Cosmology Results using Type Ia Supernovae from the Dark Energy Survey: Constraints on Cosmological Parameters. *Ap. J. Lett.* 872, L30 (2019).
- Aguado, D.S., R. Ahumada, A. Almeida, ..., D. Coffey, ..., J. Comparat, ..., A. Del Moro, ..., T. Dwelly, ..., A. Merloni, et al.: The Fifteenth Data Release of the Sloan Digital Sky Surveys: First Release of MaNGA-derived Quantities, D. Visualization Tools, and Stellar Library. *Ap. J. Supp. Ser.* 240, 23 (2019).
- Agurto-Gangas, C., J.E. Pineda, L. Szűcs, L. Testi, M. Tazzari, A. Miotello, P. Caselli, M. Dunham, I.W. Stephens and T.L. Bourke: Revealing the dust grain size in the inner envelope of the Class I protostar Per-emb-50. *Astron. Astrophys.* 623, A147 (2019).
- Aird, J., A.L. Coil and A. Georgakakis: X-rays across the galaxy population - III. The incidence of AGN as a function of star formation rate. *Mon. Not. R. Astron. Soc.* 484, 4360-4378 (2019).
- Ajello, M., M. Arimoto, M. Axelsson, ..., A. von Kienlin, et al.: A Decade of Gamma-Ray Bursts Observed by Fermi-LAT: The Second GRB Catalog. *Ap. J.* 878, 52 (2019).
- Allevato, V., A. Viitanen, A. Finoguenov, F. Civano, H. Suh, F. Shankar, A. Bongiorno, A. Ferrara, R. Gilli, T. Miyaji, S. Marchesi, N. Cappelluti and M. Salvato: Chandra COSMOS Legacy Survey: Clustering dependence of Type 2 active galactic nuclei on host galaxy properties. *Astron. Astrophys.* 632, A88 (2019).
- Alonso-Herrero, A., S. García-Burillo, M. Pereira-Santaella, R.I. Davies, F. Combes, M. Vestergaard, S.I. Raimundo, A. Bunker, T. Díaz-Santos, P. Gandhi, I. García-Berneté, E.K.S. Hicks, S.F. Hönic, L.K. Hunt, M. Imanishi, T. Izumi, N.A. Levenson, W. Maciejewski, C. Packham, C. Ramos Almeida, C. Ricci, D. Rigopoulou, P.F. Roche, D. Rosario, M. Schartmann, A. Usero and M.J. Ward: Nuclear molecular outflow in the Seyfert galaxy NGC 3227. *Astron. Astrophys.* 628, A65 (2019).
- Alsaberi, R.Z.E., C. Maitra, M.D. Filipović, L.M. Bozzetto, F. Haberl, P. Maggi, M. Sasaki, P. Manjlović, V. Velović, P. Kavanagh, N.I. Maxted, D. Urošević, G.P. Rowell, G.F. Wong, B.-Q. For, A.N. O'Brien, T.J. Galvin, L. Staveley-Smith, R.P. Norris, T. Jarrett, R. Kothes, K.J. Luken, N. Hurley-Walker, H. Sano, D. Onić, S. Dai, T.G. Pannuti, N.F.H. Tothill, E.J. Crawford, M. Yew, I. Bojičić, H. Dénes, N. McClure-Griffiths, S. Gurovich and Y. Fukui: Discovery of a pulsar-powered bow shock nebula in the Small Magellanic Cloud supernova remnant DEM S5. *Mon. Not. R. Astron. Soc.* 486, 2507-2524 (2019).
- Alsaberi, R.Z.E., L.A. Barnes, M.D. Filipović, N.I. Maxted, H. Sano, G. Rowell, L.M. Bozzetto, S. Gurovich, D. Urošević, D. Onić, B.-Q. For, P. Manojlović, G. Wong, T.J. Galvin, P. Kavanagh, N.O. Ralph, E.J. Crawford, M. Sasaki, F. Haberl, P. Maggi, N.F.H. Tothill and Y. Fukui: Radio emission from interstellar shocks: Young type Ia supernova remnants and the case of N 103B in the Large Magellanic Cloud. *Astrophys. Space Sci.* 364, 204 (2019).
- Alves, F.O., P. Caselli, J.M. Girart, D. Segura-Cox, G.A.P. Franco, A. Schmiedeke and B. Zhao: Gas flow and accretion via spiral streamers and circumstellar disks in a young binary protostar. *Science* 366, Issue 6461, 90-93 (2019).
- Amorim, A., M. Bauböck, J.P. Berger, W. Brandner, Y. Clénet, V. Coudé Du Foresto, P.T. de Zeeuw, J. Dexter, G. Duvert, M. Ebert, A. Eckart, F. Eisenhauer, N.M. Förster Schreiber, P. Garcia, F. Gao, E. Gendron, R. Genzel, S. Gillessen, M. Habibi, X. Haubois, Th. Henning, S. Hippler, M. Horrobin, Z. Hubert, A. Jiménez Rosales, L. Jocou, P. Kervella, S. Lacour, V. Lapeyrière, J.-B. Le Bouquin, P. Léna, T. Ott, T. Paumard, K. Perraut, G. Perrin, O. Pfuhl, S. Rabien, G. Rodríguez-Coira, G. Rousset, S. Scheithauer, A. Sternberg, O. Straub, C. Straubmeier, E. Sturm, L.J. Tacconi, F. Vincent, S. von Fellenberg, I. Waisberg, F. Widmann, E. Wieprecht, E. Wieworrek, S. Yazici and Gravity Collaboration: Test of the Einstein Equivalence Principle near the Galactic Center Supermassive Black Hole. *Physical Review Letters* 122, 101102 (2019).
- Anastassopoulos, V., S. Aune, K. Barth, A. Belov, H. Bräuninger, et al.: Improved search for solar chameleons with a Grid Pix detector at CAST. *J. of Cosmology and Astroparticle Phys.* 2019, 032 (2019).
- Andersen, B.C., I.W. Stephens, M.M. Dunham, R. Pokhrel, J.K. Jørgensen, S. Frimann, D. Segura-Cox, P.C. Myers, T.L. Bourke, J.J. Tobin and Ł. Tychoniec: The Mass Evolution of Protostellar Disks and Envelopes in the Perseus Molecular Cloud. *Ap. J.* 873, 54 (2019).
- Angus, C.R., M. Smith, M. Sullivan, ..., B. Hoyle, ..., and DES Collaboration: Superluminous supernovae from the

- Dark Energy Survey. *Mon. Not. R. Astron. Soc.* 487, 2215-2241 (2019).
- Anselmi, A., P.S. Corasaniti, A.G. Sánchez, G.D. Starkman, R. Sheth and I. Zehavi: Cosmic distance inference from purely geometric BAO methods: Linear point standard ruler and correlation function model fitting. *Phys. Rev. (D)*, 123515, (2019).
- Antoniou, V., A. Zezas, J.J. Drake, C. Badenes, F. Haberl, N.J. Wright, J. Hong, R. Di Stefano, T.J. Gaetz, K.S. Long, P.P. Plucinsky, M. Sasaki, B.F. Williams, P.F. Winkler and SMC XVP collaboration: Deep Chandra Survey of the Small Magellanic Cloud. III. Formation Efficiency of High-mass X-Ray Binaries. *Ap. J.* 887, 20 (2019).
- Arcodia, R., A. Merloni, K. Nandra and G. Ponti: Testing the disk-corona interplay in radiatively-efficient broad-line AGN. *Astron. Astrophys.* 628, A135, (2019).
- Arguedas Cuendis, S., J. Baier, K. Barth, S. Baum, A. Bayirli, A. Belov, H. Bräuninger, et al.: First results on the search for chameleons with the KWISP detector at CAST. *Physics of the Dark Universe* 26, 100367 (2019).
- Arora, N., M. Fossati, F. Fontanot, M. Hirschmann and D.J. Wilman: On the role of supermassive black holes in quenching star formation in local central galaxies. *Mon. Not. R. Astron. Soc.* 489, 1606-1618 (2019).
- Arthur, J., F.R. Pearce, M.E. Gray, A. Knebe, W. Cui, P.J. Elahi, C. Power, G. Yepes, A. Arth, M. De Petris, K. Dolag, L. Garratt-Smithson, L.J. Old, E. Rasia and A.R.H. Stevens: THETHREEHUNDRED Project: ram pressure and gas content of haloes and subhaloes in the phase-space plane. *Mon. Not. R. Astron. Soc.* 484, 3968-3983 (2019).
- Auddy, S., P.C. Myers, S. Basu, J. Harju, J.E. Pineda and R.K. Friesen: Magnetic Field Structure of Dense Cores Using Spectroscopic Methods. *Ap. J.* 872, 207 (2019).
- Balaguera-Antolínez, A., F.-S. Kitaura, M. Pellejero-Ibáñez, M. Lippich, C. Zhao, A.G. Sánchez, C.D. Vecchia, R.E. Angulo and M. Crocce: One simulation to have them all: performance of the Bias Assignment Method against N-body simulations. *Mon. Not. R. Astron. Soc.* 491(2) (2019).
- Baldi, A.S., H. Bourdin, P. Mazzotta, D. Eckert, S. Ettori, M. Gaspari and M. Roncarelli: Spectral imaging of the thermal Sunyaev-Zel'dovich effect in X-COP galaxy clusters: method and validation. *Astron. Astrophys.* 630, A121 (2019).
- Barnes, A.T., S.N. Longmore, A. Avison, Y. Contreras, A. Ginsburg, J.D. Henshaw, J.M. Rathborne, D.L. Walker, J. Alves, J. Bally, C. Battersby, M.T. Beltrán, H. Beuther, G. Garay, L. Gomez, J. Jackson, J. Kainulainen, J.M.D. Kruijssen, X. Lu, E.A.C. Mills, J. Ott and T. Peters: Young massive star cluster formation in the Galactic Centre is driven by global gravitational collapse of high-mass molecular clouds. *Mon. Not. R. Astron. Soc.* 486, 283-303 (2019).
- Barnett, R., S.J. Warren, D.J. Mortlock, ..., J. Graciá-Carpio, F. Grupp, et al.: Euclid preparation - V. Predicted yield of redshift $7 < z < 9$ quasars from the wide survey. *Astron. Astrophys.* 631, A85 (2019).
- Barro, G., P.G. Pérez-González, A. Cava, G. Brammer, V. Pandya, C. Eliche Moral, P. Esquej, H. Domínguez-Sánchez, B. Alcalde Pampliega, Y. Guo, A.M. Koekemoer, J.R. Trump, M.L.N. Ashby, N. Cardiel, M. Castellano, C.J. Conselice, M.E. Dickinson, T. Dolch, J.L. Donley, N. Espino Briones, S.M. Faber, G.G. Fazio, H. Ferguson, S. Finkelstein, A. Fontana, A. Galametz, J.P. Gardner, E. Gawiser, M. Giavalisco, A. Grazian, N.A. Grogin, N.P. Hathi, S. Hemmati, A. Hernán-Caballero, D. Kocevski, D.C. Koo, D. Kodra, K.-S. Lee, L. Lin, R.A. Lucas, B. Mobasher, E.J. McGrath, K. Nandra, H. Nayyeri, J.A. Newman, J. Pforr, M. Peth, M. Rafelski, L. Rodríguez-Munoz, M. Salvato, M. Stefanon, A. van der Wel, S.P. Willner, T. Wiklind and S. Wuyts: The CANDELS/SHARDS Multiwavelength Catalog in GOODS-N: Photometry, Photometric Redshifts, Stellar Masses, Emission-line Fluxes, and Star Formation Rates. *Ap. J. Supp. Ser.* 243, 22 (2019).
- Bates, D.J., R. Tojeiro, J.A. Newman, V. Gonzalez-Perez, J. Comparat, D.P. Schneider, M. Lima and A. Streblyanska: Mass functions, luminosity functions, and completeness measurements from clustering redshifts. *Mon. Not. R. Astron. Soc.* 486, 3059-3077 (2019).
- Battisti, A.J., E. da Cunha, K. Grasha, M. Salvato, E. Daddi, L. Davies, S. Jin, D. Liu, E. Schinnerer, M. Vaccari and COSMOS Collaboration: MAGPHYS+photo-z: Constraining the Physical Properties of Galaxies with Unknown Redshifts. *Ap. J.* 882, 61 (2019).
- Bauböck, M., D. Psaltis and F. Özel: Atmospheric Structure and Radiation Pattern for Neutron-star Polar Caps Heated by Magnetospheric Return Currents. *Ap. J.* 872, 162 (2019).
- Baxter, E.J., Y. Omori, C. Chang, ..., and J. Weller: Dark Energy Survey Year 1 results: Methodology and projections for joint analysis of galaxy clustering, galaxy lensing, and CMB lensing two-point functions. *Physical Review D*, 99(2) (2019).
- Bégué, D., C. Stahl and S.-S. Xue: A model of interacting dark fluids tested with supernovae and Baryon Acoustic Oscillations data. *Nuclear Physics B* 940, 312-320 (2019).
- Behrendt, M., M. Schartmann and A. Burkert: The possible hierarchical scales of observed clumps in high-redshift disc galaxies. *Mon. Not. R. Astron. Soc.* 488, 306-323 (2019).
- Belli, S., A.B. Newman and R.S. Ellis: MOSFIRE Spectroscopy of Quiescent Galaxies at $1.5 < z < 2.5$. II. Star Formation Histories and Galaxy Quenching. *Ap. J.* 874, 17 (2019).
- Ben Khalifa, M., E. Sahnoun, L. Wiesenfeld, F. Khadri, K. Hammami, O. Dulieu, S. Spezzano and P. Caselli: Rotational (de)-excitation of cyclic and linear C_3H_2 by collision with He. *Physical Chemistry Chemical Physics* 21, 1443-1453 (2019).
- Berlato, F., J. Greiner and J.M. Burgess: Improved Fermi-GBM GRB localizations using BALROG. *Ap. J.* 873(1), 60 (2019).
- Bhattacharya, S., M. Arnaboldi, J. Hartke, O. Gerhard, V. Comte, A. McConnachie and N. Caldwell: The survey of

planetary nebulae in Andromeda (M 31). I. Imaging the disc and halo with MegaCam at the CFHT. *Astron. Astrophys.* 624, A132 (2019).

Bhattacharya, S., M. Arnaboldi, N. Caldwell, O. Gerhard, M. Blaña, A. McConnachie, J. Hartke, P. Guhathakurta, C. Pulsoni and K.C. Freeman: The survey of planetary nebulae in Andromeda (M 31). II. Age-velocity dispersion relation in the disc from planetary nebulae. *Astron. Astrophys.* 631, A56 (2019).

Bialy, S., D. Neufeld, M. Wolfire, A. Sternberg and B. Burkhart: Chemical Abundances in a Turbulent Medium - H_2 , OH^+ , H_2O^+ , ArH^+ . *Ap. J.* 885, 109 (2019).

Bialy, S. and A. Sternberg: Thermal phases of the neutral atomic interstellar medium from solar metallicity to primordial gas. *Ap. J.* 881(2), 160 (2019).

Bisbas, T.G., A. Schrubba and E.F. van Dishoeck: Simulating the atomic and molecular content of molecular clouds using probability distributions of physical parameters. *Mon. Not. R. Astron. Soc.* 485, 3097-3111 (2019).

Blot, L., M. Crocce, E. Sefusatti, M. Lippich, A.G. Sánchez, M. Colavincenzo, P. Monaco, M.A. Alvarez, A. Agrawal, S. Avila, A. Balaguera-Antolínez, R. Bond, S. Codis, C. Dalla Vecchia, A. Dorta, P. Fosalba, A. Izard, F. Kitaura, M. Pellejero-Ibanez, G. Stein, M. Vakili and G. Yepes: Comparing approximate methods for mock catalogues and covariance matrices II: power spectrum multipoles. *Mon. Not. R. Astron. Soc.* 485, 2806-2824 (2019).

Bocquet, S., J.P. Dietrich, T. Schrabback, ..., E. Bulbul, ..., S. Grandis, N. Gupta, ..., J.J. Mohr, et al.: Cluster Cosmology Constraints from the 2500 deg² SPT-SZ Survey: Inclusion of Weak Gravitational Lensing Data from Magellan and the Hubble Space Telescope. *Ap. J.* 878, 55 (2019).

Bogdanov, S., S. Guillot, P.S. Ray, M.T. Wolff, D. Chakrabarty, W.C.G. Ho, M. Kerr, F.K. Lamb, A. Lommen, R.M. Ludlam, R. Milburn, S. Montano, M.C. Miller, M. Bauböck, F. Özel, D. Psaltis, R.A. Remillard, T.E. Riley, J.F. Steiner, T.E. Strohmayer, A.L. Watts, K.S. Wood, J. Zeldes, T. Enoto, T. Okajima, J.W. Kellogg, C. Baker, C.B. Markwardt, Z. Arzoumanian and K.C. Gendreau: Constraining the Neutron Star Mass-Radius Relation and Dense Matter Equation of State with NICER. I. The Millisecond Pulsar X-Ray Data Set. *Ap. J. Lett.* 887, L25 (2019).

Boller, Th, P.O. Hess, A. Müller and H. Stöcker: Predictions of the pseudo-complex theory of gravity for EHT observations - I. Observational tests. *Mon. Not. R. Astron. Soc.* 485, L34-L37 (2019).

Bolmer, J., C. Ledoux, P. Wiseman, A. De Cia, J. Selsing, P. Schady, J. Greiner, S. Savaglio, J.M. Burgess, V. D'Elia, J.P.U. Fynbo, P. Goldoni, D.H. Hartmann, K.E. Heintz, P. Jakobsson, J. Japelj, L. Kaper, N.R. Tanvir, P.M. Vreeswijk and T. Zafar: Evidence for diffuse molecular gas and dust in the hearts of gamma-ray burst host galaxies. Unveiling the nature of high-redshift damped Lyman- α systems. *Astron. Astrophys.* 623, A43 (2019).

Boselli, A., M. Fossati, A. Longobardi, G. Consolandi, P. Amram, M. Sun, P. Andreani, M. Boquien, J. Braine, F. Combes, P. Côté, J.C. Cuillandre, P.A. Duc, E. Emsellem,

L. Ferrarese, G. Gavazzi, S. Gwyn, G. Hensler, E.W. Peng, H. Plana, J. Roediger, R. Sanchez-Janssen, M. Sarzi, P. Serra and G. Trinchieri: A Virgo Environmental Survey Tracing Ionised Gas Emission (VESTIGE). V. Properties of the ionised gas filament of M 87. *Astron. Astrophys.* 623, A52 (2019).

Bosman, A.D., A. Banzatti, S. Bruderer, A.G.G.M. Tielens, G.A. Blake and E.F. van Dishoeck: Probing planet formation and disk substructures in the inner disk of Herbig Ae stars with CO rovibrational emission. *Astron. Astrophys.* 631, A133 (2019).

Botteon, A., T.W. Shimwell, A. Bonafede, D. Dallacasa, F. Gastaldello, D. Eckert, G. Brunetti, T. Venturi, R.J. van Weeren, S. Mandal, M. Brüggén, R. Cassano, F. de Gasperin, A. Drabent, C. Dumba, H.T. Intema, D.N. Hoang, D. Rafferty, H.J.A. Röttgering, F. Savini, A. Shulevski, A. Stroe and A. Wilber: The spectacular cluster chain Abell 781 as observed with LOFAR, GMRT, and XMM-Newton. *Astron. Astrophys.* 622, A19 (2019).

Bower, G.C., J. Dexter, K. Asada, C.D. Brinkerink, H. Falcke, P. Ho, M. Inoue, S. Markoff, D.P. Marrone, S. Matsushita, M. Moscibrodzka, M. Nakamura, A. Peck and R. Rao: ALMA Observations of the Terahertz Spectrum of Sagittarius A*. *Ap. J. Lett.* 881, L2 (2019).

Boyce, H., D. Haggard, G. Witzel, S.P. Willner, J. Neilsen, J.L. Hora, S. Markoff, G. Ponti, F. Baganoff, E.E. Becklin, G.G. Fazio, P. Lowrance, M.R. Morris and H.A. Smith: Simultaneous X-Ray and Infrared Observations of Sagittarius A*'s Variability. *Ap. J.* 871, 161 (2019).

Brescia, M., M. Salvato, S. Cavuoti, T.T. Ananna, G. Riccio, S.M. La Massa, C.M. Urry and G. Longo: Photometric redshifts for X-ray-selected active galactic nuclei in the eROSITA era. *Mon. Not. R. Astron. Soc.* 489, 663-680 (2019).

Brout, D., D. Scolnic, R. Kessler, ..., B. Hoyle, ..., and DES Collaboration: First Cosmology Results Using SNe Ia from the Dark Energy Survey: Analysis, Systematic Uncertainties, and Validation. *Ap. J.* 874, 150 (2019).

Brown, M.J.I., K.J. Duncan, H. Landt, M. Kirk, C. Ricci, N. Kamraj, M. Salvato and T. Ananna: The spectral energy distributions of active galactic nuclei. *Mon. Not. R. Astron. Soc.* 489, 3351-3367 (2019).

Buchner, J., M. Brightman, K. Nandra, R. Nikutta and F.E. Bauer: X-ray spectral and eclipsing model of the clumpy obscurer in active galactic nuclei. *Astron. Astrophys.* 629, A16 (2019).

Bulbul, E., I.-Non Chiu, J.J. Mohr, M. McDonald, B. Benson, M.W. Bautz, M. Bayliss, L. Bleem, M. Brodwin, S. Bocquet, R. Capasso, J.P. Dietrich, B. Forman, J. Hlavacek-Larrondo, W.L. Holzapfel, G. Khullar, M. Klein, R. Kraft, E.D. Miller, C. Reichardt, A. Saro, K. Sharon, B. Stalder, T. Schrabback and A. Stanford: X-Ray Properties of SPT-selected Galaxy Clusters at $0.2 < z < 1.5$ Observed with XMM-Newton. *Ap. J.* 871, 50 (2019).

Burgess, J.M., D. Bégué, J. Greiner, A. Bacelj, F. Berlato and D. Giannios: Gamma-ray bursts as cool synchrotron sources. *Nature Astronomy*, 4(2), 174-179 (2019).

- Burgess, J.M., M. Kole, F. Berlato, J. Greiner, G. Vianello, N. Produit, Z.H. Li and J.C. Sun: Time-resolved GRB polarization with POLAR and GBM. Simultaneous spectral and polarization analysis with synchrotron emission. *Astron. Astrophys.* 627, A105 (2019).
- Burgess, J.M.: Is spectral width a reliable measure of GRB emission physics?. *Astron. Astrophys.* 629, A69 (2019).
- Burgess, J.M., J. Greiner, D. Bégué and F. Berlato: A Bayesian Fermi-GBM short GRB spectral catalogue. *Mon. Not. R. Astron. Soc.* 490, 927-946 (2019).
- Burkhardt, A.M., C.N. Shingledecker, R.A. Le Gal, B.A. McGuire, A.J. Remijan and E. Herbst: Modeling C-Shock Chemistry in Isolated Molecular Outflows. *Ap. J.* 881, 32, (2019).
- Burkhardt, A.M., C.N. Shingledecker, R. Le Gal, B.A. McGuire, A.J. Remijan and E. Herbst: Modeling C-shock Chemistry in Isolated Molecular Outflows. *Ap. J.* 881, 32 (2019).
- Burns, E., A. Goldstein, C.M. Hui, ..., A. von Kienlin, et al.: A Fermi Gamma-Ray Burst Monitor Search for Electromagnetic Signals Coincident with Gravitational-wave Candidates in Advanced LIGO's First Observing Run. *Ap. J.* 871, 90 (2019).
- Bøgelund, E.G., A.G. Barr, V. Taquet, N.F.W. Ligterink, M.V. Persson, M.R. Hogerheijde and E.F. van Dishoeck: Molecular complexity on disc scales uncovered by ALMA. Chemical composition of the high-mass protostar AFGL 4176. *Astron. Astrophys.* 628, A2 (2019).
- Bøgelund, E.G., B.A. McGuire, M.R. Hogerheijde, E.F. van Dishoeck and N.F.W. Ligterink: Methylamine and other simple N-bearing species in the hot cores NGC 6334I MM1-3. *Astron. Astrophys.* 624, A82 (2019).
- Calderón, D., J. Cuadra, M. Schartmann, A. Burkert and Russell, C.M.P.: Stellar winds pump the heart of the Milky Way. *Ap. J. Letters* 888(1), L2 (2019).
- Calderone, G., K. Boutsia, S. Cristiani, A. Grazian, R. Amorin, V. D'Odorico, G. Cupani, F. Fontanot and M. Salvato: Finding the Brightest Cosmic Beacons in the Southern Hemisphere. *Ap. J.* 887, 268 (2019).
- Camacho, H., N. Kokron, F. Andrade-Oliveira, ..., B. Hoyle, ..., and DES Collaboration: Dark Energy Survey Year 1 results: measurement of the galaxy angular power spectrum. *Mon. Not. R. Astron. Soc.* 487, 3870-3883 (2019).
- Capasso, R., A. Saro, J.J. Mohr, A. Biviano, S. Bocquet, V. Strazzullo, S. Grandis, D.E. Applegate, M.B. Bayliss, B.A. Benson, L.E. Bleem, M. Brodwin, E. Bulbul, J.E. Carlstrom, I. Chiu, J.P. Dietrich, N. Gupta, T. de Haan, J. Hlavacek-Larrondo, M. Klein, A. von der Linden, M. McDonald, D. Rapetti, C.L. Reichardt, K. Sharon, B. Stalder, S.A. Stanford, A.A. Stark, C. Stern and A. Zenteno: Galaxy kinematics and mass calibration in massive SZE-selected galaxy clusters to $z = 1.3$. *Mon. Not. R. Astron. Soc.* 482, 1043-1061 (2019).
- Capasso, R., J.J. Mohr, A. Saro, A. Biviano, N. Clerc, A. Finoguenov, S. Grandis, C. Collins, G. Erfanianfar, S. Damsted, C. Kirkpatrick and A. Kukkola: Mass calibration of the CODEX cluster sample using SPIDERS spectroscopy - I. The richness-mass relation. *Mon. Not. R. Astron. Soc.* 486, 1594-1607 (2019).
- Carpano, S., F. Haberl and C. Maitra: New outburst from the luminous supersoft source SSS1 in NGC 300 with periodic modulation. *Mon. Not. R. Astron. Soc.* 490, 4804-4810 (2019).
- Carrasco-González, C., A. Sierra, M. Flock, Z. Zhu, T. Henning, C. Chandler, R. Galván-Madrid, E. Macías, G. Anglada, H. Linz, M. Osorio, L.F. Rodríguez, L. Testi, J.M. Torrelles, L. Pérez and Y. Liu: The Radial Distribution of Dust Particles in the HL Tau Disk from ALMA and VLA Observations. *Ap. J.* 883, 71 (2019).
- Caselli, P., J.E. Pineda, B. Zhao, M.C. Walmsley, E. Keto, M. Tafalla, A. Chacón-Tanarro, T.L. Bourke, R. Friesen, D. Galli and M. Padovani: The Central 1000 au of a Pre-stellar Core Revealed with ALMA. I. 1.3 mm Continuum Observations. *Ap. J.* 874, 89 (2019).
- Caselli, P., O. Sipilä and J. Harju: Deuterated forms of H_3^+ and their importance in astrochemistry. *Philosophical Transactions of the Royal Society A*, Vol. 377, Issue 2154, id.20180401 (2019).
- Cavalié, T., V. Hue, P. Hartogh, R. Moreno, E. Lellouch, H. Feuchtgruber, C. Jarchow, T. Cassidy, L.N. Fletcher, F. Billebaud, M. Dobrijevic, L. Rezac, G.S. Orton, M. Rengel, T. Fouchet and S. Guerlet: Herschel map of Saturn's stratospheric water, delivered by the plumes of Enceladus. *Astron. Astrophys.* 630, A87 (2019).
- Cazzoletti, P., C.F. Manara, H. Baobab Liu, E.F. van Dishoeck, S. Facchini, J.M. Alcalà, M. Ansdell, L. Testi, J.P. Williams, C. Carrasco-González, R. Dong, J. Forbrich, M. Fukagawa, R. Galván-Madrid, N. Hirano, M. Hogerheijde, Y. Hasegawa, T. Muto, P. Pinilla, M. Takami, M. Tamura, M. Tazzari and J.P. Wisniewski: ALMA survey of Class II protoplanetary disks in Corona Australis: a young region with low disk masses. *Astron. Astrophys.* 626, A11 (2019).
- Chacón-Tanarro, A., J.E. Pineda, P. Caselli, L. Bizzocchi, R.A. Gutermuth, B.S. Mason, A.I. Gómez-Ruiz, J. Harju, M. Devlin, S.R. Dicker, T. Mroczkowski, C.E. Romero, J. Sievers, S. Stanchfield, S. Offner and D. Sánchez-Argüelles: Dust opacity variations in the pre-stellar core L1544. *Astron. Astrophys.* 623, A118 (2019).
- Chacón-Tanarro, A., P. Caselli, L. Bizzocchi, J.E. Pineda, O. Sipilä, A. Vasyunin, S. Spezzano, A. Punanova, B.M. Giuliano and V. Lattanzi: Mapping deuterated methanol toward L1544. I. Deuterium fraction and comparison with modeling. *Astron. Astrophys.* 622, A141 (2019).
- Chantzos, J., S. Spezzano, C. Endres, L. Bizzocchi, V. Lattanzi, J. Laas, A. Vasyunin and P. Caselli: Rotational spectroscopy of the HCCO and DCCO radicals in the millimeter and submillimeter range. *Astron. Astrophys.* 621, A111, (2019).
- Chen, C.-Y., S. Storm, Z.-Y. Li, L.G. Mundy, D. Frayer, J. Li, S. Church, R. Friesen, A.I. Harris, L.W. Looney, S. Offner, E.C. Ostriker, J.E. Pineda, J. Tobin and H.-H. Chen: Investigating the complex velocity structures within dense mo-

- lecular cloud cores with GBT-Argus. *Mon. Not. R. Astron. Soc.* 490, 527-539 (2019).
- Chen, H.-H.-H., J.E. Pineda, S.S.R. Offner, A.A. Goodman, A. Burkert, R.K. Friesen, E. Rosolowsky, S. Scibelli and Y. Shirley: Droplets. II. Internal velocity structures and potential rotational motions in pressure-dominated coherent structures. *Ap. J.* 886(2), 119 (2019).
- Chira, R.-A., J.C. Ibáñez-Mejía, M.-M. MacLow and Th. Henning: How do velocity structure functions trace gas dynamics in simulated molecular clouds?. *Astron. Astrophys.* 630, A97 (2019).
- Chon, G., H. Boehringer, S. Dasadia, M. Kluge, M. Sun, Forman, W.R. and C. Jones: Interaction of the massive cluster system Abell 3016/3017 embedded in a cosmic filament. *Astron. Astrophys.* 621, A77 (2019).
- Chung, E.J., C.W. Lee, S. Kim, G. Kim, P. Caselli, M. Tafalla, P.C. Myers, A. Soam, T. Liu, M. Gopinathan, M. Kim, K.H. Kim, W. Kwon, H. Kang and C. Lee: TRAO Survey of Nearby Filamentary Molecular Clouds, the Universal Nursery of Stars (TRAO FUNS). I. Dynamics and Chemistry of L1478 in the California Molecular Cloud. *Ap. J.* 877, 114 (2019).
- Clarke, J.P., C. Wegg, O. Gerhard, L.C. Smith, P.W. Lucas and S.M. Wylie: The Milky Way bar/bulge in proper motions: a 3D view from VIRAC and Gaia. *Mon. Not. R. Astron. Soc.* 489, 3519-3538 (2019).
- Couedel, L., V. Nosenko, S. Zhdanov, A. Ivlev, I. Laut, E. Yakovlev, N. Kryuchkov, P. Ovcharov, A. Lipaev and S. Yurchenko: Experimental studies of two-dimensional complex plasma crystals: waves and instabilities. *Physics-Uspekhi* 62, 1000-1011 (2019).
- Coffey, D., M. Salvato, A. Merloni, Th. Boller, K. Nandra, T. Dwelly, J. Comparat, A. Schulze, A. Del Moro and D.P. Schneider: SDSS-IV/SPIDERS: A catalogue of X-ray selected AGN properties. Spectral properties and black hole mass estimates for SPIDERS SDSS DR14 type 1 AGN. *Astron. Astrophys.* 625, A123 (2019).
- Colavincenzo, M., E. Sefusatti, P. Monaco, L. Blot, M. Crocce, M. Lippich, A.G. Sánchez, M.A. Alvarez, A. Agrawal, S. Avila, A. Balaguera-Antolínez, R. Bond, S. Codis, C. Dalla Vecchia, A. Dorta, P. Fosalba, A. Izard, F.-S. Kitaura, M. Pellejero-Ibanez, G. Stein, M. Vakili and G. Yepes: Comparing approximate methods for mock catalogues and covariance matrices - III: bispectrum. *Mon. Not. R. Astron. Soc.* 482, 4883-4905 (2019).
- Colzi, L., F. Fontani, P. Caselli, S. Leurini, L. Bizzocchi and G. Quaja: First interferometric study of enhanced N-fractionation in N_2H^+ : the high-mass star-forming region IRAS 05358+3543. *Mon. Not. R. Astron. Soc.* 485, 5543-5558 (2019).
- Comparat, J., A. Merloni, M. Salvato, K. Nandra, T. Boller, A. Georgakakis, A. Finoguenov, T. Dwelly, J. Buchner, A. Del Moro, N. Clerc, Y. Wang, G. Zhao, F. Prada, G. Yepes, M. Brusa, M. Krumpel and T. Liu: Active galactic nuclei and their large-scale structure: an eROSITA mock catalogue. *Mon. Not. R. Astron. Soc.* 487, 2005-2029 (2019).
- Cooke, K.C., J.S. Kartaltepe, K.D. Tyler, B. Darvish, C.M. Casey, O. LeFèvre, M. Salvato and N. Scoville: Stellar Mass Growth of Brightest Cluster Galaxy Progenitors in COSMOS Since $z \sim 3$. *Ap. J.* 881, 150 (2019).
- Correa, C.M., D.J. Paz, N.D. Padilla, A.N. Ruiz, R.E. Angulo and A.G. Sánchez: Non-fiducial cosmological test from geometrical and dynamical distortions around voids. *Mon. Not. R. Astron. Soc.* 485, 5761-5772 (2019).
- Cosentino, G., I. Jiménez-Serra, P. Caselli, J.D. Henshaw, A.T. Barnes, J.C. Tan, S. Viti, F. Fontani and B. Wu: Interstellar Plunging Waves: ALMA resolves the physical structure of nonstationary MHD shocks. *Ap. J. Letters* 881(2), L42 (2019).
- Costanzi, M., E. Rozo, E.S. Rykoff, A. Farahi, T. Jeltema, A.E. Evrard, A. Mantz, R. Mandelbaum, J. De Rose, T. McClintock, T.N. Varga, Y. Zhang, J. Weller, R.H. Wechsler and M. Aguena: Modelling projection effects in optically selected cluster catalogues. *Mon. Not. R. Astron. Soc.* 482, 490-505 (2019).
- Costanzi, M., E. Rozo, M. Simet, ..., J. Weller, ..., B. Hoyle, ..., J.J. Mohr, et al.: Methods for cluster cosmology and application to the SDSS in preparation for DES Year 1 release. *Mon. Not. R. Astron. Soc.* 488, 4779-4800 (2019).
- Coutens, A., H.B. Liu, I. Jiménez-Serra, T.L. Bourke, J. Forbrich, M. Hoare, L. Loinard, L. Testi, M. Audard, P. Caselli, A. Chacón-Tanarro, C. Codella, J. Di Francesco, F. Fontani, M. Hogerheijde, A. Johansen, D. Johnstone, S. Maddison, O. Panić, L.M. Pérez, L. Podio, A. Punanova, J.M.C. Rawlings, D. Semenov, M. Tazzari, J.J. Tobin, M.H.D. van der Wiel, H.J. van Langevelde, W. Vlemmings, C. Walsh and D. Wilner: VLA cm-wave survey of young stellar objects in the Oph A cluster: constraining extreme UV- and X-ray-driven disk photoevaporation. A pathfinder for Square Kilometre Array studies. *Astron. Astrophys.* 631, A58 (2019).
- Coutens, A., N.F.W. Ligterink, J.-C. Loison, V. Wakelam, H. Calcutt, M.N. Drozdovskaya, J.K. Jørgensen, H.S.P. Müller, E.F. van Dishoeck and S.F. Wampfler: The ALMA-PILS survey: First detection of nitrous acid (HONO) in the interstellar medium. *Astron. Astrophys.* 623, L13 (2019).
- Cova, F., F. Gastaldello, D.R. Wik, W. Boschini, A. Botteon, G. Brunetti, D.A. Buote, S. De Grandi, D. Eckert, S. Ettori, L. Ferretti, M. Gaspari, S. Ghizzardi, G. Giovannini, M. Girardi, F. Govoni, S. Molendi, M. Murgia, M. Rossetti and V. Vacca: A joint XMM-NuSTAR observation of the galaxy cluster Abell 523: Constraints on inverse Compton emission. *Astron. Astrophys.* 628, A83 (2019).
- Cridland, A.J., E.F. van Dishoeck, M. Alessi and R.E. Pudritz: Connecting planet formation and astrochemistry - A main sequence for C/O in hot exoplanetary atmospheres. *Astron. Astrophys.* 632, A163 (2019).
- Cuello, N., M. Montesinos, S.M. Stammerl, F. Louvet and J. Cuadra: Dusty spirals triggered by shadows in transition discs. *Astron. Astrophys.* 622, A43 (2019).
- Dall'Olio, D., W.H.T. Vlemmings, M.V. Persson, F. de Oliveira Alves, H. Beuther, J.M. Girart, G. Surcis, J.M. Torrelles and H.J. Van Langevelde: ALMA reveals the magnetic

- field evolution in the high-mass star forming complex G9.62+0.19. *Astron. Astrophys.* 626, A36 (2019).
- Dametto, N.Z., R. Riffel, L. Colina, R.A. Riffel, J. Piqueras López, R.I. Davies, L. Burtscher, R.B. Menezes, S. Arribas, M.G. Pastoriza, A. Labiano, T. Storchi-Bergmann, L.G. Dahmer-Hahn and D.A. Sales: A SINFONI view of the nuclear activity and circumnuclear star formation in NGC 4303 - II. Spatially resolved stellar populations. *Mon. Not. R. Astron. Soc.* 482, 4437-4453 (2019).
- D'Angelo, M., S. Cazaux, I. Kamp, W.-F. Thi and P. Woitke: Water delivery in the inner solar nebula - Monte Carlo simulations of forsterite hydration. *Astron. Astrophys.* 622, A208 (2019).
- Davies, R.L., N.M. Förster Schreiber, H. Übler, R. Genzel, D. Lutz, A. Renzini, S. Tacchella, L.J. Tacconi, S. Belli, A. Burkert, C.M. Carollo, R.I. Davies, R. Herrera-Camus, S.J. Lilly, C. Mancini, T. Naab, E.J. Nelson, S.H. Price, T.T. Shimizu, A. Sternberg, E. Wisnioski and S. Wuyts: Kiloparsec Scale Properties of Star Formation Driven Outflows at $z \sim 2.3$ in the SINS/zC-SINF AO Survey. *Ap. J.* 873, 122 (2019).
- De Cicco, D., M. Paolillo, S. Falocco, M. Poulain, W.N. Brandt, F.E. Bauer, F. Vagnetti, G. Longo, A. Grado, F. Ragosta, M.T. Botticella, G. Pignata, M. Vaccari, M. Radovich, M. Salvato, G. Covone, N.R. Napolitano, L. Marchetti and P. Schipani: Optically variable AGN in the three-year VST survey of the COSMOS field. *Astron. Astrophys.* 627, A33 (2019).
- De Marco, B. and G. Ponti: Observations of X-ray reverberation around black holes. *Astron. Nachr.* 340, 290-295 (2019).
- de Nicola, S., A. Marconi and G. Longo: The fundamental relation between supermassive black holes and their host galaxies. *Mon. Not. R. Astron. Soc.* 490, 600-612 (2019).
- de la Villarmois, A.E., J.K. Jørgensen, L.E. Kristensen, E.A. Bergin, D. Harsono, N. Sakai, E.F. van Dishoeck and S. Yamamoto: Physical and chemical fingerprint of protostellar disc formation. *Astron. Astrophys.* 626, A71 (2019).
- De Rosa, A., P. Uttley, L.J. Gou, ..., C.C. Jin, et al.: Accretion in strong field gravity with eXTP. *Science China Physics, Mechanics, and Astronomy* 62, 29504 (2019).
- Dexter, J., S. Xin, Y. Shen, C.J. Grier, T. Liu, S. Gezari, I.D. McGreer, W.N. Brandt, P.B. Hall, K. Horne, T. Simm, A. Merloni, P.J. Green, M. Vivek, J.R. Trump, Y. Homayouni, B.M. Peterson, D.P. Schneider, K. Kinemuchi, K. Pan and D. Bizyaev: The Sloan Digital Sky Survey Reverberation Mapping Project: Accretion and Broad Emission Line Physics from a Hypervariable Quasar. *Ap. J.* 885, 44 (2019).
- Dexter, J. and M.C. Begelman: Extreme AGN variability: evidence of magnetically elevated accretion?. *Mon. Not. R. Astron. Soc.* 483, L17-L21 (2019).
- Dey, A., D.J. Schlegel, D. Lang, ..., J. Comparat, et al.: Overview of the DESI Legacy Imaging Surveys. *Astron. J.* 157, 168 (2019).
- Dietrich, J.P., S. Bocquet, T. Schrabback, D. Applegate, H. Hoekstra, S. Grandis, J.J. Mohr, S.W. Allen, M.B. Bayliss, B.A. Benson, L.E. Bleem, M. Brodwin, E. Bulbul, R. Capasso, I. Chiu, T.M. Crawford, A.H. Gonzalez, T. de Haan, M. Klein, A. von der Linden, A.B. Mantz, D.P. Marrone, M. McDonald, S. Raghunathan, D. Rapetti, C.L. Reichardt, A. Saro, B. Stalder, A. Stark, C. Stern and C. Stubbs: Sunyaev-Zel'dovich effect and X-ray scaling relations from weak lensing mass calibration of 32 South Pole Telescope selected galaxy clusters. *Mon. Not. R. Astron. Soc.* 483, 2871-2906 (2019).
- Di Matteo, P., M. Haywood, M.D. Lehnert, D. Katz, S. Khoperskov, O.N. Snaith, A. Gómez and N. Robichon: The Milky Way has no in-situ halo other than the heated thick disc. Composition of the stellar halo and age-dating the last significant merger with Gaia DR2 and APOGEE. *Astron. Astrophys.* 632, A4 (2019).
- Dimauro, P., M. Huertas-Company, E. Dadd, P.G. Pérez-González, M. Bernardi, F. Caro, A. Cattaneo, B. Haessler, U. Kochner, F. Shankar, G. Barro, F. Buitrago, S. Faber, D.D. Kocevski, A.M. Koekemoer, D.C. Koo, S. Mei, R. Peletier, J. Primack, A. Rodriguez-Puebla, M. Salvato, D. Tuccillo: The structural properties of classical bulges and discs from z about 2. *Mon. Not. R. Astron. Soc.* 489, 4135-4154 (2019).
- Dionatos, O., P. Woitke, M. Güdel, P. Degroote, A. Liebhart, F. Anthonioz, S. Antonellini, C. Baldovin-Saavedra, A. Carmona, C. Dominik, J. Greaves, J.D. Ilee, I. Kamp, F. Ménard, M. Min, C. Pinte, C. Rab, L. Rigon, W.F. Thi and L.B.F.M. Waters: Consistent dust and gas models for protoplanetary disks. IV. A panchromatic view of protoplanetary disks. *Astron. Astrophys.* 625, A66 (2019).
- Doctor, Z., R. Kessler, K. Herner, ..., B. Hoyle, ..., and DES Collaboration: A Search for Optical Emission from Binary Black Hole Merger GW170814 with the Dark Energy Camera. *Ap. J. Lett.* 873, L24 (2019).
- Domínguez Sánchez, H., M. Huertas-Company, M. Bernardi, ..., B. Hoyle, et al.: Transfer learning for galaxy morphology from one survey to another. *Mon. Not. R. Astron. Soc.* 484, 93-100 (2019).
- Drozdovskaya, M.N., E.F. van Dishoeck, M. Rubin, J.K. Jørgensen and K. Altwegg: Ingredients for solar-like systems: protostar IRAS 16293-2422 B versus comet 67P/Churyumov-Gerasimenko. *Mon. Not. R. Astron. Soc.* 490, 50-79 (2019).
- Du, C.-G., V. Nosenko, H. Thomas, Y.-F. Lin, G.E. Morfill and A.V. Ivlev: Slow Dynamics in a Quasi-Two-Dimensional Binary Complex Plasma. *Phys. Rev. Lett.* 123, 185002, (2019).
- Du, M., V.P. Debattista, L.C. Ho, P. Côté, C. Spengler, P. Erwin, J.W. Wadsley, M.A. Norris, S.W.F. Earp, T.R. Quinn, K. Fiteni and J. Caruana: The Formation of Compact Elliptical Galaxies in the Vicinity of a Massive Galaxy: The Role of Ram-pressure Confinement. *Ap. J.* 875, 58 (2019).
- Eckert, D., V. Ghirardini, S. Ettori, E. Rasia, V. Biffi, E. Poin-tecou-teau, M. Rossetti, S. Molendi, F. Vazza, F. Gastaldello, M. Gaspari, S. De Grandi, S. Ghizzardi, H. Bourdin,

- C. Tchernin and M. Roncarelli: Non-thermal pressure support in X-COP galaxy clusters. *Astron. Astrophys.* 621, A40 (2019).
- Eden, D.J., T. Liu, K.-T. Kim, ..., S. Feng, et al.: SCOPE: SCUBA-2 Continuum Observations of Pre-protostellar Evolution - survey description and compact source catalogue. *Mon. Not. R. Astron. Soc.* 485, 2895-2908 (2019).
- Eistrup, C., C. Walsh and E.F. van Dishoeck,: Cometary compositions compared with protoplanetary disk mid-plane chemical evolution - An emerging chemical evolution taxonomy for comets. *Astron. Astrophys.* 629, A84 (2019).
- Endres, C.P., P. Caselli and S. Schlemmer: State-to-State Rate Coefficients for $\text{NH}_3\text{-NH}_3$ Collisions from Pump-Probe Chirped Pulse Experiments. *Journal of Physical Chemistry Letters* 10, 4836-4841 (2019).
- Ene, I., C.-P. Ma, N.J. McConnell, J.L. Walsh, P. Kemschi, J.E. Greene, J. Thomas and J.P. Blakeslee: The MASSIVE Survey XIII. Spatially Resolved Stellar Kinematics in the Central 1 kpc of 20 Massive Elliptical Galaxies with the GMOS-North Integral Field Spectrograph. *Ap. J.* 878, 57 (2019).
- Esposti, C.D., M. Melosso, L. Bizzocchi, F. Tamassia and L. Dore: Determination of a semi-experimental equilibrium structure of 1-phosphapropyne from millimeter-wave spectroscopy of CH_3CP and CD_3CP . *Journal of Molecular Structure* 1203, 127429 (2019).
- Erfanianfar, G, A. Finoguenov, K. Furnell, P. Popesso, A. Biviano, S. Wuyts, C.A. Collins, M. Mirkazemi, J. Comparat, H. Khosroshahi, K. Nandra, R. Capasso, E. Rykoff, D. Wilman, A. Merloni, N. Clerc, M. Salvato, J.I. Chitham, L.S. Kelvin, G. Gozaliasl, A. Weijmans, J. Brownstein, E. Egami, M.J. Pereira, D.P. Schneider, D.C. Kirkpatrick, S. Damsted, A. Kukkola: Stellar mass-halo mass relation for the brightest central galaxies of X-ray clusters since z about 0.65. *Astron. Astrophys.* 631, A175 (2019).
- Erwin, P.: What determines the sizes of bars in spiral galaxies?. *Mon. Not. R. Astron. Soc.* 489, 3553-3564 (2019).
- Esplugues, G., S. Cazaux, P. Caselli, S. Hocuk and M. Spaans: Dust temperature and time-dependent effects in the chemistry of photodissociation regions. *Mon. Not. R. Astron. Soc.* 486, 1853-1874 (2019).
- Etori, S., V. Ghirardini, D. Eckert, E. Pointecouteau, F. Gastaldello, M. Sereno, M. Gaspari, S. Ghizzardi, M. Roncarelli and M. Rossetti: Hydrostatic mass profiles in X-COP galaxy clusters. *Astron. Astrophys.* 621, A39 (2019).
- Euclid Collaboration, R. Adam, M. Vannier, S. Maurogordato, ..., J. Weller, et al.: Euclid preparation. III. Galaxy cluster detection in the wide photometric survey, performance and algorithm selection. *Astron. Astrophys.* 627, A23 (2019).
- Euclid Collaboration, R. Barnett, S.J. Warren, D.J. Mortlock, ..., R. Bender, ..., J. Graciá-Carpio, F. Grupp, ..., R. Saglia, et al.: Euclid preparation. V. Predicted yield of redshift $7 < z < 9$ quasars from the wide survey. *Astron. Astrophys.* 631, A85 (2019).
- Evans, M.G., T.W. Hartquist, P. Caselli, A.C. Boley, J.D. Ilee and J.M.C. Rawlings: Gravitational instabilities in a protosolar-like disc - III. Molecular line detection and sensitivities. *Mon. Not. R. Astron. Soc.* 483, 1266-1286 (2019).
- Event Horizon Telescope Collaboration, K. Akiyama, A. Alberdi, W. Alef, ..., J. Dexter, et al.: First M87 Event Horizon Telescope Results. I. The Shadow of the Supermassive Black Hole. *Ap. J. Lett.* 875, L1 (2019).
- Event Horizon Telescope Collaboration, K. Akiyama, A. Alberdi, W. Alef, ..., J. Dexter, et al.: First M87 Event Horizon Telescope Results. II. Array and Instrumentation. *Ap. J. Lett.* 875, L2 (2019).
- Event Horizon Telescope Collaboration, K. Akiyama, A. Alberdi, W. Alef, ..., J. Dexter, et al.: First M87 Event Horizon Telescope Results. III. Data Processing and Calibration. *Ap. J. Lett.* 875, L3 (2019).
- Event Horizon Telescope Collaboration, K. Akiyama, A. Alberdi, W. Alef, ..., J. Dexter, et al.: First M87 Event Horizon Telescope Results. IV. Imaging the Central Supermassive Black Hole. *Ap. J. Lett.* 875, L4 (2019).
- Event Horizon Telescope Collaboration, K. Akiyama, A. Alberdi, W. Alef, ..., J. Dexter, et al.: First M87 Event Horizon Telescope Results. V. Physical Origin of the Asymmetric Ring. *Ap. J. Lett.* 875, L5 (2019).
- Event Horizon Telescope Collaboration, K. Akiyama, A. Alberdi, W. Alef, ..., J. Dexter, et al.: First M87 Event Horizon Telescope Results. VI. The Shadow and Mass of the Central Black Hole. *Ap. J. Lett.* 875, L6 (2019).
- Facchini, S., E.F. van Dishoeck, C.F. Manara, M. Tazzari, L. Maud, P. Cazzoletti, G. Rosotti, N. van der Marel, P. Pillilla and C.J. Clarke: High gas-to-dust size ratio indicating efficient radial drift in the mm-faint CX Tauri disk. *Astron. Astrophys.* 626, L2 (2019).
- Farahi, A., S.L. Mulroy, A.E. Evrard, G.P. Smith, A. Finoguenov, H. Bourdin, J.E. Carlstrom, C.P. Haines, D.P. Marrone, R. Martino, P. Mazzotta and Okabe, C.O. N.: Detection of anti-correlation of hot and cold baryons in galaxy clusters. *Nature Communications* 10, 2504 (2019).
- Fahrion, K., I. Georgiev, M. Hilker, M. Lyubenova, G. van de Ven, M. Alfaro-Cuello, E.M. Corsini, M. Sarzi, R.M. McDermid and T. de Zeeuw: Single metal-poor ultra compact dwarf galaxy at one kiloparsec distance from the low-mass elliptical galaxy FCC 47. *Astron. Astrophys.* 625, A50 (2019).
- Fahrion, K., M. Lyubenova, G. van de Ven, R. Leaman, M. Hilker, I. Martín-Navarro, L. Zhu, M. Alfaro-Cuello, L. Coccato, E.M. Corsini, J. Falcón-Barroso, E. Iodice, R.M. McDermid, M. Sarzi and T. de Zeeuw: Constraining nuclear star cluster formation using MUSE-AO observations of the early-type galaxy FCC 47. *Astron. Astrophys.* 628, A92 (2019).
- Fan, X., F. Wang, J. Yang, C.R. Keeton, M. Yue, A. Zabludoff, F. Bian, M. Bonaglia, I.Y. Georgiev, J.F. Hennawi, J. Li, I.D. McGreer, R. Naidu, F. Pacucci, S. Rabien, D. Thompson, B. Venemans, F. Walter, R. Wang and X.-B.

- Wu: The Discovery of a Gravitationally Lensed Quasar at $z = 6.51$. *Ap. J. Lett.* 870, L11 (2019).
- Fang, Y., N. Hamaus, B. Jain, ..., J. Weller (DES Collaboration): Dark Energy Survey year 1 results: the relationship between mass and light around cosmic voids. *Mon. Not. R. Astron. Soc.* 490, 3573-3587 (2019).
- Farahi, A., X. Chen, A.E. Evrard, ..., J. Weller (DES Collaboration): Mass variance from archival X-ray properties of Dark Energy Survey Year-1 galaxy clusters. *Mon. Not. R. Astron. Soc.* 490, 3341-3354 (2019).
- Farina, E.P., F. Arrigoni-Battaia, T. Costa, F. Walter, J.F. Hennawi, A.B. Drake, R. Decarli, T.A. Gutcke, C. Mazzucchelli, M. Neeleman, I. Georgiev, A.-C. Eilers, F.B. Davies, E. Bañados, X. Fan, M. Onoue, J.-T. Schindler, B.P. Venemans, F. Wang, J. Yang, S. Rabien and L. Busoni: The REQUIEM Survey. I. A Search for Extended Ly- α Nebular Emission Around 31 $z > 5.7$ Quasars. *Ap. J.* 887, 196 (2019).
- Favre, C., D. Fedele, L. Maud, R. Booth, M. Tazzari, A. Miotello, L. Testi, D. Semenov and S. Bruderer: Gas Density Perturbations Induced by One or More Forming Planets in the AS 209 Protoplanetary Disk as Seen with ALMA. *Ap. J.* 871, 107 (2019).
- Feng, S., P. Caselli, K. Wang, Y. Lin, H. Beuther and O. Sipilä: The Chemical Structure of Young High-mass Star-forming Clumps. I. Deuteration. *Ap. J.* 883, 202 (2019).
- Ferrari, C., S. Beretta, B. Salmaso, G. Pareschi, T. Gianpiero, S. Basso, D. Spiga, C. Pellicciari and E. Giro: Characterization of ammonium dihydrogen phosphate crystals for soft X-ray optics of the Beam Expander Testing X-ray facility (BEaTriX). *Journal of Applied Crystallography* 52, 599-604 (2019).
- Fontani, F., V.M. Rivilla, van der Tak, F.F. S., C. Mininni, Beltrán, M.T. and P. Caselli: Origin of the PN molecule in star-forming regions: the enlarged sample. *Mon. Not. R. Astron. Soc.* 489(4), 4530-4542 (2019).
- Foreman-Mackey, D., W. Farr, M. Sinha, A. Archibald, D. Hogg, J. Sanders, J. Zuntz, P. Williams, A. Nelson, M. de Val-Borro, T. Erhardt, I. Pashchenko and O. Pla: emcee v3: A Python ensemble sampling toolkit for affine-invariant MCMC. *The Journal of Open Source Software* 4, 1864 (2019).
- Fornasini, F.M., M. Kriek, R.L. Sanders, I. Shivaiei, F. Civano, N.A. Reddy, A.E. Shapley, A.L. Coil, B. Mobasher, B. Siana, J. Aird, M. Azadi, W.R. Freeman, G.C.K. Leung, S.H. Price, T. Fetherolf, T. Zick and G. Barro: The MOSDEF Survey: The Metallicity Dependence of X-Ray Binary Populations at $z \sim 2$. *Ap. J.* 885, 65 (2019).
- Fossati, M., M. Fumagalli, G. Gavazzi, G. Consolandi, A. Boselli, M. Yagi, M. Sun and D.J. Wilman: MUSE sneaks a peek at extreme ram-pressure stripping events - IV. Hydrodynamic and gravitational interactions in the Blue Infalling Group. *Mon. Not. R. Astron. Soc.* 484, 2212-2228 (2019).
- Fragkoudi, F., D. Katz, W. Trick, S.D.M. White, P. Di Matteo, M.C. Sormani, S. Khoperskov, M. Haywood, A. Hallé and A. Gómez: On the ridges, undulations, and streams in Gaia DR2: linking the topography of phase space to the orbital structure of an N-body bar. *Mon. Not. R. Astron. Soc.* 488, 3324-3339 (2019).
- Freeman, W.R., B. Siana, M. Kriek, A.E. Shapley, N. Reddy, A.L. Coil, B. Mobasher, A.L. Muratov, M. Azadi, G. Leung, R. Sanders, I. Shivaiei, S.H. Price, L. De Groot and D. Kereš: The MOSDEF Survey: Broad Emission Lines at $z = 1.4$ -3.8. *Ap. J.* 873, 102 (2019).
- Freundlich, J., F. Combes, L.J. Tacconi, R. Genzel, S. Garcia-Burillo, R. Neri, T. Contini, A. Bolatto, S. Lilly, P. Salomé, I.C. Bicalho, J. Boissier, F. Boone, N. Bouché, F. Bournaud, A. Burkert, M. Carollo, M.C. Cooper, P. Cox, C. Feruglio, N.M. Förster Schreiber, S. Juneau, M. Lippa, D. Lutz, T. Naab, A. Renzini, A. Saintonge, A. Sternberg, F. Walter, B. Weiner, A. Weiß and S. Wuyts: PHIBSS2: survey design and $z = 0.5 - 0.8$ results. Molecular gas reservoirs during the winding-down of star formation. *Astron. Astrophys.* 622, A105 (2019).
- Frye, B.L., M. Pascale, Y. Qin, A. Zitrin, J. Diego, G. Walth, H. Yan, C.J. Conselice, M. Alpaslan, A. Bauer, L. Busoni, D. Coe, S.H. Cohen, H. Dole, M. Donahue, I. Georgiev, R.A. Jansen, M. Limousin, R. Livermore, D. Norman, S. Rabien and R.A. Windhorst: PLCK G165.7+67.0: Analysis of a Massive Lensing Cluster in a Hubble Space Telescope Census of Submillimeter Giant Arcs Selected Using Planck/Herschel. *Ap. J.* 871, 51 (2019).
- Fuente, A., D.G. Navarro, P. Caselli, M. Gerin, C. Kramer, E. Roueff, T. Alonso-Albi, R. Bachiller, S. Cazaux, B. Commerçon, R. Friesen, S. García-Burillo, B.M. Giuliano, J.R. Goicoechea, P. Gratier, A. Hacar, I. Jiménez-Serra, J. Kirk, V. Lattanzi, J. Loison, J. Malinen, N. Marcelino, R. Martín-Doménech, G. Muñoz-Caro, J. Pineda, M. Tafalla, B. Tercero, D. Ward-Thompson, S.P. Treviño-Morales, P. Rivière-Marichalar, O. Roncero, T. Vidal and M.Y. Ballester: Gas phase Elemental abundances in Molecular clouds (GEMS). I. The prototypical dark cloud TMC 1. *Astron. Astrophys.* 624, A105 (2019).
- Fukugita, M. and H. Böhringer: Galaxies and clusters of galaxies as peak patches of the density field. *Mon. Not. R. Astron. Soc.* 490, 1693-1696 (2019).
- Förster Schreiber, N.M., H. Übler, R.L. Davies, R. Genzel, E. Wisnioski, S. Belli, T. Shimizu, D. Lutz, M. Fossati, R. Herrera-Camus, J.T. Mendel, L.J. Tacconi, D. Wilman, A. Beifiori, G.B. Brammer, A. Burkert, C.M. Carollo, R.I. Davies, F. Eisenhauer, M. Fabricius, S.J. Lilly, I. Momcheva, T. Naab, E.J. Nelson, S.H. Price, A. Renzini, R. Saglia, A. Sternberg, P. van Dokkum and S. Wuyts: The KMOS^{3D} Survey: Demographics and Properties of Galactic Outflows at $z = 0.6$ -2.7. *Ap. J.* 875, 21 (2019).
- Gabici, S., C. Evoli, D. Gaggero, P. Lipari, P. Mertsch, E. Orlando, A. Strong and A. Vittino: The origin of Galactic cosmic rays: Challenges to the standard paradigm. *International Journal of Modern Physics D* 28(15), 1930022 (2019).
- Gaia Collaboration, L. Eyer, L. Rimoldini, M. Audard, ..., A. Guegun, et al.: Gaia data release 2 - Variable stars in the

- colour-absolute magnitude diagram. *Astron. Astrophys.* 623, A110 (2019).
- García-Burillo, S., F. Combes, C. Ramos Almeida, A. Usero, A. Alonso-Herrero, L.K. Hunt, D. Rouan, S. Aalto, M. Querejeta, S. Viti, P.P. van der Werf, H. Vives-Arias, A. Fuente, L. Colina, J. Martín-Pintado, C. Henkel, S. Martín, M. Krips, D. Gratadour, R. Neri and L.J. Tacconi: ALMA images the many faces of the NGC 1068 torus and its surroundings. *Astron. Astrophys.* 632, A61 (2019).
- Georgakakis, A., J. Comparat, A. Merloni, L. Ciesla, J. Aird and A. Finoguenov: Exploring the halo occupation of AGN using dark-matter cosmological simulations. *Mon. Not. R. Astron. Soc.* 487, 275-295 (2019).
- Georgiev, I.Y., N. Neumayer, W. Gässler, S. Rabien, L. Busoni, M. Bonaglia, J. Ziegler, G. Orbande Xivry, D. Peter, M. Kulas, J. Borelli, G. Rahmer, M. Lefebvre and H. Baumgardt: The Milky Way like galaxy NGC 6384 and its nuclear star cluster at high NIR spatial resolution using LBT/ARGOS commissioning data. *Mon. Not. R. Astron. Soc.* 484, 3356-3375 (2019).
- Georgiou, C., H. Johnston, H. Hoekstra, M. Viola, K. Kuijken, B. Joachimi, N.E. Chisari, D.J. Farrow, H. Hildebrandt, Holwerda, B.W. and A. Kannawadi: The dependence of intrinsic alignment of galaxies on wavelength using KiDS and GAMA. *Astron. Astrophys.* 622, A90 (2019).
- Ghirardini, V., D. Eckert, S. Ettori, E. Pointecouteau, S. Molendi, M. Gaspari, M. Rossetti, S. De Grandi, M. Roncarelli, H. Bourdin, P. Mazzotta, E. Rasia and F. Vazza: Universal thermodynamic properties of the intracluster medium over two decades in radius in the X-COP sample. *Astron. Astrophys.* 621, A41 (2019).
- Ghirardini, V., S. Ettori, D. Eckert and S. Molendi: Polytropic state of the intracluster medium in the X-COP cluster sample. *Astron. Astrophys.* 627, A19 (2019).
- Gillessen, S., P.M. Plewa, F. Widmann, S. von Fellenberg, M. Schartmann, M. Habibi, A. Jimenez Rosales, M. Bauböck, J. Dexter, F. Gao, I. Waisberg, F. Eisenhauer, O. Pfuhl, T. Ott, A. Burkert, P.T. de Zeeuw and R. Genzel: Detection of a Drag Force in G2's Orbit: Measuring the Density of the Accretion Flow onto Sgr A* at 1000 Schwarzschild Radii. *Ap. J.* 871, 126 (2019).
- Giuliano, B.M., A.A. Gavdush, B. Müller, K.I. Zaytsev, T. Grassi, A.V. Ivlev, M.E. Palumbo, G.A. Baratta, C. Scire, G.A. Komandin, S.O. Yurchenko and P. Caselli: Broadband spectroscopy of astrophysical ice analogues. I. Direct measurement of the complex refractive index of CO ice using terahertz time-domain spectroscopy. *Astron. Astrophys.* 629, A112 (2019).
- Giuliano, B.M., L. Bizzocchi, A. Pietropolli Charmet, B.E. Arenas, A.L. Steber, M. Schnell, P. Caselli, B.J. Harris, B.H. Pate, J.-C. Guillemin and A. Belloche: Rotational spectroscopy of imidazole: improved rest frequencies for astrophysical searches. *Astron. Astrophys.* 628, A53 (2019).
- Gong, M., X. Zheng, D.N.C. Lin, K. Silsbee, C. Baruteau and S. Mao: Chondrule Formation by the Jovian Sweeping Secular Resonance. *Ap. J.* 883, 164 (2019).
- Goto, M., T.R. Geballe, J. Harju, P. Caselli, O. Sipilä, K.M. Menten and T. Usuda: Search for H₃⁺ isotopologues toward CRL 2136 IRS 1. *Astron. Astrophys.* 632, A29 (2019).
- Gozaliasl, G., A. Finoguenov, M. Tanaka, K. Dolag, F. Montanari, C.C. Kirkpatrick, E. Vardoulaki, H.G. Khosroshahi, M. Salvato, C. Laigle, H.J. McCracken, O. Ilbert, N. Cappelluti, E. Daddi, G. Hasinger, P. Capak, N.Z. Scoville, S. Toft, F. Civano, R.E. Griffiths, M. Balogh, Y. Li, J. Ahoranta, S. Mei, A. Iovino, B.M.B. Henriques and G. Erfanianfar: Chandra centres for COSMOS X-ray galaxy groups: differences in stellar properties between central dominant and offset brightest group galaxies. *Mon. Not. R. Astron. Soc.* 483, 3545-3565 (2019).
- Grandis, S., J.J. Mohr, J.P. Dietrich, S. Bocquet, A. Saro, M. Klein, M. Paulus and R. Capasso: Impact of weak lensing mass calibration on eROSITA galaxy cluster cosmological studies - a forecast. *Mon. Not. R. Astron. Soc.* 488, 2041-2067 (2019).
- Grasshorn Gebhardt, H.S., D. Jeong, H. Awan, J.S. Bridge, R. Ciardullo, D. Farrow, K. Gebhardt, G.J. Hill, E. Komatsu, M. Molina, A. Paulino-Afonso, S. Saito, D.P. Schneider and G. Zeimann: Unbiased Cosmological Parameter Estimation from Emission-line Surveys with Interlopers. *Ap. J.* 876, 32 (2019).
- Gravity Collaboration, A. Amorim, M. Bauböck, M. Benisty, J.-P. Berger, Y. Clénet, V. Coudé Du Forest, T. de Zeeuw, J. Dexter, G. Duvert, A. Eckart, F. Eisenhauer, M.C. Ferreira, F. Gao, P.J.V. Garcia, E. Gendron, R. Genzel, S. Gillessen, P. Gordo, M. Habibi, M. Horrobin, A. Jimenez-Rosales, L. Jocou, P. Kervella, S. Lacour, J.-B. Le Bouquin, P. Léna, T. Ott, M. Pössel, T. Paumard, K. Perraut, G. Perrin, O. Pfuhl, G. Rodriguez Coira, G. Rousset, O. Straub, C. Straubmeier, E. Sturm, F. Vincent, S. von Fellenberg, I. Waisberg and F. Widmann: Scalar field effects on the orbit of S2 star. *Mon. Not. R. Astron. Soc.* 489, 4606-4621 (2019).
- Gravity Collaboration, K. Perraut, L. Labadie, B. Lazareff, L. Klarmann, D. Segura-Cox, M. Benisty, J. Bouvier, W. Brandner, A. Caratti O Garatti, P. Caselli, C. Dougados, P. Garcia, R. Garcia-Lopez, S. Kendrew, M. Koutoulaki, P. Kervella, C.-C. Lin, J. Pineda, J. Sanchez-Bermudez, E. van Dishoeck, R. Abuter, A. Amorim, J.-P. Berger, H. Bonnet, A. Buron, F. Cantalloube, Y. Clénet, V. Coudé Du Foresto, J. Dexter, P.T. de Zeeuw, G. Duvert, A. Eckart, F. Eisenhauer, F. Eupen, F. Gao, E. Gendron, R. Genzel, S. Gillessen, P. Gordo, R. Grellmann, X. Haubois, F. Haussmann, T. Henning, S. Hippler, M. Horrobin, Z. Hubert, L. Jocou, S. Lacour, J.-B. Le Bouquin, P. Léna, A. Mérand, T. Ott, T. Paumard, G. Perrin, O. Pfuhl, S. Rabien, T. Ray, C. Rau, G. Rousset, S. Scheithauer, O. Straub, C. Straubmeier, E. Sturm, F. Vincent, I. Waisberg, I. Wank, F. Widmann, E. Wieprecht, M. Wiest, E. Wieworrek, J. Woillez and S. Yazici: The GRAVITY Young Stellar Object survey. I. Probing the disks of Herbig Ae/Be stars in terrestrial orbits. *Astron. Astrophys.* 632, A53 (2019).
- Gravity Collaboration, R. Abuter, A. Amorim, M. Bauböck, J.P. Berger, H. Bonnet, W. Brandner, Y. Clénet, V. Coudé Du Foresto, P.T. de Zeeuw, J. Dexter, G. Duvert, A. Eckart, F. Eisenhauer, N.M. Förster Schreiber, P. Garcia, F. Gao, E.

- Gendron, R. Genzel, O. Gerhard, S. Gillessen, M. Habibi, X. Haubois, T. Henning, S. Hippler, M. Horrobin, A. Jiménez-Rosales, L. Jocou, P. Kervella, S. Lacour, V. Lapeyrère, J.-B. Le Bouquin, P. Léna, T. Ott, T. Paumard, K. Perraut, G. Perrin, O. Pfuhl, S. Rabien, G. Rodriguez Coira, G. Rousset, S. Scheithauer, A. Sternberg, O. Straub, C. Straubmeier, E. Sturm, L.J. Tacconi, F. Vincent, S. von Fellenberg, I. Waisberg, F. Widmann, E. Wieprecht, E. Wozorrek, J. Woillez and S. Yazici: A geometric distance measurement to the Galactic center black hole with 0.3% uncertainty. *Astron. Astrophys.* 625, L10 (2019).
- Gravity Collaboration, S. Lacour, M. Nowak, J. Wang, O. Pfuhl, F. Eisenhauer, R. Abuter, A. Amorim, N. Anugu, M. Benisty, J.P. Berger, H. Beust, N. Blind, M. Bonnefoy, H. Bonnet, P. Bourget, W. Brandner, A. Buron, C. Collin, B. Charnay, F. Chapron, Y. Clénet, V. Coudé Du Foresto, P.T. de Zeeuw, C. Deen, R. Dembet, J. Dexter, G. Duvert, A. Eckart, N.M. Förster Schreiber, P. Fédou, P. Garcia, R. Garcia Lopez, F. Gao, E. Gendron, R. Genzel, S. Gillessen, P. Gordo, A. Greenbaum, M. Habibi, X. Haubois, F. Haußmann, Th. Henning, S. Hippler, M. Horrobin, Z. Hubert, A. Jimenez Rosales, L. Jocou, S. Kendrew, P. Kervella, J. Kolb, A.-M. Lagrange, V. Lapeyrère, J.-B. Le Bouquin, P. Léna, M. Lippa, R. Lenzen, A.-L. Maire, P. Mollière, T. Ott, T. Paumard, K. Perraut, G. Perrin, L. Pueyo, S. Rabien, A. Ramírez, C. Rau, G. Rodríguez-Coira, G. Rousset, J. Sanchez-Bermudez, S. Scheithauer, N. Schuhler, O. Straub, C. Straubmeier, E. Sturm, L.J. Tacconi, F. Vincent, E.F. van Dishoeck, S. von Fellenberg, I. Wank, I. Waisberg, F. Widmann, E. Wieprecht, M. Wiest, E. Wozorrek, J. Woillez, S. Yazici, D. Ziegler and G. Zins: First direct detection of an exoplanet by optical interferometry. *Astrometry and K-band spectroscopy of HR 8799 e.* *Astron. Astrophys.* 623, L11 (2019).
- Greeley, A.D., S.G. Kanekal, D.N. Baker, B. Klecker and Q. Schiller: Quantifying the Contribution of Microbursts to Global Electron Loss in the Radiation Belts. *J. Geophys. Res. (Space Phys.)* 124, 1111-1124 (2019).
- Green, S.B., M. Ntampaka, D. Nagai, L. Lovisari, K. Dolag, D. Eckert and J.A. Zu Hone: Using X-Ray Morphological Parameters to Strengthen Galaxy Cluster Mass Estimates via Machine Learning. *Ap. J.* 884, 33 (2019).
- Greene, J.E., M. Veale, C.-P. Ma, J. Thomas, M.E. Quenneville, J.P. Blakeslee, J.L. Walsh, A. Goulding and J. Ito: The MASSIVE Survey - XII. Connecting stellar populations of early-type galaxies to kinematics and environment. *Ap. J.* 874(1), 66 (2019).
- Greenwood, A.J., I. Kamp, Waters, L.B. F.M., P. Woitke and W.-F. Thi: The infrared line-emitting regions of T Tauri protoplanetary disks. *Astron. Astrophys.* 631: A81 (2019).
- Greenwood, A.J., I. Kamp, Waters, L.B. F.M., P. Woitke and W.-F. Thi: Effects of dust evolution on protoplanetary disks in the mid-infrared. *Astron. Astrophys.* 626, A6 (2019).
- Greiner, J.: The Benefit of Simultaneous Seven-filter Imaging: 10 Years of GROND Observations. *Publ. Astron. Soc. Pac.* 131, 015002 (2019).
- Gromadzki, M., A. Hamanowicz, L. Wyrzykowski, K.V. Sokolovsky, M. Fraser, S. Kozłowski, J. Guillochon, I. Arcavi, B. Trakhtenbrot, P.G. Jonker, S. Mattila, A. Udalski, M.K. Szymański, I. Soszyński, R. Poleski, P. Pietrukowicz, J. Skowron, P. Mróz, K. Ulaczyk, M. Pawlak, K.A. Rybicki, J. Sollerman, F. Taddia, Z. Kostrzewa-Rutkowska, F. Onori, D.R. Young, K. Maguire, S.J. Smartt, C. Inserra, A. Gal-Yam, A. Rau, T.-W. Chen, C.R. Angus and D.A.H. Buckley: Discovery and follow-up of the unusual nuclear transient OGLE17aaj. *Astron. Astrophys.* 622, L2 (2019).
- Gruen, D., Y. Zhang, A. Palmese, ..., B. Hoyle, ..., and DES Collaboration: Dark Energy Survey Year 1 results: the effect of intracluster light on photometric redshifts for weak gravitational lensing. *Mon. Not. R. Astron. Soc.* 488, 4389-4399 (2019).
- Guglielmo, V., B.M. Poggianti, B. Vulcani, S. Maurogordato, J. Fritz, M. Bolzonella, S. Fotopoulou, C. Adami and M. Pierre: The XXL Survey. XXXVII. The role of the environment in shaping the stellar population properties of galaxies at $0.1 \leq z \leq 0.5$. *Astron. Astrophys.* 625, A112 (2019).
- Guo, H., X. Yang, A. Raichoor, Z. Zheng, J. Comparat, V. Gonzalez-Perez, J.-P. Kneib, D.P. Schneider, D. Bizyaev, D. Oravetz, A. Oravetz and K. Pan: Evolution of Star-forming Galaxies from $z = 0.7$ to 1.2 with eBOSS Emission-line Galaxies. *Ap. J.* 871, 147 (2019).
- Gupta, N., C.L. Reichardt, P.A.R. Ade, ..., J.J. Mohr, et al.: Fractional polarization of extragalactic sources in the 500 deg² SPTpol survey. *Mon. Not. R. Astron. Soc.* 490, 5712-5721 (2019).
- Habibi, M., S. Gillessen, O. Pfuhl, F. Eisenhauer, P.M. Plewa, S. von Fellenberg, F. Widmann, T. Ott, F. Gao, I. Waisberg, M. Bauböck, A. Jimenez-Rosales, J. Dexter, P.T. de Zeeuw and R. Genzel: Spectroscopic Detection of a Cusp of Late-type Stars around the Central Black Hole in the Milky Way. *Ap. J. Lett.* 872, L15 (2019).
- Haerendel, G.: Expanding Auroral Loops. *J. Geophys. Res. (Space Phys.)* 124, 8629-8636 (2019).
- Haerendel, G.: Experiments with Plasmas artificially injected into near-Earth Space. *Frontiers in Astronomy and Space Sciences* 6, 29 (2019).
- Hagen, J.H.J., A. Helmi, P.T. de Zeeuw and L. Posti: The tilt of the velocity ellipsoid in the Milky Way with Gaia DR2. *Astron. Astrophys.* 629, A70 (2019).
- Haggard, D., M. Nynka, B. Mon, N. de la Cruz Hernandez, M. Nowak, C. Heinke, J. Neilsen, J. Dexter, P.C. Fragile, F. Baganoff, G.C. Bower, L.R. Corrales, F. Coti Zelati, N. Degenaar, S. Markoff, M.R. Morris, G. Ponti, N. Rea, J. Wilms and F. Yusef-Zadeh: Chandra Spectral and Timing Analysis of Sgr A*'s Brightest X-Ray Flares. *Ap. J.* 886, 96 (2019).
- Hamanowicz, A., C. Péroux, M.A. Zwaan, H. Rahmani, M. Pettini, D.G. York, A. Klitsch, R. Augustin, Krogager, J.-K., V. Kulkarni, A.D. Biggs, B. Milliard, Vernet, J.D. R. and A. Fresco: MUSE-ALMA haloes V: physical properties and environment of $z \leq 1.4$ H_i quasar absorbers. *Mon. Not. R. Astron. Soc.* 492(2), 2347-2368 (2019).

- Haywood, M., O. Snaith, M.D. Lehnert, P. Di Matteo and S. Khoperskov: Revisiting long-standing puzzles of the Milky Way: the Sun and its vicinity as typical outer disk chemical evolution. *Astron. Astrophys.* 625, A105 (2019).
- Heintz, K.E., J. Bolmer, C. Ledoux, P. Noterdaeme, J.-K. Krogager, J.P.U. Fynbo, P. Jakobsson, S. Covino, V. D'Elia, M. De Pasquale, D.H. Hartmann, L. Izzo, J. Japelj, D.A. Kann, L. Kaper, P. Petitjean, A. Rossi, R. Salvaterra, P. Schady, J. Selsing, R. Starling, N.R. Tanvir, C.C. Thöne, A. de Ugarte Postigo, S.D. Vergani, D. Watson, K. Wiersema and T. Zafar: New constraints on the physical conditions in H₂-bearing GRB-host damped Lyman- α absorbers. *Astron. Astrophys.* 629, A131 (2019).
- Henshaw, J.D., A. Ginsburg, T.J. Haworth, S.N. Longmore, Kruijssen, J.M. D., Mills, E.A. C., V. Sokolov, D.L. Walker, A.T. Barnes, Y. Contreras, J. Bally, C. Battersby, H. Beuther, N. Butterfield, J.E. Dale, T. Henning, J.M. Jackson, J. Kauffmann, T. Pillai, S. Ragan, M. Riener and Q. Zhang: 'The Brick' is not a brick: a comprehensive study of the structure and dynamics of the central molecular zone cloud G0.253+0.016. *Mon. Not. R. Astron. Soc.* 485(2), 2457-2485 (2019).
- Hernández-Aguayo, C., J. Hou, B. Li, C.M. Baugh and A.G. Sánchez: Large-scale redshift space distortions in modified gravity theories. *Mon. Not. R. Astron. Soc.* 485, 2194-2213 (2019).
- Herrera-Camus, R., L. Tacconi, R. Genzel, N. Förster Schreiber, D. Lutz, A. Bolatto, S. Wuyts, A. Renzini, S. Lilly, S. Belli, H. Übler, T. Shimizu, R. Davies, E. Sturm, F. Combes, J. Freundlich, S. García-Burillo, P. Cox, A. Burkert, T. Naab, L. Colina, A. Saintonge, M. Cooper, C. Feruglio and A. Weiss: Molecular and Ionized Gas Phases of an AGN-driven Outflow in a Typical Massive Galaxy at $z \approx 2$. *Ap. J.* 871, 37 (2019).
- Hess, P.O., T. Boller and E. López-Moreno: Comparison of the predictions of the pseudocomplex general relativity to the observations of the Event Horizon Telescope collaboration. *Astronomische Nachrichten*, 340(9-10), 1001-1007 (2019).
- Hess, P.O., Th Boller, A. Müller and H. Stöcker: Predictions of the pseudo-complex theory of Gravity for EHT observations - II: theory and predictions. *Mon. Not. R. Astron. Soc.* 485, L121-L125 (2019).
- Ho, I.-T., K. Kreckel, S.E. Meidt, B. Groves, G.A. Blanc, F. Bigiel, D.A. Dale, E. Emsellem, S.C.O. Glover, K. Grasha, L.J. Kewley, J.M.D. Kruijssen, P. Lang, R. McElroy, R.-P. Kudritzki, P. Sanchez-Blazquez, K. Sandstrom, F. Santoro, E. Schinnerer and A. Schruha: Mapping Electron Temperature Variations across a Spiral Arm in NGC 1672. *Ap. J. Lett.* 885, L31 (2019).
- Hofmann, F. and C. Wegg: 7.1 keV sterile neutrino dark matter constraints from a deep Chandra X-ray observation of the Galactic bulge Limiting Window. *Astron. Astrophys.* 625, L7 (2019).
- Hoormann, J.K., P. Martini, T.M. Davis, ..., B. Hoyle, ..., and DES Collaboration: C IV black hole mass measurements with the Australian Dark Energy Survey (OzDES). *Mon. Not. R. Astron. Soc.* 487, 3650-3663 (2019).
- Hoyle, B. and M.M. Rau: Self-consistent redshift estimation using correlation functions without a spectroscopic reference sample. *Mon. Not. R. Astron. Soc.* 485, 3642-3660 (2019).
- Huang, C., H. Zou, X. Kong, J. Comparat, Z. Lin, Y. Gao, Z. Liang, T. Delubac, A. Raichoor, J.-P. Kneib, D.P. Schneider, X. Zhou, Q. Yuan and M.A. Bershad: The Mass-Metallicity Relation at $z \sim 0.8$: Redshift Evolution and Parameter Dependency. *Ap. J.* 886, 1 (2019).
- Huang, H., A.V. Ivlev, V. Nosenko, Y.-F. Lin and C.-R. Du: Wave spectra of square-lattice domains in a quasi-two-dimensional binary complex plasma. *Phys. Plasmas* 26, 013702 (2019).
- Hunt, L.K., I. De Looze, M. Boquien, R. Nikutta, A. Rossi, S. Bianchi, D.A. Dale, G.L. Granato, R.C. Kennicutt, L. Silva, L. Ciesla, M. Relaño, S. Viaene, B. Brandl, D. Calzetti, K.V. Croxall, B.T. Draine, M. Galametz, K.D. Gordon, B.A. Groves, G. Helou, R. Herrera-Camus, J.L. Hinz, J. Koda, S. Salim, K.M. Sandstrom, J.D. Smith, C.D. Wilson and S. Zibetti: Comprehensive comparison of models for spectral energy distributions from 0.1 μ m to 1 mm of nearby star-forming galaxies. *Astron. Astrophys.* 621, A51 (2019).
- Hurley, K., A.E. Tsvetkova, D.S. Svinikin, R.L. Apteekar, D.D. Frederiks, S.V. Golenetskii, A.A. Kokomov, A.V. Kozlova, A.L. Lysenko, M.V. Ulanov, T.L. Cline, I.G. Mitrofanov, D. Golovin, M.L. Litvak, A.B. Sanin, W. Boynton, K. Harshman, C. Fellows, R. Starr, A. Rau, A. von Kienlin and X. Zhang: A Search for Gravitationally Lensed Gamma-Ray Bursts in the Data of the Interplanetary Network and Kosmos-Wind. *Ap. J.* 871, 121 (2019).
- Hygate, A.P.S., J.M.D. Kruijssen, M. Chevance, A. Schruha, D.T. Haydon and S.N. Longmore: An uncertainty principle for star formation - IV. On the nature and filtering of diffuse emission. *Mon. Not. R. Astron. Soc.* 488, 2800-2824 (2019).
- Högberg, C., S. Lossow, F. Khosrawi, R. Bauer, K.A. Walker, P. Eriksson, D.P. Murtagh, G.P. Stiller, J. Steinwagner and Q. Zhang: The SPARC water vapour assessment II: profile-to-profile and climatological comparisons of stratospheric $\delta D(H_2O)$ observations from satellite. *Atmospheric Chemistry & Physics* 19, 2497-2526 (2019).
- Ibáñez-Mejía, J.C., S. Walch, A.V. Ivlev, S. Clarke, P. Caselli and P.R. Joshi: Dust charge distribution in the interstellar medium. *Mon. Not. R. Astron. Soc.* 485, 1220-1247 (2019).
- Ichikawa, K., C. Ricci, Y. Ueda, F.E. Bauer, T. Kawamuro, M.J. Koss, K. Oh, D.J. Rosario, T.T. Shimizu, M. Stalevski, L. Fuller, C. Packham and B. Trakhtenbrot: BAT AGN Spectroscopic Survey. XI. The Covering Factor of Dust and Gas in Swift/BAT Active Galactic Nuclei. *Ap. J.* 870, 31 (2019).
- Impellizzeri, C.M.V., J.F. Gallimore, S.A. Baum, M. Elitzur, R. Davies, D. Lutz, R. Maiolino, A. Marconi, R. Nikutta, C.P. O'Dea and E. Sani: Counter-rotation and High-velocity Outflow in the Parsec-scale Molecular Torus of NGC 1068. *Ap. J. Lett.* 884, L28 (2019).

- Inostroza, N., D. Mardones, J. Cernicharo, H. Zinnecker, J. Ge, N. Aria, P. Fuentealba and C. Cardenas: Formation of complex organic molecules in ice mantles: An ab initio molecular dynamics study. *Astron. Astrophys.* 629, A28 (2019).
- in't Zand, J.J.M., E. Bozzo, J.L. Qu, ..., C.C. Jin, et al.: Observatory science with eXTP. *Science China Physics, Mechanics, and Astronomy* 62, 29506 (2019).
- Iodice E., M. Sarzi, A. Bittner, L. Coccato, L. Costantin, E.M. Corsini, G. van de Ven, P.T. de Zeeuw, J. Falcón-Barroso, D.A. Gadotti, M. Lyubenova, I. Martín-Navarro, R.M. McDermid, B. Nedelchev, F. Pinna, A. Pizzella, M. Spavone, S. Viaene: The Fornax3D project: tracing the assembly history of the cluster from the kinematic and line-strength maps 2019. *Astron. Astrophys.* 627, A136 (2019).
- Iserlohe, C., A. Bryant, A. Krabbe, S. Beckmann, S. Colditz, C. Fischer, F. Fumi, N. Geis, T.K. Henning, R. Hönlle, R. Klein, L.W. Looney, A. Poglitsch, W. Raab, F. Rebell and W.D. Vacca: FIFI-LS Observations of the Circumnuclear Ring - Probing the High-density Phase of the PDR. *Ap. J.* 885, 169 (2019).
- Ishida, E.E.O., R. Beck, S. González-Gaitán, R.S. de Souza, A. Krone-Martins, J.W. Barrett, N. Kennamer, R. Vilalta, J.M. Burgess, B. Quint, A.Z. Vitorelli, A. Mahabal, E. Gangler and COIN Collaboration: Optimizing spectroscopic follow-up strategies for supernova photometric classification with active learning. *Mon. Not. R. Astron. Soc.* 483, 2-18 (2019).
- Issaoun, S., M.D. Johnson, L. Blackburn, C.D. Brinkerink, M. Mościbrodzka, A. Chael, C. Goddi, I. Martí-Vidal, J. Wagner, S.S. Doeleman, H. Falcke, T.P. Krichbaum, K. Akiyama, U. Bach, K.L. Bouman, G.C. Bower, A. Broderick, I. Cho, G. Crew, J. Dexter, V. Fish, R. Gold, J.L. Gómez, K. Hada, A. Hernández-Gómez, M. Janßen, M. Kino, M. Kramer, L. Loinard, R.-S. Lu, S. Markoff, D.P. Marrone, L.D. Matthews, J.M. Moran, C. Müller, F. Roelofs, E. Ros, H. Rottmann, S. Sanchez, R.P.J. Tilanus, P. de Vicente, M. Wielgus, J.A. Zensus and G.-Y. Zhao: The Size, Shape, and Scattering of Sagittarius A* at 86 GHz: First VLBI with ALMA. *Ap. J.* 871, 30 (2019).
- Ivlev, A.V., K. Silsbee, O. Sipilä and P. Caselli: Gas and Dust Temperature in Prestellar Cores Revisited: New Limits on Cosmic-Ray Ionization Rate. *Ap. J.* 884, 176 (2019).
- Izzo, L., A. de Ugarte Postigo, K. Maeda, C.C. Thöne, D.A. Kann, M. Della Valle, A. Sagues Carracedo, M.J. Michalowski, P. Schady, S. Schmidl, J. Selsing, R.L.C. Starling, A. Suzuki, K. Bensch, J. Bolmer, S. Campana, Z. Cano, S. Covino, J.P.U. Fynbo, D.H. Hartmann, K.E. Heintz, J. Hjorth, J. Japelj, K. Kamiński, L. Kaper, C. Kouveliotou, M. Kruźyński, T. Kwiatkowski, G. Leloudas, A.J. Levan, D.B. Malesani, T. Michalowski, S. Piranomonte, G. Pugliese, A. Rossi, R. Sánchez-Ramírez, S. Schulze, D. Steeghs, N.R. Tanvir, K. Ulaczyk, S.D. Vergani and K. Wiersema: Signatures of a jet cocoon in early spectra of a supernova associated with a γ -ray burst. *Nature* 565, 324-327 (2019).
- Jacobs, C., T. Collett, K. Glazebrook, ..., B. Hoyle, ..., and DES Collaboration: An Extended Catalog of Galaxy-Galaxy Strong Gravitational Lenses Discovered in DES Using Convolutional Neural Networks. *Ap. J. Supp. Ser.* 243, 17 (2019).
- Jacobs, C., T. Collett, K. Glazebrook, ..., B. Hoyle, et al.: Finding high-redshift strong lenses in DES using convolutional neural networks. *Mon. Not. R. Astron. Soc.* 484(4), 5330-5349 (2019).
- Jensen, S.S., J.K. Jørgensen, L.E. Kristensen, K. Furuya, A. Coutens, E.F. van Dishoeck, D. Harsono and M.V. Persson: ALMA observations of water deuteration: a physical diagnostic of the formation of protostars. *Astron. Astrophys.* 631, A25 (2019).
- Jiménez-Donaire, M.J., F. Bigiel, A.K. Leroy, A. Usero, D. Cormier, J. Puschignig, M. Gallagher, A. Kepley, A. Bolatto, S. García-Burillo, A. Hughes, C. Kramer, J. Pety, E. Schinnerer, A. Schrubba, K. Schuster and F. Walter: EMPIRE: The IRAM 30 m Dense Gas Survey of Nearby Galaxies. *Ap. J.* 880, 127 (2019).
- Jin, C., G. Ponti, G. Li and D. Bogensberger: Exploring the Interstellar Medium Using an Asymmetric X-Ray Dust Scattering Halo. *Ap. J.* 875, 157 (2019).
- Johnston, H., C. Georgiou, B. Joachimi, H. Hoekstra, N.E. Chisari, D. Farrow, M.C. Fortuna, C. Heymans, S. Joudaki, K. Kuijken and A. Wright: KiDS+GAMA: Intrinsic alignment model constraints for current and future weak lensing cosmology. *Astron. Astrophys.* 624, A30 (2019).
- Jones, G.C., R. Maiolino, P. Caselli and S. Carniani: Detection of a high-redshift molecular outflow in a primeval hyperstarburst galaxy. *Astron. Astrophys.* 632, L7 (2019).
- Joseph, T.D., M.D. Filipovic, E.J. Crawford, ..., F. Haberl, ..., C. Maitra, et al.: The ASKAP EMU Early Science Project: radio continuum survey of the Small Magellanic Cloud. *Mon. Not. R. Astron. Soc.* 490, 1202-1219 (2019).
- Jullo, E., S. de la Torre, M.-C. Cousinou, S. Escoffier, C. Giocoli, R.B. Metcalf, J. Comparat, H.-Y. Shan, M. Makler, J.-P. Kneib, F. Prada, G. Yepes and S. Gottlöber: Testing gravity with galaxy-galaxy lensing and redshift-space distortions using CFHT-Stripe 82, CFHTLenS, and BOSS CMASS datasets. *Astron. Astrophys.* 627, A137 (2019).
- Kajino, T., W. Aoki, A.B. Balantekin, R. Diehl, M.A. Famiano and G.J. Mathews: Current status of r-process nucleosynthesis. *Progress in Particle and Nuclear Physics* 107, 109-166 (2019).
- Kanbach, G.: Gamma-ray astrophysics: roots, growth, and success. *Rendiconti Lincei. Scienze Fisiche e Naturali* 30 (Suppl 1) (2019).
- Kann, D.A., P. Schady, F. Olivares E., S. Klose, A. Rossi, D.A. Perley, T. Krühler, J. Greiner, A. Nicuesa Guelbenzu, J. Elliott, F. Knust, R. Filgas, E. Pian, P. Mazzali, J.P.U. Fynbo, G. Leloudas, P.M.J. Afonso, C. Delvaux, J.F. Graham, A. Rau, S. Schmidl, S. Schulze, M. Tanga, A.C. Updike and K. Varela: Highly luminous supernovae associated with gamma-ray bursts. I. GRB 111209A/SN 2011kl in the context of stripped-envelope and superluminous supernovae. *Astron. Astrophys.* 624, A143 (2019).

- Karademir, G.S., R.-S. Remus, A. Burkert, K. Dolag, T.L. Hoffmann, B.P. Moster, U.P. Steinwandel and J. Zhang: The outer stellar halos of galaxies: how radial merger mass deposition, shells, and streams depend on infall-orbit configurations. *Mon. Not. R. Astron. Soc.* 487, 318-332 (2019).
- Kashlinsky, A., R.G. Arendt, N. Cappelluti, A. Finoguenov, G. Hasinger, K. Helgason and A. Merloni: Probing the cross-power of unresolved cosmic infrared and X-Ray backgrounds with upcoming space missions. *Ap. J. Letters* 872(1), L6 (2019).
- Katz, D., P. Sartoretti, M. Cropper, ..., Gueguen, et al.: Gaia Data Release 2 - Properties and validation of the radial velocities. *Astron. Astrophys.* 622, A205 (2019).
- Kavanagh, P.J., J. Vink, M. Sasaki, Y.-H. Chu, M.D. Filipović, S. Ohm, F. Haberl, P. Manojlovic and P. Maggi: Magnetic field estimates from the X-ray synchrotron emitting rims of the 30 Dor C superbubble and the implications for the nature of 30 Dor C's TeV emission. *Astron. Astrophys.* 621, A138 (2019).
- Keihänen, E., H. Kurki-Suonio, V. Lindholm, A. Viitanen, A.-S. Suur-Uski, V. Allevato, E. Branchini, F. Marulli, P. Norberg, D. Tavagnacco, S. de la Torre, J. Valiviita, M. Viel, J. Bel, M. Frailis and A.G. Sánchez: Estimating the galaxy two-point correlation function using a split random catalog. *Astron. Astrophys.* 631, A73 (2019).
- Kennedy, G.M., L. Matrà, S. Facchini, J. Milli, O. Panić, D. Price, D.J. Wilner, M.C. Wyatt and B.M. Yelverton: A circumbinary protoplanetary disk in a polar configuration. *Nature Astronomy* 3, 230-235 (2019).
- Keown, J., J. Di Francesco, E. Rosolowsky, A. Singh, C. Figura, H. Kirk, L.D. Anderson, M.C.-Y. Chen, D. Elia, R. Friesen, A. Ginsburg, A. Marston, S. Pezzuto, E. Schisano, S. Bontemps, P. Caselli, H.-L. Liu, S. Longmore, F. Motte, P.C. Myers, S.S.R. Offner, P. Sanhueza, N. Schneider, I. Stephens, J. Urquhart and KEYSTONE Collaboration: KPFA Examinations of Young STellar Object Natal Environments (KEYSTONE): Hierarchical Ammonia Structures in Galactic Giant Molecular Clouds. *Ap. J.* 884, 4 (2019).
- Kerr, R., H. Kirk, J. Di Francesco, J. Keown, M. Chen, E. Rosolowsky, S.S.R. Offner, R. Friesen, J.E. Pineda, Y. Shirley, E. Redaelli, P. Caselli, A. Punanova, Y. Seo, F. Alves, A. Chacón-Tanarro and H.-H. Chen: The Green Bank Ammonia Survey: A Virial Analysis of Gould Belt Clouds in Data Release 1. *Ap. J.* 874, 147 (2019).
- Khoperskov, S., P. Di Matteo, O. Gerhard, D. Katz, M. Haywood, F. Combes, P. Berczik and A. Gomez: The echo of the bar buckling: Phase-space spirals in Gaia Data Release 2. *Astron. Astrophys.* 622, L6 (2019).
- Kiss, C., G. Marton, A.H. Parker, W.M. Grundy, A. Farkas-Takács, J. Stansberry, A. Pál, T. Müller, K.S. Noll, M.E. Schwamb, A.C. Barr, L.A. Young, and J. Vinkó: *Icarus* 334, 3-10 (2019).
- Klein, M., H. Israel, A. Nagarajan, F. Bertoldi, F. Pacaud, A.T. Lee, M. Sommer and K. Basu: Weak lensing measurements of the APEX-SZ galaxy cluster sample. *Mon. Not. R. Astron. Soc.* 488, 1704-1727 (2019).
- Klein, M., S. Grandis, J.J. Mohr, ..., B. Hoyle, ..., and DES Collaboration: A new RASS galaxy cluster catalogue with low contamination extending to $z \sim 1$ in the DES overlap region. *Mon. Not. R. Astron. Soc.* 488, 739-769 (2019).
- Klose, S., Guelbenzu, A.M. N., M.J. Michałowski, L.K. Hunt, D.H. Hartmann, J. Greiner, A. Rossi, E. Palazzi and S. Bernuzzi: Deep ATCA and VLA radio observations of short-GRB host galaxies. Constraints on star formation rates, afterglow flux, and kilonova radio flares. *Ap. J.* 887(2), 206 (2019).
- Klose, S., S. Schmidl, D.A. Kann, A. Nicuesa Guelbenzu, S. Schulze, J. Greiner, F. Olivares E., T. Krühler, P. Schady, P.M.J. Afonso, R. Filgas, J.P.U. Fynbo, A. Rau, A. Rossi, K. Takats, M. Tanga, A.C. Updike and K. Varela: Four GRB supernovae at redshifts between 0.4 and 0.8. The bursts GRB 071112C, 111228A, 120714B, and 130831A. *Astron. Astrophys.* 622, A138 (2019).
- Koch, E.W., E.W. Rosolowsky, A. Schrubba, A. Leroy, A. Kopley, J. Braine, J. Dalcanton and M.C. Johnson: Relationship between the line width of the atomic and molecular ISM in M33. *Mon. Not. R. Astron. Soc.* 485, 2324-2342 (2019).
- Koliopanos, F., G. Vasilopoulos, J. Buchner, C. Maitra and F. Haberl: Investigating ULX accretion flows and cyclotron resonance in NGC 300 ULX1. *Astron. Astrophys.* 621, A118 (2019).
- Kong, S., H.G. Arce, A.I. Sargent, S. Mairs, R.S. Klessen, J. Bally, P. Padoan, R.J. Smith, M.J. Maureira, J.M. Carpenter, A. Ginsburg, A.M. Stutz, P. Goldsmith, S. Meingast, P. McGehee, Á. Sánchez-Monge, S. Suri, J.E. Pineda, J. Alves, J.R. Feddersen, J. Kauffmann and P. Schilke: The CARMA-NRO Orion Survey: Core Emergence and Kinematics in the Orion A Cloud. *Ap. J.* 882, 45 (2019).
- Kong, S., H.G. Arce, M.J. Maureira, P. Caselli, J.C. Tan and F. Fontani: Widespread Molecular Outflows in the Infrared Dark Cloud G28.37+0.07: Indications of Orthogonal Outflow-filament Alignment. *Ap. J.* 874, 104 (2019).
- Kormendy, John and R. Bender: Structural Analogs of the Milky Way Galaxy: Stellar Populations in the Boxy Bulges of NGC 4565 and NGC 5746. *Ap. J.* 872, 106 (2019).
- Kotrlová, A., E. Šrámková, G. Török, K. Goluchová, J. Horák and O. Straub: Non-geodesic corrections to mass-spin estimates for Galactic microquasars implied by quasiperiodic oscillation models. *Astron. Nachr.* 340, 112-115 (2019).
- Kovács, A., C. Sánchez, J. García-Bellido, ..., B. Hoyle, ..., J.J. Mohr, ..., J. Weller and DES Collaboration: More out of less: an excess integrated Sachs-Wolfe signal from supervoids mapped out by the Dark Energy Survey. *Mon. Not. R. Astron. Soc.* 484, 5267-5277 (2019).
- Kozłowski, S., E. Bañados, A. Udalski, N. Morrell, A.P. Ji, Ł. Wyrzykowski, A. Rau, P. Mróz, J. Greiner, M. Gromadzki, M.K. Szymański, I. Soszyński, R. Poleski, P. Pietrukowicz, J. Skowron, D.M. Skowron, K. Ulaczyk, K. Rybicki, P. Iwanek and M. Wrona: Discovery of Two Quasars at $z = 5$

from the OGLE Survey. *Ap. J.* 878, 115 (2019).

Krause, M.G.H., S.S. Shabala, M.J. Hardcastle, G.V. Bicknell, H. Böhringer, G. Chon, M.A. Nawaz, M. Sarzi and A.Y. Wagner: How frequent are close supermassive binary black holes in powerful jet sources?. *Mon. Not. R. Astron. Soc.* 482, 240-261 (2019).

Kreckel, K., I.-T. Ho, G.A. Blanc, B. Groves, F. Santoro, E. Schinnerer, F. Bigiel, M. Chevance, E. Congiu, E. Emselfem, C. Faesi, S.C.O. Glover, K. Grasha, J.M.D. Kruijssen, P. Lang, A.K. Leroy, S.E. Meidt, R. McElroy, J. Pety, E. Rosolowsky, T. Saito, K. Sandstrom, P. Sanchez-Blazquez and A. Schruha: Mapping Metallicity Variations across Nearby Galaxy Disks. *Ap. J.* 887, 80 (2019).

Kriek, M., S.H. Price, C. Conroy, K.A. Suess, L. Mowla, I. Pasha, R. Bezanson, P. van Dokkum and G. Barro: Stellar Metallicities and Elemental Abundance Ratios of $z \sim 1.4$ Massive Quiescent Galaxies. *Ap. J. Lett.* 880, L31 (2019).

Kriss, G.A., M. Mehdipour, J.S. Kaastra, A. Rau, J. Bodensteiner, R. Plesha, N. Arav, E. Behar, S. Bianchi, G. Branduardi-Raymont, M. Cappi, E. Costantini, B. De Marco, L. Di Gesu, J. Ebrero, S. Kaspi, J. Mao, R. Middei, T. Miller, S. Paltani, U. Peretz, B.M. Peterson, P.-O. Petrucci, G. Ponti, F. Ursini, D.J. Walton, D.X. Xu: HST/COS observations of the newly discovered obscuring outflow in NGC 3783. *Astron. Astrophys.* 621, A12 (2019).

Kruijssen, J.M.D., J.E. Dale, S.N. Longmore, D.L. Walker, J.D. Henshaw, S.M.R. Jeffreson, M.A. Petkova, A. Ginsburg, A.T. Barnes, C.D. Battersby, K. Immer, J.M. Jackson, E.R. Keto, N. Krieger, E.A.C. Mills, Á. Sánchez-Monge, A. Schmiedeke, S.T. Suri and Q. Zhang: The dynamical evolution of molecular clouds near the Galactic Centre - II. Spatial structure and kinematics of simulated clouds. *Mon. Not. R. Astron. Soc.* 484, 5734-5754 (2019).

Kruijssen, J.M.D., A. Schruha, M. Chevance, S.N. Longmore, A.P.S. Hygate, D.T. Haydon, A.F. McLeod, J.J. Dalcanton, L.J. Tacconi and E.F. van Dishoeck: Fast and inefficient star formation due to short-lived molecular clouds and rapid feedback. *Nature* 569, 519-522 (2019).

Kruk, S.J., P. Erwin, V.P. Debattista and C. Lintott: Revealing the cosmic evolution of boxy/peanut-shaped bulges from HST COSMOS and SDSS. *Mon. Not. R. Astron. Soc.* 490, 4721-4739 (2019).

Kryuchkov, N.P., F. Smallegange, A.V. Ivlev, S.O. Yurchenko and H. Löwen: Phase diagram of two-dimensional colloids with Yukawa repulsion and dipolar attraction. *Journal of Chemical Physics* 150, 104903 (2019).

Kulkarni, V.P., F.H. Cashman, S. Lopez, S.L. Ellison, D. Som and M.J. Maia: Probing Structure in Cold Gas at $z \leq 1$ with Gravitationally Lensed Quasar Sight Lines. *Ap. J.* 886, 83 (2019).

Kuznetsova, E., R. Krivonos, M. Clavel, A. Lutovinov, D. Chernyshov, J.S. Hong, K. Mori, G. Ponti, J. Tomsick and S. Zhang: Investigating the origin of the faint non-thermal emission of the Arches cluster using the 2015-2016 NuSTAR and XMM-Newton X-ray observations. *Mon. Not. R. Astron. Soc.* 484, 1627-1636 (2019).

Käfer, F., A. Finoguenov, D. Eckert, J.S. Sanders, T.H. Reiprich and K. Nandra: Toward a characterization of X-ray galaxy clusters for cosmology. *Astron. Astrophys.* 628, A43 (2019).

Laas, J.C. and P. Caselli: Modeling sulfur depletion in interstellar clouds. *Astron. Astrophys.* 624, A108 (2019).

La Caria, M.-M., C. Vignali, G. Lanzuisi, C. Gruppioni and F. Pozzi: Broad-band X-ray analysis of local mid-infrared-selected Compton-thick AGN candidates. *Mon. Not. R. Astron. Soc.* 487, 1662-1674 (2019).

Lacour, S., R. Dembet, R. Abuter, P. Fédou, G. Perrin, É. Choquet, O. Pfuhl, F. Eisenhauer, J. Woillez, F. Cassaing, E. Wieprecht, T. Ott, E. Wiezorrek, K.R.W. Tristram, B. Wolff, A. Ramírez, X. Haubois, K. Perraut, C. Straubmeier, W. Brandner and A. Amorim: The GRAVITY fringe tracker. *Astron. Astrophys.* 624, A99 (2019).

Laigle, C., I. Davidzon, O. Ilbert, J. Devriendt, D. Kashino, C. Pichon, P. Capak, S. Arnouts, S. de la Torre, Y. Dubois, G. Gozaliasl, D. Le Borgne, S. Lilly, H.J. McCracken, M. Salvato, A. Slyz: Horizon-AGN virtual observatory - 1. SED-fitting performance and forecasts for future imaging surveys. *Mon. Not. R. Astron. Soc.* 486, 5104-5123 (2019).

Lam, K.H., Z.-Y. Li, C.-Y. Chen, K. Tomida and B. Zhao: Disc Formation in Magnetized Dense Cores with Turbulence and Ambipolar Diffusion. *Mon. Not. R. Astron. Soc.* 489, 5326, (2019).

Lamb, G.P., N.R. Tanvir, A.J. Levan, ..., J. Greiner, et al.: Short GRB 160821B: a reverse shock, a refreshed shock, and a well-sampled kilonova. *Ap. J.* 883(1), 48 (2019).

La Massa, S.M., A. Georgakakis, M. Vivek, M. Salvato, T.T. Ananna, C.M. Urry, C. MacLeod and N. Ross: SDSS-IV eBOSS Spectroscopy of X-Ray and WISE AGNs in Stripe 82X: Overview of the Demographics of X-Ray- and Mid-infrared-selected Active Galactic Nuclei. *Ap. J.* 876, 50 (2019).

Landry, G., D. Hansen, F. Kamp, M. Li, B. Hoyle, J. Weller, K. Parodi, C. Belka and C. Kurz: Comparing Unet training with three different datasets to correct CBCT images for prostate radiotherapy dose calculations. *Physics in Medicine and Biology* 64, 035011 (2019).

Lanz, L., R.C. Hickox, M. Balokovic, T. Shimizu, C. Ricci, A. Goulding, D.R. Ballantyne, F.E. Bauer, C.J. Chen, A. del Moro, D. Farrah, M.J. Koss, S. La Massa, A. Masini, L. Zappacosta: Investigating the Covering Fraction Distribution of Swift/BAT AGNs with X-Ray and Infrared Observations. *Ap. J.* 870, 26, (2019).

Laskar, T., H. van Eerten, P. Schady, C.G. Mundell, K.D. Alexander, R. Barniol Duran, E. Berger, J. Bolmer, R. Chornock, D.L. Copejans, W.-f. Fong, A. Gomboc, N. Jordana-Mitjans, S. Kobayashi, R. Margutti, K.M. Menten, R. Sari, R. Yamazaki, V.M. Lipunov, E. Gorbovskoy, V.G. Kornilov, N. Tyurina, D. Zimnukhov, R. Podesta, H. Levato, D.A.H. Buckley, A. Tlatov, R. Rebolo and M. Serra-Ricart: A Reverse Shock in GRB 181201A. *Ap. J.* 884, 121 (2019).

- Laskar, T., K.D. Alexander, R. Gill, J. Granot, E. Berger, C.G. Mundell, R. Barniol Duran, J. Bolmer, P. Duffell, H. van Eerten, W.-f. Fong, S. Kobayashi, R. Margutti and P. Schady: ALMA Detection of a Linearly Polarized Reverse Shock in GRB 190114C. *Ap. J. Lett.* 878, L26 (2019).
- Lazzarini, M., B.F. Williams, A.E. Hornschemeier, V. Antoniou, G. Vasilopoulos, F. Haberl, N. Vulic, M. Yukita, A. Zezas, A. Bodaghee, B.D. Lehmer, T.J. Maccarone, A. Ptak, D. Wik, F.M. Fornasini, J. Hong, J.A. Kennea, J.A. Tomsick, T. Venters, A. Udalski and A. Cassity: Neutron Stars and Black Holes in the Small Magellanic Cloud: The SMC NuSTAR Legacy Survey. *Ap. J.* 884, 2 (2019).
- Lee, K.L. K., M.-A. Martin-Drumel, V. A. Lattanzi, B.M., P. Caselli and M.C. McCarthy: Gas phase detection and rotational spectroscopy of ethynethiol, HCCSH. *Molecular Physics*, 117(9-12), 1381-1391 (2019).
- Lee, M.M., T. Nagao, C.D. Breuck, S. Carniani, G. Cresci, B. Hatsukade, R. Kawabe, K. Kohno, R. Maiolino, F. Mannucci, A. Marconi, K. Nakanishi, T. Saito, Y. Tamura, P. Troncoso, H. Umehata and M. Yun: First [NII]122 μ m line detection in a QSO-SMG pair BRI 1202-0725 at $z=4.69$. *Ap. J. Letters*, 883(2), L29 (2019).
- Lee, M.M., I. Tanaka, R. Kawabe, I. Aretxaga, B. Hatsukade, T. Izumi, M. Kajisawa, T. Kodama, K. Kohno, K. Nakanishi, T. Saito, K.-i. Tadaki, Y. Tamura, H. Umehata and M. Zeballos: A Radio-to-millimeter Census of Star-forming Galaxies in Protocluster 4C 23.56 at $z = 2.5$: Global and Local Gas Kinematics. *Ap. J.* 883, 92 (2019).
- Lee, S., E.M. Huff, A.J. Ross, ..., J. Weller, J. Zuntz and DES Collaboration: Producing a BOSS CMASS sample with DES imaging. *Mon. Not. R. Astron. Soc.* 489, 2887-2906 (2019).
- Leloudas, G., L. Dai, I. Arcavi, P.M. Vreeswijk, B. Mockler, R. Roy, D.B. Malesani, S. Schulze, T. Wevers, M. Fraser, E. Ramirez-Ruiz, K. Auchetti, J. Burke, G. Cannizzaro, P. Charalampopoulos, T.-W. Chen, A. Cikota, M. Della Valle, L. Galbany, M. Gromadzki, K.E. Heintz, D. Hiramatsu, P.G. Jonker, Z. Kostrzewa-Rutkowska, K. Maguire, I. Mandel, M. Nicholl, F. Onori, N. Roth, S.J. Smartt, L. Wyrzykowski and D.R. Young: The Spectral Evolution of AT 2018dyb and the Presence of Metal Lines in Tidal Disruption Events. *Ap. J.* 887, 218 (2019).
- Leung, G.C.K., A.L. Coil, J. Aird, M. Azadi, M. Kriek, B. Mobasher, N. Reddy, A. Shapley, B. Siana, T. Fetherolf, F.M. Fornasini, W.R. Freeman, S.H. Price, R.L. Sanders, I. Shvaei and T. Zick: The MOSDEF Survey: A Census of AGN-driven Ionized Outflows at $z = 1.4-3.8$. *Ap. J.* 886, 11 (2019).
- Li, C.-J., W.E. Kerzendorf, Y.-H. Chu, T.-W. Chen, T. Do, R.A. Gruendl, A. Holmes, R. Ishioka, B. Leibundgut, K.-C. Pan, P.M. Ricker and D. Weisz: Search for Surviving Companions of Progenitors of Young LMC SN Ia Remnants. *Ap. J.* 886, 99 (2019).
- Li, J., Y. Xue, M. Sun, T. Liu, F. Vito, W.N. Brandt, T.M. Hughes, G. Yang, P. Tozzi, S. Zhu, X. Zheng, B. Luo, C.-T. Chen, C. Vignali, R. Gilli and X. Shu: Piercing through Highly Obscured and Compton-thick AGNs in the Chandara Deep Fields. I. X-Ray Spectral and Long-term Variability Analyses. *Ap. J.* 877, 5 (2019).
- Liao, Y.-Y., Shen, Z.-X., J. Yu, Huang, Q.-S., B. Ma, Z. Zhang, Wang, X.-Q., K. Wang, C. Xie, V. Burwitz, G. Hartner, La Caria, M.-M., C. Pellicciari and Wang, Z.-S.: Calibration of X-ray telescope prototypes at PANTER. *Astron. Astrophys.* 19(12), 172 (2019).
- Lippich, M., A.G. Sánchez, M. Colavincenzo, E. Sefusatti, P. Monaco, L. Blot, M. Crocce, M.A. Alvarez, A. Agrawal, S. Avila, A. Balaguera-Antolínez, R. Bond, S. Codis, C. Dalla Vecchia, A. Dorta, P. Fosalba, A. Izard, F.-S. Kitaura, M. Pellejero-Ibanez, G. Stein, M. Vakili and G. Yepes: Comparing approximate methods for mock catalogues and covariance matrices - I. Correlation function. *Mon. Not. R. Astron. Soc.* 482, 1786-1806 (2019).
- Liu, H., C. Pinto, A.C. Fabian, H.R. Russell and J.S. Sanders: Searching for cool and cooling X-ray emitting gas in 45 galaxy clusters and groups. *Mon. Not. R. Astron. Soc.* 485, 1757-1774 (2019).
- Liu, Y.J., L. Wang, Y. Takeda, Y. Bharat Kumar and G. Zhao: Elemental abundances of RGB and red clump stars in the Kepler field. *Mon. Not. R. Astron. Soc.* 482, 4155-4173 (2019).
- Long, F., G.J. Herczeg, D. Harsono, P. Pinilla, M. Tazzari, C.F. Manara, I. Pascucci, S. Cabrit, B. Nisini, D. Johnstone, S. Edwards, C. Salyk, F. Menard, G. Lodato, Y. Boehler, G.N. Mace, Y. Liu, G.D. Mulders, N. Hendler, E. Ragusa, W.J. Fischer, A. Banzatti, E. Rigliaco, G. van de Plas, G. Dipierro, M. Gully-Santiago and Ricardo Lopez-Valdivia: Compact Disks in a High-resolution ALMA Survey of Dust Structures in the Taurus Molecular Cloud. *Ap. J.* 882, 49 (2019).
- Lonco, I., C. Maraston, D. Thomas, M. Longhetti, T. Parikh, P. Guarnieri and J. Comparat: Stellar population properties of individual massive early-type galaxies at $1.4 < z < 2$. *Mon. Not. R. Astron. Soc.* 492(1), 326-351 (2019).
- Lotz, M., R.-S. Remus, K. Dolag, A. Biviano and A. Burkert: Gone after one orbit: How cluster environments quench galaxies. *Mon. Not. R. Astron. Soc.* 488, 5370-5389 (2019).
- López, K.M., P.G. Jonker, M.A.P. Torres, M. Heida, A. Rau and D. Steeghs: Quiescent NIR and optical counterparts to candidate black hole X-ray binaries. *Mon. Not. R. Astron. Soc.* 482, 2149-2165 (2019).
- MAGIC Collaboration, V.A. Acciari, S. Ansoldi, L.A. Antonelli, ..., A. von Kienlin, ..., J. Bolmer, ..., J. Greiner, et al.: Observation of inverse Compton emission from a long γ -ray burst. *Nature* 575, 459-463 (2019).
- Macaulay, E., R.C. Nichol, D. Bacon, ..., B. Hoyle, et al.: First cosmological results using Type Ia supernovae from the Dark Energy Survey: measurement of the Hubble constant. *Mon. Not. R. Astron. Soc.* 486, 2184-2196 (2019).
- Maggi, P., M.D. Filipović, B. Vukotić, J. Ballet, F. Haberl, C. Maitra, P. Kavanagh, M. Sasaki and M. Stupar: The super-

- nova remnant population of the Small Magellanic Cloud. *Astron. Astrophys.* 631, A127 (2019).
- Maitra, C., F. Haberl, M.D. Filipović, A. Udalski, P.J. Kavanagh, S. Carpano, P. Maggi, M. Sasaki, R.P. Norris, A. O'Brien, A. Hotan, E. Lenc, M.K. Szymański, I. Soszyński, R. Poleski, K. Ulaczyk, P. Pietrukowicz, S. Kozłowski, J. Skowron, P. Mróz, K. Rybicki, P. Iwanek and M. Wrona: Discovery of a very young high-mass X-ray binary associated with the supernova remnant MCSNR J0513-6724 in the LMC. *Mon. Not. R. Astron. Soc.* 490, 5494-5502 (2019).
- Maitra, C., F. Haberl, V.D. Ivanov, M.-R.L. Cioni and J.Th. van Loon: Identification of AGN in the XMM-Newton X-ray survey of the SMC. *Astron. Astrophys.* 622, A29 (2019).
- Malyali, A., A. Rau and K. Nandra: eROSITA detection rates for tidal disruptions of white dwarfs by intermediate mass black holes. *Mon. Not. R. Astron. Soc.* 489, 5413-5423 (2019).
- Malyali, A., M. Rivi, F.B. Abdalla and J.D. McEwen: Radio galaxy detection in the visibility domain. *Mon. Not. R. Astron. Soc.* 486, 2695-2704 (2019).
- Manara, C.F., M. Tazzari, F. Long, G.J. Herczeg, G. Lodato, A.A. Rota, P. Cazzoletti, G. van der Plas, P. Pinilla, G. Dipierro, S. Edwards, D. Harsono, D. Johnstone, Y. Liu, F. Menard, B. Nisini, E. Ragusa, Y. Boehler and S. Cabrit: Observational constraints on dust disk sizes in tidally truncated protoplanetary disks in multiple systems in the Taurus region. *Astron. Astrophys.* 628, A95 (2019).
- Mao, J., M. Mehdipour, J.S. Kaastra, E. Costantini, C. Pinto, G. Branduardi-Raymont, E. Behar, U. Peretz, S. Bianchi, G.A. Kriss, G. Ponti, B. De Marco, P.-O. Petrucci, L. Di Gesu, R. Middei, J. Ebrero and N. Arav: Photoionized emission and absorption features in the high-resolution X-ray spectra of NGC 3783. *Astron. Astrophys.* 621, A99 (2019).
- Marciniak, A., V. Alí-Lagoa, T.G. Müller, et al: Thermal properties of slowly rotating asteroids: results from a targeted survey. *Astron. Astrophys.* 625, A139 (2019).
- Mardini, M.K., H. Li, V.M. Placco, S. Alexeeva, D. Carollo, A. Taani, I. Ablimit, L. Wang and G. Zhao: Metal-poor Stars Observed with the Automated Planet Finder Telescope. I. Discovery of Five Carbon-enhanced Metal-poor Stars from LAMOST. *Ap. J.* 875, 89 (2019).
- Marinello, M., R.A. Overzier, Röttgering, H.J. A., J.D. Kurk, Breuck, C.D., J. Vernet, D. Wylezalek, D. Stern, K.J. Duncan, N. Hatch, N. Kashikawa, Lin, Y.-T., Nemmen, R.S. and A. Saxena: VLT/SINFONI study of black hole growth in high-redshift radio-loud quasars from the CARLA survey. *Mon. Not. R. Astron. Soc.* 492(2), 1991-2016 (2019).
- Marshall, J.L., T. Hansen, J.D. Simon, ..., B. Hoyle, ..., and DES Collaboration: Chemical Abundance Analysis of Tucana III, the Second r-process Enhanced Ultra-faint Dwarf Galaxy. *Ap. J.* 882, 177 (2019).
- Martín-Navarro, I., M. Lyubenova, G. van de Ven, J. Falcón-Barroso, L. Coccato, E.M. Corsini, D.A. Gadotti, E. Iodice, F. La Barbera, R.M. McDermid, F. Pinna, M. Sarzi, S. Vienne, P.T. de Zeeuw and L. Zhu: The Fornax3D project: a two-dimensional view of the stellar initial mass function in the massive lenticular galaxy FCC 167. *Astron. Astrophys.* 626, A124 (2019).
- Mastrobuono-Battisti, A., S. Khoperskov, P. Di Matteo and M. Haywood: Mergers, tidal interactions, and mass exchange in a population of disc globular clusters. II. Long-term evolution. *Astron. Astrophys.* 622, A86 (2019).
- Matthee, J., D. Sobral, L.A. Boogaard, H. Röttgering, L. Vallini, A. Ferrara, A. Paulino-Afonso, F. Boone, D. Schaerer and B. Mobasher: Resolved UV and [C II] Structures of Luminous Galaxies within the Epoch of Reionization. *Ap. J.* 881, 124 (2019).
- Maxted, N.I., M.D. Filipović, N. Hurley-Walker, I. Bojčić, G.P. Rowell, F. Haberl, A.J. Raiter, I.R. Seitenzahl, F. Panther, G.F. Wong, C. Braiding, M. Burton, G. Pühlhofer, H. Sano, Y. Fukui, M. Sasaki, W. Tian, H. Su, X. Cui, D. Leahy and P.J. Hancock: A Supernova Remnant Counterpart for HESS J1832-085. *Ap. J.* 885, 129 (2019).
- McBrien, O.R., S.J. Smartt, T.W. Chen, C. Inserra, J.H. Gillanders, S.A. Sim, A. Jerkstrand, A. Rest, S. Valenti, R. Roy, M. Gromadzki, S. Taubenberger, A. Flörs, M.E. Huber, K.C. Chambers, A. Gal-Yam, D. Young, M. Nicholl, E. Kankare, K.W. Smith, K. Maguire, I. Mandel, S. Prentice, O. Rodríguez, J. Pineda Garcia, C.P. Gutierrez, L. Galbany, C. Barbarino, P.S.J. Clark, J. Sollerman, S.R. Kulkarni, K. De, D.A.H. Buckley, A. Rau: SN2018kzr: A Rapidly Declining Transient from the Destruction of a White Dwarf. *Ap. J. Lett.* 885 (2019).
- McClintock, T., T.N. Varga, D. Gruen, ..., J.J. Mohr, ..., J. Weller and DES Collaboration: Dark Energy Survey Year 1 results: weak lensing mass calibration of redMaPPer galaxy clusters. *Mon. Not. R. Astron. Soc.* 482, 1352-1378 (2019).
- McDonald, M., S.W. Allen, J. Hlavacek-Larrondo, A.B. Mantz, M. Bayliss, B.A. Benson, M. Brodwin, E. Bulbul, R.E.A. Canning, I. Chiu, W.R. Forman, G.P. Garmire, N. Gupta, G. Khullar, J.J. Mohr, C.L. Reichardt and T. Schrabback: A Detailed Study of the Most Relaxed SPT-selected Galaxy Clusters: Properties of the Cool Core and Central Galaxy. *Ap. J.* 870, 85 (2019).
- McGuire, B.A., C.N. Shingledecker, E.R. Willis, K.L.K. Lee, M.A. Martin-Drumel, G.A. Blake, C.L. Brogan, A.M. Burkhardt, P. Caselli, K.J. Chuang, S. El-Abd, T.R. Hunter, S. Ioppolo, H. Linnartz, A. Remijan, C. Xue, M.C. McCarthy: Searches for Interstellar HCCSH and H₂CCS. *Ap. J.* 883, 2, (2019).
- McLeod, A.F., S. Scaringi, R. Soria, M.W. Pakull, R. Urquhart, T.J. Maccarone, C. Knigge, J.C.A. Miller-Jones, R.M. Plotkin, C. Motch, J.M.D. Kruijssen and A. Schruha: Optical IFU spectroscopy of a bipolar microquasar jet in NGC 300. *Mon. Not. R. Astron. Soc.* 485, 3476-3485 (2019).
- Mehrgan, K., J. Thomas, R. Saglia, X. Mazzalay, P. Erwin, R. Bender, M. Kluge and M. Fabricius: A 40 Billion Solar-mass Black Hole in the Extreme Core of Holm 15A, the Central Galaxy of Abell 85. *Ap. J.* 887, 195 (2019).
- Meisner, J., I. Kamp, W.-F. Thi and J. Kästner: The role of

- atom tunneling in gas-phase reactions in planet-forming disks. *Astron. Astrophys.* 627, A45 (2019).
- Melandri, A., D.B. Malesani, L. Izzo, ..., J. Bolmer, et al.: GRB 171010A/SN 2017htp: a GRB-SN at $z = 0.33$. *Mon. Not. R. Astron. Soc.* 490(4), 5366-5374 (2019).
- Meng, F., Á. Sánchez-Monge, P. Schilke, M. Padovani, A. Marcowith, A. Ginsburg, A. Schmiedeke, A. Schwörer, C. De Pree, V.S. Veena and Th. Müller: The physical and chemical structure of Sagittarius B2. V. Non-thermal emission in the envelope of Sgr B2. *Astron. Astrophys.* 630, A73 (2019).
- Mernier, F., N. Werner, J. Bagchi, A. Simionescu, H. Böhringer, S.W. Allen and J. Jacob: Magnetic fields and extraordinarily bright radio emission in the X-ray faint galaxy group MRC 0116 + 111. *Mon. Not. R. Astron. Soc.* 486, 5430-5440 (2019).
- Middei, R., S. Bianchi, P.-O. Petrucci, F. Ursini, M. Cappi, B. De Marco, A. De Rosa, J. Malzac, A. Marinucci, G. Matt, G. Ponti and A. Tortosa: High-energy monitoring of NGC 4593 II. Broad-band spectral analysis: testing the two-corona model. *Mon. Not. R. Astron. Soc.* 483, 4695-4705 (2019).
- Mignani, R.P., A. De Luca, S. Zharikov, W. Hummel, W. Becker and A. Pellizzoni: The nature of the infrared counterpart and of the optical nebula associated with the Central Compact Object in Vela Jr. *Mon. Not. R. Astron. Soc.* 486, 5716-5725 (2019).
- Mignani, R.P., A. Shearer, A. de Luca, F.E. Marshall, L. Guillemot, D.A. Smith, B. Rudak, L. Zampieri, C. Barbieri, G. Naletto, C. Gouiffes and G. Kanbach: The First Ultraviolet Detection of the Large Magellanic Cloud Pulsar PSR B0540-69 and Its Multi-wavelength Properties. *Ap. J.* 871, 246 (2019).
- Miotello, A., S. Facchini, E.F. van Dishoeck, P. Cazzoletti, L. Testi, J.P. Williams, M. Ansdell, S. van Terwisga and N. van der Marel: Bright C₂H emission in protoplanetary discs in Lupus: high volatile C/O > 1 ratios. *Astron. Astrophys.* 631, A69 (2019).
- Mirzoyan, R., C. Arcaro, H. Kellermann and M. Garzcarczyk: Absolute reflectance of a concave mirror used for astro-particle physics experiments. *Astroparticle Physics* 98, 28-37 (2019).
- Miyaji, T., M. Herrera-Endoqui, M. Krumpe, M. Hanzawa, A. Shogaki, S. Matsuura, A. Tanimoto, Y. Ueda, T. Ishigaki, L. Barrufet, H. Brunner, H. Matsuhara, T. Goto, T. Takagi, C. Pearson, D. Burgarella, N. Oi, M. Malkan, Y. Toba, G.J. White and H. Hanami: Torus Constraints in ANEPD-CX0245: A Compton-thick AGN with Double-peaked Narrow Lines. *Ap. J. Lett.* 884, L10 (2019).
- Mocanu, L.M., T.M. Crawford, K. Aylor, ..., J.J. Mohr, et al.: Consistency of cosmic microwave background temperature measurements in three frequency bands in the 2500-square-degree SPT-SZ survey. *J. of Cosmology and Astroparticle Phys.* 2019, 038 (2019).
- Monari, G., B. Famaey, A. Siebert, C. Wegg and O. Gerhard: Signatures of the resonances of a large Galactic bar in local velocity space. *Astron. Astrophys.* 626, A41 (2019).
- Monari, G., B. Famaey, A. Siebert, O. Bienaymé, R. Ibata, C. Wegg and O. Gerhard: Tracing Hercules in Galactic azimuth with Gaia DR2. *Astron. Astrophys.* 632, A107 (2019).
- Morgan, R., K. Bechtol, R. Kessler, ..., and J. Weller: A DE-Cam Search for Explosive Optical Transients Associated with IceCube Neutrino Alerts. *Ap. J.* 883, 125 (2019).
- Mostoghiu, R., A. Knebe, W. Cui, F.R. Pearce, G. Yepes, C. Power, R. Dave and A. Arth: The Three Hundred Project: The evolution of galaxy cluster density profiles. *Mon. Not. R. Astron. Soc.* 483, 3390-3403 (2019).
- Müller, T., C. Kiss, V. Ali-Lagoa, J.L. Ortiz, E. Lellouch, P. Santos-Sanz, S. Fornasier, G. Marton, M. Mommert, A. Farkas-Takács, A. Thirouin and E. Vilenius: Icarus 334, 39-51 (2019).
- Muñoz-Darias, T., F. Jiménez-Ibarra, G. Panizo-Espinar, J. Casares, D. MataSánchez, G. Ponti, R.P. Fender, D.A.H. Buckley, P. Garnavich, M.A.P. Torres, M. Armas Padilla, P.A. Charles, J.M. Corral-Santana, J.J.E. Kajava, E.J. Kotze, C. Littlefield, J. Sánchez-Sierras, D. Steeghs and J. Thomas: Hard-state Accretion Disk Winds from Black Holes: The Revealing Case of MAXI J1820+070. *Ap. J. Lett.* 879, L4 (2019).
- Mulroy, S.L., A. Farahi, A.E. Evrard, G.P. Smith, A. Finoguenov, C. O'Donnell, D.P. Marrone, Z. Abdulla, H. Bourdin, J.E. Carlstrom, J. Démoclès, C.P. Haines, R. Martino, P. Mazzotta, S.L. McGee and N. Okabe: LoCuSS: scaling relations between galaxy cluster mass, gas, and stellar content. *Mon. Not. R. Astron. Soc.* 484, 60-80 (2019).
- Nagarajan, A., F. Pacaud, M. Sommer, M. Klein, K. Basu, F. Bertoldi, A.T. Lee, P.A.R. Ade, A.N. Bender, D. Ferrusca, N.W. Halverson, C. Horellou, B.R. Johnson, J. Kennedy, R. Kneissl, K.M. Menten, C.L. Reichardt, C. Tucker and B. Westbrook: Weak-lensing mass calibration of the Sunyaev-Zel'dovich effect using APEX-SZ galaxy clusters. *Mon. Not. R. Astron. Soc.* 488, 1728-1759 (2019).
- Nagy, Z.N., S. Spezzano, P. Caselli, A. Vasyunin, M. Tafalla, L. Bizzocchi, D. Prudenzeno, and E. Redaelli: The chemical structure of the very young starless core L1521E. *Astron. Astrophys.* 630, A136, 1-13 (2019).
- Namiki, S.V., Y. Koyama, M. Hayashi, K.-i. Tadaki, N. Kashikawa, M. Onodera, R. Shimakawa, T. Kodama, I. Tanaka, N.M. Förster Schreiber, J. Kurk and R. Genzel: A Spectroscopic Study of a Rich Cluster at $z = 1.52$ with Subaru and LBT: The Environmental Impacts on the Mass-Metallicity Relation. *Ap. J.* 877, 118 (2019).
- Nedelchev, B., L. Coccato, E.M. Corsini, M. Sarzi, T. de Zeeuw, A. Pizzella, E. Dalla Bontà, E. Iodice and L. Morelli: The properties of the kinematically distinct components in NGC 448 and NGC 4365. *Astron. Astrophys.* 623, A87 (2019).
- Nelson, E.J., K.-i. Tadaki, L.J. Tacconi, D. Lutz, N.M. Förster Schreiber, A. Cibinel, S. Wuyts, P. Lang, J. Leja, M. Montes, P.A. Oesch, S. Belli, R.L. Davies, R.I. Davies,

- R. Genzel, M. Lippa, S.H. Price, H. Übler and E. Wisnioski: Millimeter Mapping at $z \sim 1$: Dust-obscured Bulge Building and Disk Growth. *Ap. J.* 870, 130 (2019).
- Neppl, S., G. Landry, C. Kurz, D.C. Hansen, B. Hoyle, S. Stöcklein, M. Seidensticker, J. Weller, C. Belka, K. Parodi and F. Kamp: Evaluation of proton and photon dose distributions recalculated on 2D and 3D Unet-generated pseudoCTs from T1-weighted MR head scans. *Acta Oncologica* 58(10), 1-7 (2019).
- Niederwanger, F., O. Reimer, R. Kissmann, A.W. Strong, C.C. Popescu and R. Tuffs: The consequence of a new ISRF model of the Milky Way on predictions for diffuse gamma-ray emission. *Astroparticle Phys.* 107, 1-14 (2019).
- Norris, R.P., M. Salvato, G. Longo, M. Brescia, T. Budavari, S. Carliles, S. Cavuoti, D. Farrah, J. Geach, K. Luken, A. Musaeva, K. Polsterer, G. Riccio, N. Seymour, V. Smolčić, M. Vaccari, P. Zinn: A Comparison of Photometric Redshift Techniques for Large Radio Surveys. *Publ. Astron. Soc. Pac.* 131, I. 1004, 108004 (2019).
- Ogiya, G, F.C. van den Bosch, O. Hahn, S.B. Green, T.B. Miller and A. Burkert: DASH: a library of dynamical subhalo evolution. *Mon. Not. R. Astron. Soc.* 485, 189-202 (2019).
- Omori, Y., E.J. Baxter, C. Chang, ..., J.J. Mohr, ..., J. Weller, ..., O. Zahn and DES Collaboration and SPT Collaboration: Dark Energy Survey Year 1 Results: Cross-correlation between Dark Energy Survey Y1 galaxy weak lensing and South Pole Telescope+Planck CMB weak lensing. *Physical Review D* 100, 043517 (2019).
- Omori, Y., T. Giannantonio, A. Porredon, ..., B. Hoyle, ..., J.J. Mohr, ..., and DES Collaboration and SPT Collaboration: Dark Energy Survey Year 1 Results: Tomographic cross-correlations between Dark Energy Survey galaxies and CMB lensing from South Pole Telescope + Planck. *Physical Review D* 100, 043501 (2019).
- Onić, D., M.D. Filipović, I. Bojčić, N. Hurley-Walker, B. Arbutina, T.G. Pannuti, C. Maitra, D. Urošević, F. Haberl, N. Maxted, G.F. Wong, G. Rowell, M.E. Bell, J.R. Callingham, K.S. Dwarakanath, B.-Q. For, P.J. Hancock, L. Hindson, M. Johnston-Hollitt, A.D. Kapińska, E. Lenc, B. McKinley, J. Morgan, A.R. Offringa, L.E. Porter, P. Procopio, L. Staveley-Smith, R.B. Wayth, C. Wu and Q. Zheng: Murchison Widefield Array and XMM-Newton observations of the Galactic supernova remnant G5.9+3.1. *Astron. Astrophys.* 625, A93 (2019).
- Palmerio, J.T., S.D. Vergani, R. Salvaterra, R.L. Sanders, J. Japelj, A. Vidal-García, P. D'Avanzo, D. Corre, D.A. Perley, A.E. Shapley, S. Boissier, J. Greiner, E. Le Floch and P. Wiseman: Are long gamma-ray bursts biased tracers of star formation? Clues from the host galaxies of the Swift/BAT6 complete sample of bright LGRBs. III. Stellar masses, star formation rates, and metallicities at $z > 1$. *Astron. Astrophys.* 623, A26 (2019).
- Pan-Starrs Collaboration, E. Kankare, M. Huber, ..., T.-W. Chen, et al.: Search for transient optical counterparts to high-energy IceCube neutrinos with Pan-STARRS1. *Astron. Astrophys.* 626, A117 (2019).
- Pastorello, A., T.-W. Chen, Y.-Z. Cai, A. Morales-Garoffolo, Z. Cano, E. Mason, E.A. Barsukova, S. Benetti, M. Berton, S. Bose, F. Bufano, E. Callis, G. Cannizzaro, R. Cartier, P. Chen, S. Dong, S. Dyrbye, N. Elias-Rosa, A. Flörs, M. Fraser, S. Geier, V.P. Goranskij, D.A. Kann, H. Kuncarayakti, F. Onori, A. Reguitti, T. Reynolds, I.R. Losada, A. Sagués-Carcedo, T. Schweyer, S.J. Smartt, A.M. Tatarnikov, A.F. Valeev, C. Vogl, T. Wevers, A. de Ugarte Postigo, L. Izzo, C. Inserra, E. Kankare, K. Maguire, K.W. Smith, B. Stalder, L. Tartaglia, C.C. Thöne, G. Valerin and D.R. Young: The evolution of luminous red nova AT 2017jfs in NGC 4470. *Astron. Astrophys.* 625, L8 (2019).
- Peng, J., Y.C.-M. Liu, J. Huang, B. Klecker and C. Wang: The warped heliospheric current sheet. *J. Geophys. Res. (Space Phys.)*, 124, 9814-9823 (2019).
- Pietropolli Charmet, A., L. Bizzocchi, B.M. Giuliano, P. Caselli, N.C. Craig and S.V. Krasnoshchekov: Disentangling the IR spectra of 2,3,3,3-tetrafluoropropene using an ab initio description of vibrational polyads by means of canonical Van Vleck perturbation theory. *Journal of Quantitative Spectroscopy and Radiative Transfer* 239, 106656, (2019).
- Pineda, J.E., B. Zhao, A. Schmiedeke, D.M. Segura-Cox, P. Caselli, P.C. Myers, J.J. Tobin and M. Dunham: The Specific Angular Momentum Radial Profile in Dense Cores: Improved Initial Conditions for Disk Formation. *Ap. J.* 882, 103 (2019).
- Pineda, J.E., J. Szulágyi, S.P. Quanz, E.F. van Dishoeck, A. Garufi, F. Meru, G.D. Mulders, L. Testi, M.R. Meyer and M. Reggiani: High-resolution ALMA Observations of HD 100546: Asymmetric Circumstellar Ring and Circumplanetary Disk Upper Limits. *Ap. J.* 871, 48 (2019).
- Pinilla, P., M. Benisty, P. Cazzoletti, D. Harsono, Pérez, L.M. and M. Tazzari: An inner disk in the large gap of the transition disk SR 24S. *Ap. J.* 878(1), 16 (2019).
- Pinna F., J. Falcón-Barroso, M. Martig, M. Sarzi, L. Coccato, E. Iodice, E.M. Corsini, P.T. de Zeeuw, D.A. Gadotti, R. Leaman, M. Lyubenova, R.M. McDermid, I. Minchev, L. Morelli, G. van de Ven and S. Viaene: The Fornax3D project. Unveiling the thick disk origin in FCC 170: signs of accretion?. *Astron. Astrophys.* 623, A19 (2019).
- Pinna F., Falcón-Barroso J., M. Martig, L. Coccato, E.M. Corsini, P.T. de Zeeuw, D.A. Gadotti, E. Iodice, R. Leaman, M. Lyubenova, I. Martín-Navarro, L. Morelli, M. Sarzi, van de Ven, S. Viaene and R.M. McDermid: The Fornax3D project: Thick disks in a cluster environment. *Astron. Astrophys.* 625, A95 (2019).
- Pinna, F., J. Falcón-Barroso, M. Martig, M. Sarzi, L. Coccato, E. Iodice, E.M. Corsini, de Zeeuw, P.T., D.A. Gadotti, R. Leaman, M. Lyubenova, McDermid, R.M., I. Minchev, L. Morelli, van de Ven, G. and S. Viaene: The Fornax 3D project: Unveiling the thick disk origin in FCC 170; possible signs of accretion. *Astron. Astrophys.* 623, A19 (2019).
- Pires, A.M., A.D. Schwöpe, F. Haberl, V.E. Zavlin, C. Motch and S. Zane: A deep XMM-Newton look on the thermally

emitting isolated neutron star RX J1605.3+3249. *Astron. Astrophys.* 623, A73 (2019).

Pleintinger, M.M.M., T. Siebert, R. Diehl, Y. Fujimoto, J. Greiner, M.G.H. Krause and M.R. Krumholz: Comparing simulated 26Al maps to gamma-ray measurements. *Astron. Astrophys.* 632, A73 (2019).

Pollina, G., N. Hamaus, K. Paech, ..., B. Hoyle, ..., and DES Collaboration: On the relative bias of void tracers in the Dark Energy Survey. *Mon. Not. R. Astron. Soc.* 487, 2836-2852 (2019).

Ponti, G., F. Hofmann, E. Churazov, M.R. Morris, F. Haberl, K. Nandra, R. Terrier, M. Clavel and A. Goldwurm: An X-ray chimney extending hundreds of parsecs above and below the Galactic Centre. *Nature* 567, 347-350 (2019).

Ponti, G., S. Bianchi, B. De Marco, A. Bahramian, N. Degenaar and C.O. Heinke: Evolution of the disc atmosphere in the X-ray binary MXB 1659-298, during its 2015-17 outburst. *Mon. Not. R. Astron. Soc.* 487, 858-870 (2019).

Popesso, P., A. Concas, L. Morselli, C. Schreiber, G. Rodighiero, G. Cresci, S. Belli, G. Erfanianfar, C. Mancini, H. Inami, M. Dickinson, O. Ilbert, M. Pannella, D. Elbaz: The main sequence of star-forming galaxies - I. The local relation and its bending. *Mon. Not. R. Astron. Soc.* 483, 3213-3226 (2019).

Popesso, P., L. Morselli, A. Concas, C. Schreiber, G. Rodighiero, G. Cresci, S. Belli, O. Ilbert, G. Erfanianfar, C. Mancini, H. Inami, M. Dickinson, M. Pannella, D. Elbaz: The main sequence of star-forming galaxies - II. A non-evolving slope at the high-mass end. *Mon. Not. R. Astron. Soc.* 490, 5285-5299 (2019).

Prat, J., E. Baxter, T. Shin, ..., J.J. Mohr, ..., J. Weller, et al.: Cosmological lensing ratios with DES Y1, SPT, and Planck. *Mon. Not. R. Astron. Soc.* 487, 1363-1379 (2019).

Prentice, S.J., C. Ashall, P.A. James, L. Short, P.A. Mazzali, D. Bersier, P.A. Crowther, C. Barbarino, T.-W. Chen, C.M. Copperwheat, M.J. Darnley, L. Denneau, N. Elias-Rosa, M. Fraser, L. Galbany, A. Gal-Yam, J. Harmanen, D.A. Howell, G. Hosseinzadeh, C. Inserra, E. Kankare, E. Karamehmetoglu, G.P. Lamb, M. Limongi, K. Maguire, C. McCully, F. Olivares E, A.S. Piascik, G. Pignata, D.E. Reichart, A. Rest, T. Reynolds, Ó. Rodríguez, J.L.O. Saario, S. Schulze, S.J. Smartt, K.W. Smith, J. Sollerman, B. Stalder, M. Sullivan, F. Taddia, S. Valenti, S.D. Vergani, S.C. Williams and D.R. Young: Investigating the properties of stripped-envelope supernovae; what are the implications for their progenitors?. *Mon. Not. R. Astron. Soc.* 485, 1559-1578 (2019).

Prieto, M.A., J.A. Fernandez-Ontiveros, G. Bruzual, A. Burkert, M. Schartmann and S. Charlot: From kpcs to the central parsec of NGC 1097: feeding star formation and a black hole at the same time. *Mon. Not. R. Astron. Soc.* 485, 3264-3276 (2019).

Prudeniano, D., F. Lique, R. Ramachandran, L. Bizzocchi and P. Caselli: Collisional excitation of NH(3 Σ^-) by Ar: A new ab initio 3D potential energy surface and scattering calculations. *Journal of Chemical Physics* 150, 214302 (2019).

Querejeta, M., E. Schinnerer, A. Schrubba, E. Murphy, S. Meidt, A. Usero, A.K. Leroy, J. Pety, F. Bigiel, M. Chevance, C.M. Faesi, M. Gallagher, S. García-Burillo, S.C.O. Glover, A.P.S. Hygate, M.J. Jiménez-Donaire, J.M.D. Kruijssen, E. Momjian, E. Rosolowsky and D. Utomo: Dense gas is not enough: environmental variations in the star formation efficiency of dense molecular gas at 100 pc scales in M 51. *Astron. Astrophys.* 625, A19 (2019).

Rab, C., I. Kamp, C. Ginski, N. Oberg, G.A. Muro-Arena, C. Dominik, L.B.F.M. Waters, W.-F. Thi and P. Woitke: Observing the gas component of circumplanetary disks around wide-orbit planet-mass companions in the (sub) mm regime. *Astron. Astrophys.* 624, A16 (2019).

Rabien, S., R. Angel, L. Barl, U. Beckmann, L. Busoni, S. Belli, M. Bonaglia, J. Borelli, J. Brynnel, P. Buschkamp, A. Cardwell, A. Contursi, C. Connot, R. Davies, M. Deysenroth, O. Durney, F. Eisenhauer, M. Elberich, S. Esposito, B. Frye, W. Gaessler, V. Gasho, H. Gemperlein, R. Genzel, I.Y. Georgiev, R. Green, M. Hart, C. Kohlmann, M. Kulas, M. Lefebvre, T. Mazzoni, J. Noenickx, G. Orbande Xivry, T. Ott, D. Peter, A. Puglisi, Y. Qin, A. Quirrenbach, W. Raab, M. Rademacher, G. Rahmer, M. Rosensteiner, H.W. Rix, P. Salinari, C. Schwab, A. Sivitilli, M. Steinmetz, J. Storm, C. Veillet, G. Weigelt and J. Ziegler: ARGOS at the LBT. Binocular laser guided ground-layer adaptive optics. *Astron. Astrophys.* 621, A4 (2019).

Raghunathan, S., S. Patil, E. Baxter, ..., B. Hoyle, et al.: Mass Calibration of Optically Selected DES Clusters Using a Measurement of CMB-cluster Lensing with SPTpol Data. *Ap. J.* 872, 170 (2019).

Raghunathan, S., S. Patil, E. Baxter, ..., T.N. Varga, et al.: Detection of CMB-cluster lensing using polarization data from SPTpol. *Physical Review Letters*, 123(18), 181301 (2019).

Rampazzo, R., M. Uslenghi, I.Y. Georgiev, A. Cattapan, L. Verdes-Montenegro, M. Bonaglia, J.L. Borelli, L. Busoni, G. Wolfgang, D. Magrin, A. Marino, P. Mazzei, T. Mazzoni, D. Peter, S. Rabien, R. Ragazzoni and M. Rosensteiner: High-resolution morphology and surface photometry of KIG 685 and KIG 895 with ARGOS+LUCI using the Large Binocular Telescope. *Astronomische Nachrichten* 341(1), 10-25 (2019).

Rantala, A., P.H. Johansson, T. Naab, J. Thomas and M. Frigo: The simultaneous formation of cored, tangentially biased, and kinematically decoupled centers in massive early-type galaxies. *Ap. J. Letters* 872(2), L17 (2019).

Ravaji, B., V. Ali-Lagoa, M. Delbo and J.W. Wilkerson: Unraveling the mechanics of thermal stress weathering: rate-effects, size-effects, and scaling laws. *Journal of Geophysical Research - Space Physics* 124(2) (2019).

Redaelli, E., F.O. Alves, F.P. Santos and P. Caselli: Magnetic properties of the protostellar core IRAS 15398-3359. *Astron. Astrophys.* 631, A154, (2019).

Redaelli, E., L. Bizzocchi, P. Caselli, O. Sipilä, V. Lattanzi, B.M. Giuliano and S. Spezzano: High-sensitivity maps of molecular ions in L1544. I. Deuteration of N₂H⁺ and HCO⁺ and primary evidence of N₂D⁺ depletion. *Astron. Astro-*

- phys. 629, A15 (2019).
- Reed, S.L., M. Banerji, G.D. Becker, ..., B. Hoyle, et al.: Three new VHS-DES quasars at $6.7 < z < 6.9$ and emission line properties at $z > 6.5$. *Mon. Not. R. Astron. Soc.* 487, 1874-1885 (2019).
- Rehmann, R.L., D. Gruen, S. Seitz, R. Bender, A. Riffeser, M. Kluge, C. Goessl, U. Hopp, A. Mana, C. Ries and M. Schmidt: The Wendelstein Weak Lensing (WWL) pathfinder: accurate weak lensing masses for Planck clusters. *Mon. Not. R. Astron. Soc.* 486, 77-100 (2019).
- Riaz, B., W.-F. Thi and P. Caselli: Chemical tracers in proto-brown dwarfs: CO, ortho-H₂CO, para-H₂CO, HCO⁺, CS observations. *Mon. Not. R. Astron. Soc.* 483, 1139-1157 (2019).
- Riguccini, L.A., E. Treister, K. Menéndez-Delmestre, C. Cardamone, F. Civano, T.S. Gonçalves, G. Hasinger, A.M. Koekemoer, G. Lanzuisi, E. Le Floch, E. Lusso, D. Lutz, S. Marchesi, T. Miyaji, F. Pozzi, C. Ricci, G. Rodighiero, M. Salvato, D. Sanders, K. Schawinski and H. Suh: The Composite Nature of Dust-obscured Galaxies (DOGs) at $z \sim 2-3$ in the COSMOS Field. II. The AGN Fraction. *Astron. J.* 157, 233 (2019).
- Rivilla, V.M., M.T. Beltrán, A. Vasyunin, P. Caselli, S. Viti, F. Fontani and R. Cesaroni: First ALMA maps of HCO, an important precursor of complex organic molecules, towards IRAS 16293-2422. *Mon. Not. R. Astron. Soc.* 483, 806-823 (2019).
- Rodgers-Lee, D., M.G.H. Krause, J. Dale and R. Diehl: Synthetic 26Al emission from galactic-scale superbubble simulations. *Mon. Not. R. Astron. Soc.* 490, 1894-1912 (2019).
- Rojas, A.F., E. Sani, I. Gavignaud, C. Ricci, I. Lamperti, M. Koss, B. Trakhtenbrot, K. Schawinski, K. Oh, F.E. Bauer, M. Bischetti, R. Boissay-Malaquin, A. Bongiorno, F. Harrison, D. Kakkad, N. Masetti, F. Ricci, T. Shimizu, M. Stalevski, D. Stern and G. Vietri: BAT AGN Spectroscopic Survey – XIX. Type 1 versus type 2 AGN dichotomy from the point of view of ionized outflows. *Mon. Not. R. Astron. Soc.* 491(4), 5867-5880 (2019).
- Rosario, D., A. Togi, L. Burtscher, R. Davies, T. Shimizu and D. Lutz: An Accreting Supermassive Black Hole Irradiating Molecular Gas in NGC 2110. *Ap. J. Lett.* 875, L8, (2019).
- Ruggeri, R., W.J. Percival, H. Gil-Marín, F. Beutler, E.M. Mueller, F. Zhu, N. Padmanabhan, G.B. Zhao, P. Zarrouk, A.G. Sánchez, J. Bautista, J. Brinkmann, J.R. Brownstein, F. Baumgarten, C.H. Chuang, K. Dawson, H.J. Seo, R. Tojeiro and C. Zhao: The clustering of the SDSS-IV extended Baryon Oscillation Spectroscopic Survey DR14 quasar sample: measuring the evolution of the growth rate using redshift-space distortions between redshift 0.8 and 2.2. *Mon. Not. R. Astron. Soc.* 483, 3878-3887 (2019).
- Ryde, F., H.-F. Yu, H. Dereli-Bégué, C. Lundman, A. Pe'er and L. Li: On the α -intensity correlation in gamma-ray bursts: subphotospheric heating with varying entropy. *Mon. Not. R. Astron. Soc.* 484, 1912-1925 (2019).
- Sabiu, C.G., B. Hoyle, J. Kim and X.-D. Li: Graph Database Solution for Higher-order Spatial Statistics in the Era of Big Data. *Ap. J. Suppl. Ser.* 242, 29 (2019).
- Sadavoy, S.I., I.W. Stephens, Myers, P.C., L. Looney, J. Tobin, W. Kwon, B. Commerçon, D. Segura-Cox, T. Henning and P. Hennebelle: Dust polarization toward embedded protostars in Ophiuchus with ALMA. III. Survey overview. *Ap. J. Suppl. Ser.* 245(1), 2 (2019).
- Salvato, M., O. Ilbert and B. Hoyle: The many flavours of photometric redshifts. *Nature Astronomy* 3, 212-222 (2019).
- Samuelsson, F., D. Bégué, F. Ryde and Asaf Pe'er: The Limited Contribution of Low- and High-luminosity Gamma-Ray Bursts to Ultra-high-energy Cosmic Rays. *Ap. J.* 876, 93 (2019).
- Samuroff, S., J. Blazek, M.A. Troxel, ..., B. Hoyle, ..., and DES Collaboration: Dark Energy Survey Year 1 results: constraints on intrinsic alignments and their colour dependence from galaxy clustering and weak lensing. *Mon. Not. R. Astron. Soc.* 489, 5453-5482 (2019).
- Sanders, R.L., T. Jones, A.E. Shapley, Reddy, N.A., M. Kriek, A.L. Coil, B. Siana, B. Mobasher, I. Shivaie, S.H. Price, Freeman, W.R., M. Azadi, Leung, G.C. K., T. Fetherolf, T.O. Zick, de L. Groot, G. Barro and Fornasini, F.M.: The MOSDEF Survey: [S iii] as a new probe of evolving interstellar medium conditions. *Ap. J. Letters* 888(1), L11 (2019).
- Sanders, R.L., A.E. Shapley, Reddy, N.A., M. Kriek, B. Siana, A.L. Coil, B. Mobasher, I. Shivaie, W.R. Freeman, M. Azadi, S.H. Price, G. Leung, T. Fetherolf, de L. Groot, T. Zick, Fornasiniand, F.M. and G. Barro: The MOSDEF survey: direct-method metallicities and ISM conditions at $z \sim 1.5-3.5$. *Mon. Not. R. Astron. Soc.* 491(1), 1427-1455 (2019).
- Saxton, R., C. Motch, S. Komossa, P. Lira, A. Read, K. Alexander, M. Descalzo, Ö. Koenig and M. Freyberg: Tidal disruption events: Past, present, and future. *Astron. Nachr.* 340, 351-356 (2019).
- Schady, P., J.J. Eldridge, J. Anderson, T.-W. Chen, L. Galbany, H. Kuncarayakti and L. Xiao: The 50-100 pc scale parent stellar populations of Type II supernovae and limitations of single star evolution models. *Mon. Not. R. Astron. Soc.* 490, 4515-4535 (2019).
- Schinnerer, E., A. Hughes, A. Leroy, B. Groves, G.A. Blanc, K. Kreckel, F. Bigiel, M. Chevance, D. Dale, E. Emsellem, C. Faesi, S. Glover, K. Grasha, J. Henshaw, A. Hygate, J.M.D. Kruijssen, S. Meidt, J. Pety, M. Querejeta, E. Rosolowsky, T. Saito, A. Schruba, J. Sun and D. Utomo: The Gas Star Formation Cycle in Nearby Star-forming Galaxies. I. Assessment of Multi-scale Variations. *Ap. J.* 887, 49 (2019).
- Schinnerer, E., A. Hughes, A. Leroy, ..., A. Merloni, et al.: The LOFAR two-metre sky Survey: II. First data release. *Astron. Astrophys.* 622, A1 (2019).
- Schruba, A., J.M.D. Kruijssen and A.K. Leroy: How Galactic Environment Affects the Dynamical State of Molecular Clouds and Their Star Formation Efficiency. *Ap. J.* 883, 2 (2019).

Schuster, N., N. Hamaus, A. Pisani, C. Carbone, C.D. Kreisch, G. Pollina and J. Weller: The bias of cosmic voids in the presence of massive neutrinos. *J. of Cosmology and Astroparticle Phys.* 12, 055S (2019).

Schwörer, A., Á. Sánchez-Monge, P. Schilke, T. Müller, A. Ginsburg, F. Meng, A. Schmiedeke, H.S.P. Müller, D. Lis and S.-L. Qin: The physical and chemical structure of Sagittarius B2. IV. Converging filaments in the high-mass cluster forming region Sgr B2(N). *Astron. Astrophys.* 628, A6 (2019).

Selsing, J., D. Malesani, P. Goldoni, J.P.U. Fynbo, T. Krühler, L.A. Antonelli, M. Arabalmani, J. Bolmer, Z. Cano, L. Christensen, S. Covino, P. D'Avanzo, V. D'Elia, A. De Cia, A. de Ugarte Postigo, H. Flores, M. Friis, A. Gomboc, J. Greiner, P. Groot, F. Hammer, O.E. Hartoog, K.E. Heintz, J. Hjorth, P. Jakobsson, J. Japelj, D.A. Kann, L. Kaper, C. Ledoux, G. Leloudas, A.J. Levan, E. Maiorano, A. Melandri, B. Milvang-Jensen, E. Palazzi, J.T. Palmerio, D.A. Perley, E. Pian, S. Piranomonte, G. Pugliese, R. Sánchez-Ramírez, S. Savaglio, P. Schady, S. Schulze, J. Sollerman, M. Sparre, G. Tagliaferri, N.R. Tanvir, C.C. Thöne, S.D. Vergani, P. Vreeswijk, D. Watson, K. Wiersema, R. Wijers, D. Xu and T. Zafar: The X-shooter GRB afterglow legacy sample (XS-GRB). *Astron. Astrophys.* 623, A92 (2019).

Shajib, A.J., S. Birrer, T. Treu, ..., B. Hoyle, et al.: Is every strong lens model unhappy in its own way? Uniform modelling of a sample of 13 quadruply+ imaged quasars. *Mon. Not. R. Astron. Soc.* 483, 5649-5671 (2019).

Shapley, A.E., R.L. Sanders, P. Shao, N.A. Reddy, M. Kriek, A.L. Coil, B. Mobasher, B. Siana, I. Shivaiei, W.R. Freeman, M. Azadi, S.H. Price, G.C.K. Leung, T. Fetherolf, L. de Groot, T. Zick, F.M. Fornasini and G. Barro: The MOSDEF Survey: Sulfur Emission-line Ratios Provide New Insights into Evolving Interstellar Medium Conditions at High Redshift. *Ap. J. Lett.* 881, L35 (2019).

Sharon, C.E., A.S. Tagore, A.J. Baker, J. Rivera, C.R. Keeton, D. Lutz, R. Genzel, D.J. Wilner, E.K.S. Hicks, S.S. Alam and D.L. Tucker: Resolved Molecular Gas and Star Formation Properties of the Strongly Lensed $z = 2.26$ Galaxy SDSS J0901+1814. *Ap. J.* 879, 52 (2019).

Shimizu, T.T., R.I. Davies, D. Lutz, L. Burtscher, M. Lin, D. Baron, R.L. Davies, R. Genzel, E.K.S. Hicks, M. Koss, W. Maciejewski, F. Müller-Sánchez, G. Orbande Xivry, S.H. Price, C. Ricci, R. Riffel, R.A. Riffel, D. Rosario, M. Schartmann, A. Schnorr-Müller, A. Sternberg, E. Sturm, T. Storchi-Bergmann, L. Tacconi and S. Veilleux: The multiphase gas structure and kinematics in the circumnuclear region of NGC 5728. *Mon. Not. R. Astron. Soc.* 490, 5860-5887 (2019).

Shin, T., S. Adhikari, E.J. Baxter, C. Chang, ..., N. Gupta, ..., B. Hoyle, ..., J.J. Mohr, et al.: Measurement of the splash-back feature around SZ-selected Galaxy clusters with DES, SPT, and ACT. *Mon. Not. R. Astron. Soc.* 487, 2900-2918 (2019).

Shingledecker, C.N., A. Vasyunin, E. Herbst and P. Caselli: On Simulating the Proton-Irradiation of O_2 and H_2O Ices Using Astrochemical-Type Models, with Implications for Bulk Reactivity. *Ap. J.* 876, 140S (2019).

Shingledecker, C.N., S. Alvarez-Barcia, V. Korn and J.K. Kaestner: The Case of H_2C_3O Isomers, Revisited: Solving the Mystery of the Missing Propadienone. *Ap. J.* 879, 80S, (2019).

Shingledecker, C.N., T. Lambers, J. Laas, A. Vasyunin, E. Herbst, J.K. Kaestner and P. Caselli: Efficient Production of S8 in Interstellar Ices: The effects of cosmic ray-driven radiation chemistry and non-diffusive bulk reactions. *Ap. J.* 888, 1, (2020).

Siegert, T., R. Diehl, C. Weinberger, M.M.M. Pleintinger, J. Greiner and X. Zhang: Background modelling for γ -ray spectroscopy with INTEGRAL/SPI. *Astron. Astrophys.* 626, A73 (2019).

Siegert, T., R.M. Crocker, R. Diehl, M.G.H. Krause, F.H. Panther, M.M.M. Pleintinger and C. Weinberger: Constraints on positron annihilation kinematics in the inner Galaxy. *Astron. Astrophys.* 627, A126 (2019).

Silsbee, K. and A.V. Ivlev: Diffusive versus Free-streaming Cosmic-Ray Transport in Molecular Clouds. *Ap. J.* 879, 14 (2019).

Sipilä, O., P. Caselli and J. Harju: Modeling deuterium chemistry in starless cores: full scrambling versus proton hop. *Astron. Astrophys.* 631, A63 (2019).

Sipilä, O., P. Caselli, E. Redaelli, M. Juvela and L. Bizzocchi: Why does ammonia not freeze out in the centre of pre-stellar cores?. *Mon. Not. R. Astron. Soc.* 487, 1269-1282 (2019).

Slater, R., N.M. Nagar, A. Schnorr-Müller, T. Storchi-Bergmann, C. Finlez, D. Lena, V. Ramakrishnan, C.G. Mundell, R.A. Riffel, B. Peterson, A. Robinson and G. Orellana: Outflows in the inner kiloparsec of NGC 1566 as revealed by molecular (ALMA) and ionized gas (Gemini-GMOS/IFU) kinematics. *Astron. Astrophys.* 621, A83 (2019).

Soares-Santos, M., A. Palmese, W. Hartley, J. Annis, ..., B. Hoyle, et al.: First Measurement of the Hubble Constant from a Dark Standard Siren using the Dark Energy Survey Galaxies and the LIGO/Virgo Binary-Black-hole Merger GW170814. *Ap. J. Lett.* 876, L7 (2019).

Sokolov, V., K. Wang, J.E. Pineda, P. Caselli, J.D. Henshaw, A.T. Barnes, J.C. Tan, F. Fontani and I. Jiménez-Serra: Multicomponent Kinematics in a Massive Filamentary Infrared Dark Cloud. *Ap. J.* 872, 30 (2019).

Staubert, R., J. Trümper, E. Kendziorra, D. Klochkov, K. Postnov, P. Kretschmar, K. Pottschmidt, F. Haberl, R.E. Rothschild, A. Santangelo, J. Wilms, I. Kreykenbohm and F. Fürst: Cyclotron lines in highly magnetized neutron stars. *Astron. Astrophys.* 622, A61 (2019).

Steinwandel, U.P., M.C. Beck, A. Arth, K. Dolag, B.P. Moster and P. Nielaba: Magnetic buoyancy in simulated galactic discs with a realistic circumgalactic medium. *Mon. Not. R. Astron. Soc.* 483, 1008-1028 (2019).

Stephens, I.W., T.L. Bourke, M.M. Dunham, P.C. Myers, R. Pokhrel, J.J. Tobin, H.G. Arce, S.I. Sadavoy, E.I. Vorobyov, J.E. Pineda, S.S.R. Offner, K.I. Lee, L.E. Kristensen, J.K. Jørgensen, M.A. Gurwell and A.A. Goodman: Mass Assembly of Stellar Systems and Their Evolution with the

- SMA (MASSES) - Full Data Release. *Ap. J. Supp. Ser.* 245, 21 (2019).
- Stern, C., J.P. Dietrich, S. Bocquet, D. Applegate, J.J. Mohr, ..., and DES Collaboration and SPT Collaboration: Weak-lensing analysis of SPT-selected galaxy clusters using Dark Energy Survey Science Verification data. *Mon. Not. R. Astron. Soc.* 485, 69-87 (2019).
- Strazzullo, V., M. Pannella, J.J. Mohr, A. Saro, M.L.N. Ashby, M.B. Bayliss, S. Bocquet, E. Bulbul, G. Khullar, A.B. Mantz, S.A. Stanford, B.A. Benson, L.E. Bleem, M. Brodwin, R.E.A. Canning, R. Capasso, I. Chiu, A.H. Gonzalez, N. Gupta, J. Hlavacek-Larrondo, M. Klein, M. McDonald, E. Noordeh, D. Rapetti, C.L. Reichardt, T. Schrabback, K. Sharon and B. Stalder: Galaxy populations in the most distant SPT-SZ clusters. I. Environmental quenching in massive clusters at $1.4 \leq z \leq 1.7$. *Astron. Astrophys.* 622, A117 (2019).
- Stringer, K.M., J.P. Long, L.M. Macri, ..., B. Hoyle, ..., and DES Collaboration: Identification of RR Lyrae Stars in Multiband, Sparsely Sampled Data from the Dark Energy Survey Using Template Fitting and Random Forest Classification. *Astron. J.* 158, 16 (2019).
- Suess, K.A., M. Kriek, S.H. Price and G. Barro: Half-mass Radii for 7000 Galaxies at $1.0 \leq z \leq 2.5$: Most of the Evolution in the Mass-Size Relation Is Due to Color Gradients. *Ap. J.* 877, 103 (2019).
- Suess, K.A., M. Kriek, S.H. Price and G. Barro: Half-mass Radii of Quiescent and Star-forming Galaxies Evolve Slowly from $0 \leq z \leq 2.5$: Implications for Galaxy Assembly Histories. *Ap. J. Lett.* 885, L22 (2019).
- Sugita, S., R. Honda, T. Morota, ..., T.G. Müller, et al.: The geomorphology, color, and thermal properties of Ryugu: Implications for parent-body processes. *Science* 364, 252-252 (2019).
- Suri, S., P. Á. Sánchez-Monge, P. Schilke, S.D. Clarke, R.J. Smith, V. Ossenkopf-Okada, R. Klessen, P. Padoan, P. Goldsmith, H.G. Arce, J. Bally, J.M. Carpenter, A. Ginsburg, D. Johnstone, J. Kauffmann, S. Kong, D.C. Lis, S. Mairs, T. Pillai, J.E. Pineda and A. Duarte-Cabral: The CARMA-NRO Orion Survey. Filamentary structure as seen in C18O emission. *Astron. Astrophys.* 623, A142 (2019).
- Tadaki, K.-i., D. Iono, B. Hatsukade, K. Kohno, M.M. Lee, Y. Matsuda, T. Michiyama, K. Nakanishi, T. Nagao, T. Saito, Y. Tamura, J. Ueda and H. Umehata: CNO Emission of an Unlensed Submillimeter Galaxy at $z = 4.3$. *Ap. J.* 876, 1 (2019).
- Taniguchi, K., E. Herbst, P. Caselli, A. Paulive, D.M. Maffucci and M. Saito: Cyanopolyne Chemistry around Massive Young Stellar Objects. *Ap. J.* 881, 57 (2019).
- Tanvir, N.R., J.P.U. Fynbo, A. de Ugarte Postigo, ..., T. Krühler, et al.: The fraction of ionizing radiation from massive stars that escapes to the intergalactic medium. *Mon. Not. R. Astron. Soc.* 483, 5380-5408 (2019).
- Thater S., D. Krajnovic, M. Cappellari, T.A. Davis, P.T. de Zeeuw, R.M. McDermid and M. Sarzi: Six new supermassive black hole mass determinations from adaptive-optics assisted SINFONI observations. *Astron. Astrophys.* 625, A62 (2019).
- Thi, W.F., G. Lesur, P. Woitke, I. Kamp, Ch. Rab and A. Carmona: Radiation thermo-chemical models of protoplanetary disks. Grain and polycyclic aromatic hydrocarbon charging. *Astron. Astrophys.* 632, A44 (2019).
- Tobin, J.J., S.T. Megeath, M. van't Hoff, A.K. Díaz-Rodríguez, N. Reynolds, M. Osorio, G. Anglada, E. Furlan, N. Karnath, S.S.R. Offner, P.D. Sheehan, S.I. Sadavoy, A.M. Stutz, W.J. Fischer, M. Kama, M. Persson, J. Di Francesco, L.W. Looney, D.M. Watson, Z.-Y. Li, I. Stephens, C.J. Chandler, E. Cox, M.M. Dunham, K. Kratter, M. Kounkel, B. Mazur, N.M. Murillo, L. Patel, L. Perez, D. Segura-Cox, R. Sharma, Ł. Tychoniec and F. Wyrowski: The VLA/ALMA Nascent Disk and Multiplicity (VANDAM) Survey of Orion Protostars. I. Identifying and Characterizing the Protostellar Content of the OMC-2 FIR4 and OMC-2 FIR3 Regions. *Ap. J.* 886, 6 (2019).
- Trapman, L., S. Facchini, M.R. Hogerheijde, E.F. van Dishoeck and S. Bruderer: Gas versus dust sizes of protoplanetary discs: effects of dust evolution. *Astron. Astrophys.* 629, A79 (2019).
- Traulsen, I., A.D. Schwobe, G. Lamer, J. Ballet, F. Carrera, M. Coriat, M.J. Freyberg, L. Michel, C. Motch, S.R. Rosen, N. Webb, M.T. Ceballos, F. Koliopanos, J. Kurpas, M.J. Page and M.G. Watson: The XMM-Newton serendipitous survey. VIII. The first XMM-Newton serendipitous source catalogue from overlapping observations. *Astron. Astrophys.* 624, A77 (2019).
- Troja, E., H. van Eerten, G. Ryan, R. Ricci, J.M. Burgess, M.H. Wieringa, L. Piro, S.B. Cenko and T. Sakamoto: A year in the life of GW 170817: the rise and fall of a structured jet from a binary neutron star merger. *Mon. Not. R. Astron. Soc.* 489, 1919-1926 (2019).
- Tychoniec, Ł., C.L.H. Hull, L.E. Kristensen, J.J. Tobin, V.J.M. Le Gouellec and E.F. van Dishoeck: Chemical and kinematic structure of extremely high-velocity molecular jets in the Serpens Main star-forming region. *Astron. Astrophys.* 632, A101 (2019).
- Török, G., K. Goluchová, E. Šrámková, M. Urbanec and O. Straub: Time-scale of twin-peak quasi-periodic oscillations and mass of accreting neutron stars. *Mon. Not. R. Astron. Soc.* 488, 3896-3903 (2019).
- Ubeira Gabellini, M.G., A. Miotello, S. Facchini, E. Ragusa, G. Lodato, L. Testi, M. Benisty, S. Bruderer, N.T. Kurtovic, S. Andrews, J. Carpenter, S.A. Corder, G. Dipierro, B. Ercolano, D. Fedele, G. Guidi, T. Henning, A. Isella, W. Kwon, H. Linz, M. McClure, L. Perez, L. Ricci, G. Rosotti, M. Tazzari and D. Wilner: A dust and gas cavity in the disc around CQ Tau revealed by ALMA. *Mon. Not. R. Astron. Soc.* 486, 4638-4654 (2019).
- Übler, H., R. Genzel, E. Wisnioski, N.M. Förster Schreiber, T.T. Shimizu, S.H. Price, L.J. Tacconi, S. Belli, D.J. Wilman, M. Fosati, J.T. Mendel, R.L. Davies, A. Beifiori, R. Bender, G.B. Brammer, A. Burkert, J. Chan, R.I. Davies, M. Fabricius, A. Galametz, R. Herrera-Camus, P. Lang, D. Lutz, I.G. Momcheva, T. Naab, E.J. Nelson, R.P. Saglia,

- K. Tadaki, P.G. van Dokkum and S. Wuyts: The Evolution and Origin of Ionized Gas Velocity Dispersion from $z \sim 2.6$ to $z \sim 0.6$ with KMOS3D. *Ap. J.* 880, 48 (2019).
- van de Sande, J., C.D.P. Lagos, C. Welker, J. Bland-Hawthorn, F. Schulze, R.-S. Remus, Y. Bahé, S. Brough, J.J. Bryant, L. Cortese, S.M. Croom, J. Devriendt, Y. Dubois, M. Goodwin, I.S. Konstantopoulos, J.S. Lawrence, A.M. Medling, C. Pichon, S.N. Richards, S.F. Sanchez, N. Scott and S.M. Sweet: The SAMI Galaxy Survey: comparing 3D spectroscopic observations with galaxies from cosmological hydrodynamical simulations. *Mon. Not. R. Astron. Soc.* 484, 869-891 (2019).
- van 't Hoff, M.L. R., E.F. van Dishoeck, Jørgensen, J.K. and H. Calcutt: Temperature profiles of young disk-like structures - The case of IRAS 16293A. *Astron. Astrophys.* 633, A7 (2019).
- van Terwisga, S.E., A. Hacar and E.F. van Dishoeck: Disk masses in the Orion Molecular Cloud-2: distinguishing time and environment. *Astron. Astrophys.* 628, A85 (2019).
- van Terwisga, S.E., E.F. van Dishoeck, P. Cazzoletti, S. Facchini, L. Trapman, J.P. Williams, C.F. Manara, A. Miotello, N. van der Marel, M. Ansdell, M.R. Hogerheijde, M. Tazzari and L. Testi: The ALMA Lupus protoplanetary disk survey: evidence for compact gas disks and molecular rings from CN. *Astron. Astrophys.* 623, A150 (2019).
- Vardoulaki, E., E.F. Jiménez Andrade, A. Karim, M. Novak, S.K. Leslie, K. Tisanić, V. Smolčić, E. Schinnerer, M.T. Sargent, M. Bondi, G. Zamorani, B. Magnelli, F. Bertoldi, N. Herrera Ruiz, K.P. Mooley, J. Delhaize, S.T. Myers, S. Marchesi, A.M. Koekemoer, G. Gozaliasl, A. Finoguenov, E. Middleberg and P. Ciliegi: A closer look at the deep radio sky: Multi-component radio sources at 3 GHz VLA-COSMOS. *Astron. Astrophys.* 627, A142 (2019).
- Varga, T.N., J. De Rose, D. Gruen, T. McClintock, S. Seitz, ..., and DES Collaboration: Dark Energy Survey Year 1 results: validation of weak lensing cluster member contamination estimates from $P(z)$ decomposition. *Mon. Not. R. Astron. Soc.* 489, 2511-2524 (2019).
- Varun, N.N., C. Maitra, P. Pragati, R. Harsha and P. Biswajit: Probing the Cyclotron line characteristics of 4U 1538-522 using AstroSat-LAXPC. *Mon. Not. R. Astron. Soc.* 484, L1-L6 (2019).
- Varun, N.N., P. Pradhan, C. Maitra, H. Raichur and B. Paul: Pulse Phase Variation of the Cyclotron Line in HMXB 4U 1907+09 with AstroSat LAXPC. *Ap. J.* 880, 61 (2019).
- Vasilopoulos, G., M. Petropoulou, F. Koliopoulos, P.S. Ray, C.B. Bailyn, F. Haberl and K. Gendreau: NGC 300 ULX1: spin evolution, super-Eddington accretion, and outflows. *Mon. Not. R. Astron. Soc.* 488, 5225-5231 (2019).
- Viaene S., M. Sarzi, N. Zabel, L. Coccato, E.M. Corsini, T. Davis, P. De Vis, P.T. de Zeeuw, J. Falcón-Barroso, D.A. Gadotti, E. Iodice, M. Lyubenova, R.M. McDermid, L. Morrelli, B. Nedelchev, F. Pinna, T. Spriggs and G. van de Ven: The Fornax3D project. ISM structure and attenuation levels in the centre of FCC 167, *Astron. Astrophys.* 622, A89 (2019).
- Viero, M.P., C.L. Reichardt, B.A. Benson, ..., J.J. Mohr, et al.: Measurements of the Cross-spectra of the Cosmic Infrared and Microwave Backgrounds from 95 to 1200 GHz. *Ap. J.* 881, 96 (2019).
- Viitanen, A., V. Allevato, A. Finoguenov, A. Bongiorno, N. Cappelluti, R. Gilli, T. Miyaji and M. Salvato: The XMM-Newton wide field survey in the COSMOS field: Clustering dependence of X-ray selected AGN on host galaxy properties. *Astron. Astrophys.* 629, A14 (2019).
- Vincent, F.H., M.A. Abramowicz, A.A. Zdziarski, M. Wielgus, T. Paumard, G. Perrin and O. Straub: Multi-wavelength torus-jet model for Sagittarius A*. *Astron. Astrophys.* 624, A52 (2019).
- Vlemmings, W.H.T., B. Lankhaar, P. Cazzoletti, C. Ceccobello, D. Dall'Olio, E.F. van Dishoeck, S. Facchini, E.M.L. Humphreys, M.V. Persson, L. Testi and J.P. Williams: Stringent limits on the magnetic field strength in the disc of TW Hya. ALMA observations of CN polarisation. *Astron. Astrophys.* 624, L7 (2019).
- von Kienlin, A., P. Veres, O.J. Roberts, R. Hamburg, E. Bissaldi, M.S. Briggs, E. Burns, A. Goldstein, D. Kocevski, R.D. Preece, C.A. Wilson-Hodge, C.M. Hui, B. Mailyan and C. Malacaria: Fermi-GBM GRBs with Characteristics Similar to GRB 170817A. *Ap. J.* 876, 89 (2019).
- Waisberg, I., J. Dexter, P. Olivier-Petrucci, G. Dubus and K. Perraut: Collimated radiation in SS 433. Constraints from spatially resolved optical jets and Cloudy modeling of the optical bullets. *Astron. Astrophys.* 624, A127 (2019).
- Waisberg, I., J. Dexter, P.-O. Petrucci, G. Dubus and K. Perraut: Super-Keplerian equatorial outflows in SS 433. Centrifugal ejection of the circumbinary disk. *Astron. Astrophys.* 623, A47 (2019).
- Wang, M.Y., S. Kuposov, A. Drlica-Wagner, ..., B. Hoyle, ..., and DES Collaboration: Rediscovery of the Sixth Star Cluster in the Fornax Dwarf Spheroidal Galaxy. *Ap. J. Lett.* 875, L13 (2019).
- Wegg, C., A. Rojas-Arriagada, M. Schultheis and O. Gerhard: The chemistry of stars in the bar of the Milky Way. *Astron. Astrophys.* 632, A121 (2019).
- Wegg, C., O. Gerhard and M. Bieth: The gravitational force field of the Galaxy measured from the kinematics of RR Lyrae in Gaia. *Mon. Not. R. Astron. Soc.* 485, 3296-3316 (2019).
- Wiersema, K., A.B. Higgins, Levan, A.J., Eyles, R.A. J., Starling, R.L. C., N.R. Tanvir, Cenko, S.B., van der Horst, A.J., B.P. Gompertz, J. Greiner and Pasham, D.R.: Polarimetry of relativistic tidal disruption event Swift J2058+0516. *Mon. Not. R. Astron. Soc.* 491(2), 1771-1776 (2019).
- Wilson, T.J., A.E. Shapley, R.L. Sanders, N.A. Reddy, W.R. Freeman, M. Kriek, I. Shivaie, A.L. Coil, B. Siana, B. Mobasher, S.H. Price, M. Azadi, G. Barro, L. de Groot, T. Fetherolf, F.M. Fornasini, G.C.K. Leung and T.O. Zick: The MOSDEF Survey: No Significant Enhancement in Star Formation or Deficit in Metallicity in Merging Galaxy Pairs at $1.5 \leq z \leq 3.5$. *Ap. J.* 874, 18 (2019).

- Wisnioski, E., N.M. Förster Schreiber, M. Fossati, J.T. Mendel, D. Wilman, R. Genzel, R. Bender, S. Wuyts, R.L. Davies, H. Übler, K. Bandara, A. Beifiori, S. Belli, G. Brammer, J. Chan, R.I. Davies, M. Fabricius, A. Galametz, P. Lang, D. Lutz, E.J. Nelson, I. Momcheva, S. Price, D. Rosario, R. Saglia, S. Seitz, T. Shimizu, L.J. Tacconi, K. Tadaki, P.G. van Dokkum and E. Wuyts: The KMOS3D Survey: Data Release and Final Survey Paper. *Ap. J.* 886, 124 (2019).
- Wuillez, J., J.A. Abad, R. Abuter, ..., F. Eisenhauer, ..., O. Pfuhl, et al.: NAOMI: the adaptive optics system of the Auxiliary Telescopes of the VLTI. *Astron. Astrophys.* 629, A41 (2019).
- Woitke, P., I. Kamp, S. Antonellini, F. Anthonioz, C. Baldovin-Saveedra, A. Carmona, O. Dionatos, C. Dominik, J. Greaves, M. Güdel, J.D. Ilee, A. Liebhardt, F. Menard, M. Min, C. Pinte, C. Rab, L. Rigon, W.F. Thi, N. Thureau and L.B.F.M. Waters: Consistent Dust and Gas Models for Protoplanetary Disks. III. Models for Selected Objects from the FP7 DIANA Project. *Publ. Astron. Soc. Pac.* 131, 064301 (2019).
- Wu, J.F., A.J. Baker, T.M. Heckman, E.K.S. Hicks, D. Lutz and L.J. Tacconi: The Star-forming Interstellar Medium of Lyman Break Galaxy Analogs. *Ap. J.* 887, 251 (2019).
- Wu, Y., X. Liu, X. Chen, L. Lin, J. Yuan, C. Zhang, T. Liu, Z. Shen, J. Li, J. Wang, S.-L. Qin, K.-T. Kim, H. Liu, L. Zhu, D. Mardones, N. Inostroza, C. Henkel, T. Zhang, D. Li, J. Esimbek and Q. Liu: Carbon-chain molecules in molecular outflows and Lupus I region – new producing region and new forming mechanism. *Mon. Not. R. Astron. Soc.* 488(1), 495-511 (2019).
- Wölfer, L., G. Picogna, B. Ercolano and E.F. van Dishoeck: Radiation-Hydrodynamical Models of X-ray Photoevaporation in Carbon Depleted Circumstellar Discs. *Mon. Not. R. Astron. Soc.* 490, 5596-5614 (2019).
- Yan, W., R.C. Hickox, K.N. Hainline, D. Stern, G. Lansbury, D.M. Alexander, R.E. Hviding, R.J. Assef, D.R. Ballantyne, M.A. Dipompeo, L. Lanz, C.M. Carroll, M. Koss, I. Lamperti, F. Civano, A. Del Moro, P. Gandhi and A.D. Myers: NuSTAR and Keck Observations of Heavily Obscured Quasars Selected by WISE. *Ap. J.* 870, 33 (2019).
- Yang, Q., Y. Shen, X. Liu, X.-B. Wu, L. Jiang, J. Shanguan, M.J. Graham and S. Yao: An Unusual Mid-infrared Flare in a Type 2 AGN: An Obscured Turning-on AGN or Tidal Disruption Event?. *Ap. J.* 885, 110 (2019).
- Yen, H.-W., B. Zhao, I.-T. Hsieh, P. Koch, R. Krasnopolsky, C.-F. Lee, Z.-Y. Li, S.-Y. Liu, N. Ohashi, S. Takakuwa, Y.-W. Tang: JCMT POL-2 and ALMA Polarimetric Observations of 6000-100 au Scales in the Protostar B335: Linking Magnetic Field and Gas Kinematics in Observations and MHD Simulations. *Ap. J.* 871, 243, (2019).
- Yu, H.-F., H. Dereli-Bégué and F. Ryde: Bayesian Time-resolved Spectroscopy of GRB Pulses. *Ap. J.* 886, 20 (2019).
- Zanella, A., E. Le Floch, C.M. Harrison, E. Daddi, E. Bernhard, R. Gobat, V. Strazzullo, F. Valentino, A. Cibinel, J. Sánchez Almeida, M. Kohandel, J. Fensch, M. Behrendt, A. Burkert, M. Onodera, F. Bournaud and J. Scholtz: A contribution of star-forming clumps and accreting satellites to the mass assembly of $z \sim 2$ galaxies. *Mon. Not. R. Astron. Soc.* 489, 2792-2818 (2019).
- Zhang, K., D.J. Schlegel, B.H. Andrews, J. Comparat, C. Schäfer, J.A. Vazquez Mata, J.-P. Kneib and R. Yan: Machine-learning Classifiers for Intermediate Redshift Emission-line Galaxies. *Ap. J.* 883, 63 (2019).
- Zhang, S.N., A. Santangelo, M. Feroci, ..., N. Meidinger, et al.: The enhanced X-ray Timing and Polarimetry mission - eXTP. *Science China Physics, Mechanics, and Astronomy* 62, 29502 (2019).
- Zhang, Y., B. Yanny, A. Palmese, ..., B. Hoyle, ..., J.J. Mohr, ..., and DES Collaboration: Dark Energy Survey Year 1 Results: Detection of Intracluster Light at Redshift ~ 0.25 . *Ap. J.* 874, 165 (2019).
- Zhang, Y., H.G. Arce, D. Mardones, S. Cabrit, M.M. Dunham, G. Garay, A. Noriega-Crespo, Offner, S.S. R., Raga, A.C. and Corder, S.A.: An episodic wide-angle outflow in HH 46/47. *Ap. J.* 883(1), 1 (2019).
- Zhang, Y., T. Jeltema, D.L. Hollowood, ..., B. Hoyle, ..., and DES Collaboration: Dark Energy Surveyed Year 1 results: calibration of cluster mis-centring in the redMaPPer catalogues. *Mon. Not. R. Astron. Soc.* 487, 2578-2593 (2019).
- Zhao, D., L.C. Ho, Y. Zhao, J. Shanguan and M. Kim: The Role of Major Mergers and Nuclear Star Formation in Nearby Obscured Quasars. *Ap. J.* 877, 52 (2019).
- Zhao, F., G. Zhao, Y. Liu, L. Wang, H. Wang, H. Li, H. Ye, Z. Hao, D. Xiao, J. Zhang, H. Kellermann and F. Grupp: Statistical modelling of an astro-comb for high-precision radial velocity observation. *Mon. Not. R. Astron. Soc.* 482, 1406-1416 (2019).
- Zhao, G.-B., Y. Wang, S. Saito, H. Gil-Marín, W.J. Percival, D. Wang, C.-H. Chuang, R. Ruggeri, E.-M. Mueller, F. Zhu, A.J. Ross, R. Tojeiro, I. Pâris, A.D. Myers, J.L. Tinker, J. Li, E. Burtin, P. Zarrouk, F. Beutler, F. Baumgarten, J.E. Bautista, J.R. Brownstein, K.S. Dawson, J. Hou, A. de la Macorra, G. Rossi, J.A. Peacock, A.G. Sánchez, A. Shafieloo, D.P. Schneider and C. Zhao: The clustering of the SDSS-IV extended Baryon Oscillation Spectroscopic Survey DR14 quasar sample: a tomographic measurement of cosmic structure growth and expansion rate based on optimal redshift weights. *Mon. Not. R. Astron. Soc.* 482, 3497-3513 (2019).
- Zheng, X., D. Quan, H. Zhang, X. Li, Q. Chang and O. Sipilä: A new data structure for accelerating kinetic Monte Carlo method. *Research in Astronomy and Astrophysics* 19, 176, (2019).
- Zhou, R., M.C. Cooper, J.A. Newman, M.L.N. Ashby, J. Aird, C.J. Conselice, M. Davis, A.A. Dutton, S.M. Faber, J.J. Fang, G.G. Fazio, P. Guhathakurta, D. Kocevski, D.C. Koo, K. Nandra, A.C. Phillips, D.J. Rosario, E.F. Schlafly, J.R. Trump, B. Weiner, C.N.A. Willmer and R. Yan: Deep ugrizY imaging and DEEP2/3 spectroscopy: a photometric redshift testbed for LSST and public release of data from the DEEP3 Galaxy Redshift Survey. *Mon. Not. R. Astron. Soc.* 488, 4565-4584 (2019).

Zhuang, M.-Y., L.C. Ho and J. Shangquan: A New Method to Measure Star Formation Rates in Active Galaxies Using Mid-infrared Neon Emission Lines. *Ap. J.* 873, 103 (2019).

Zohren, H., T. Schrabback, R.F.J. van der Burg, M. Arnaud, J.-B. Melin, J.L. van den Busch, H. Hoekstra and M. Klein: Optical follow-up study of 32 high-redshift galaxy cluster candidates from Planck with the William Herschel Telescope. *Mon. Not. R. Astron. Soc.* 488, 2523-2542 (2019).

Refereed Proceedings

Möbius, E., J. Bower, A. Aly, L. Berger, C. Farrugia, A.B. Galvin, D. Keilbach, B. Klecker, M.A. Lee and N.A. Schwadron: Observation of Suprathermal Tails of He⁺ Pickup Ions across Solar Wind Compression Regions with STEREO PLASTIC. In Proc. of "18th Annual International Astrophysics Conference", Pasadena, USA, 2019. Journal of Physics Conference Series 1332, published electronically, 012011 (2019).

Shingledecker, C.N.: Radiation Chemistry in Astrochemical Models: From the Lab to the ISM. In: Proceedings of the IAU Symposium 350: Laboratory Astrophysics, from Observation to Interpretation. (Eds.) H. Linnartz, H. Fraser. IAU Conference Proceedings Vol. 350, Cambridge University Press, Cambridge, UK, (2019).

Strong, A.W. and W. Collmar: COMPTEL Reloaded: a heritage project in MeV astronomy. *Memorie della Societa Astronomica Italiana* 90, 297 (2019).

Waisberg, I., J. Dexter, P.-O. Petrucci, G. Dubus and K. Perraut: Optical interferometry of High-Mass X-ray Binaries: Resolving wind, disk and jet outflows at sub-milliarcsecond scale. In: Proceedings of the International Astronomical Union. (Eds.) et al. Proceedings of the International Astronomical Union Vol. 346, Cambridge University Press, Vienna, Austria, 114-122 (2019).

Wiedenbeck, M.E., G.M. Mason and B. Klecker: Isotopic Fractionation in ³He-rich SEP Events. In Proc. of "18th Annual International Astrophysics Conference", Pasadena, USA, 2019. Journal of Physics Conference Series 1332, published electronically, 012017 (2019).

Instrumental Publications

- Aliane, A., J.-L. Ouvrier-Buffet, L. Dussopt, Goudon, V., W. Rabaud, Kaya, H., R. Torrecillas, Agnès, P., O. Adami, Rodriguez, L., V. Reveret and A. Poglitsch: Mechanical modeling and characterization of suspended cooled silicon bolometers for sub-millimeter and millimeter waves polarization detection. *Sensors and Actuators A-Physical* 296, 254-264 (2019).
- Adami, O.-A., L. Rodriguez, A. Poglitsch, S. Bounissou, V. Reveret, A. Aliane, V. Goudon and L. Dussopt: Highly sensitive polarimetric camera (B-BOP) for the SPICA mission. *Applied Optics*, 58(2), 398-403 (2019).
- André, P., A. Hughes, V. Guillet, ..., A. Poglitsch, et al.: Probing the cold magnetised Universe with SPICA-POL (B-BOP). *Publications of the Astronomical Society of Australia* 36, e029 (2019).
- Bodendorf, C., F. Grupp, A. Bode and J.-M. Asfour: Multizonal computer-generated holograms for high-precision optical adjustment purposes: part I: sensitivity and optical performance. *Optics Express* 27, 13637-13652 (2019).
- Bodendorf, C., N. Geis, F. Grupp, J. Kaminski, R. Katterloher and R. Bender: Testing the near-infrared optical assembly of the space telescope Euclid. In Proc. of "Astronomical Optics: Design, Manufacture, and Test of Space and Ground II", S. Diego, USA, 2019. (Eds.) T.B. Hull, D.W. Kim, and P. Hallibert. *SPIE Conference Proceedings* 11116E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 111160Y (2019).
- Bonholzer, M., R. Andritschke, V. Emberger, N. Meidinger, J. Müller-Seidlitz and W. Treberspurg: Electrical characterization of prototype DEPFET detectors for Athena's Wide Field Imager. In Proc. of "UV, X-Ray, and Gamma-Ray Space Instrumentation for Astronomy XXI", S. Diego, USA, 2019. (Eds.) O.H. Siegmund. *SPIE Conference Proceedings* 11118E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 111180F (2019).
- Bradshaw, M., V. Burwitz, G. Hartner, C. Pellicciari, A. Langmeier, Y. Liao, P. Friedrich, G. Valsecchi, N. Barrière, M.J. Collon, G. Vacanti: Developments in testing x-ray optics at MPE's PANTER facility. In Proc. of "Optics for EUV, X-Ray, and Gamma-Ray Astronomy IX", S. Diego, USA, 2019. (Eds.) S.L. O'Dell, G. Pareschi. *SPIE Conference Proceedings* 11119E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 1111916 (2019).
- Burwitz, V., M. Bavdaz, E. Wille, M. Collon, G. Vacanti, N. Barrière, G. Valsecchi, F. Marioni, D. Vernani, T. Seure, S. Blum, R. Willingale, R. Smith, C. de Roo, E. Hertz, G. Hartner, M.-M. La Caria, C. Pellicciari, A. Langmeier and S.F. Hartl: X-ray testing at PANTER of optics for the ATHENA and Arcus Missions. In Proc. of "International Conference on Space Optics — ICSO 2018", Chania, Greece, 2018. (Eds.) Z. Sodnik, N. Karafolas, B. Cugny. *SPIE Conference Proceedings* 11180E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 1118024 (2019).
- Collon, M.J., G. Vacanti, N.M. Barrière, ..., V. Burwitz, et al.: Silicon pore optics mirror module production and testing. In Proc. of "International Conference on Space Optics — ICSO 2018", Chania, Greece, 2018. (Eds.) Z. Sodnik, N. Karafolas, B. Cugny. *SPIE Conference Proceedings* 11180E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 1118023 (2019).
- Collon, M.J., G. Vacanti, N.M. Barrière, ..., M. Bradshaw, V. Burwitz, et al.: Status of the silicon pore optics technology. In Proc. of "Optics for EUV, X-Ray, and Gamma-Ray Astronomy IX", S. Diego, USA, 2019. (Eds.) S.L. O'Dell, G. Pareschi. *SPIE Conference Proceedings* 11119E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 111190L (2019).
- Finger, G., I. Baker, D. Alvarez, F. Eisenhauer, G. Hechenblaikner, D. Ives, L. Mehrgan, M. Meyer, J. Stegmeier and H.J. Weller: On-sky performance verification of near infrared eAPD technology for wavefront sensing at ground based telescopes, demonstration of e-APD pixel performance to improve the sensitivity of large science focal planes and possibility to use this technology in space. In Proc. of "International Conference on Space Optics — ICSO 2018", Chania, Greece, 2018. (Eds.) Z. Sodnik, N. Karafolas, B. Cugny. *SPIE Conference Proceedings* 11180E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 111806L (2019).
- Grupp, F., J. Kaminski, C. Bodendorf, N. Geis, D. Penka and R. Bender: Euclid warm testing of the near-infrared optical assembly using a unique combination of CGH interferometry and tactile precision measurements. In Proc. of "Astronomical Optics: Design, Manufacture, and Test of Space and Ground II", San Diego, USA, 2019. (Eds.) T.B. Hull, D.W. Kim, and P. Hallibert. *SPIE Conference Proceedings* 11116E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 1111618 (2019).
- Kellermann, H., L. Wang, V. Fahrenschoen, F. Grupp, U. Hopp and R. Bender: First results of the 4-fiber upgrade of the high-resolution comb calibrated spectrograph FOCES. In Proc. of "Techniques and Instrumentation for Detection of Exoplanets IX", San Diego, USA, 2019. (Eds.) S.B. Shaklan. *SPIE Conference Proceedings* 11117E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 1111710 (2019).
- Kroedel, M., V. Stehlíková and S. Menzel: Ceramic mould development for precision bending of thin glass. In Proc. of "Material Technologies and Applications to Optics, Structures, Components, and Sub-Systems IV", S. Diego, USA, 2019. (Eds.) M. Kroedel, B.A. Goodman. *SPIE Conference Proceedings* 11101E, SPIE - The In-

- ternational Society for Optical Engineering, Bellingham, WA USA, 1110105 (2019).
- Meidinger, N., S. Albrecht, M. Bonholzer, J. Müller-Seidlitz, K. Nandra, S. Ott, M. Plattner and W. Treberspurg: Status of the wide field imager instrument for Athena. In Proc. of "UV, X-Ray, and Gamma-Ray Space Instrumentation for Astronomy XXI", S. Diego, USA, 2019. (Eds.) O.H. Siegmund. SPIE Conference Proceedings 11118E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 111180Y (2019).
- Pareschi, G., M. Civitani, G. Sironi, Y. Yang, V. Cotroneo, G. Valsecchi, L. Magagnin, T. Döhring, M. Bradshaw, V. Burwitz, C. Pellicciari: Soft x-ray reflectivity-enhancement in astronomical telescopes via overcoatings: alternative materials and deposition methods. In Proc. of "Optics for EUV, X-Ray, and Gamma-Ray Astronomy IX", S. Diego, USA, 2019. (Eds.) S.L. O'Dell, G. Pareschi. SPIE Conference Proceedings 11119E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 111190S (2019).
- Salmaso, B., S. Basso, M. Ghigo, E. Giro, G. Pareschi, D. Spiga, G. Tagliaferri, G. Vecchi, C. Pellicciari, V. Burwitz, M. Sanchez del Rio, C. Ferrari, A. Zappettini, M. Uslenghi, M. Fiorini, G. Parodi, M. Ayre, M. Bavdaz, I. Ferreira and E. Wille: BEaTriX (Beam Expander Testing X-ray facility) for testing ATHENA's SPO modules: advancement status. In Proc. of "International Conference on Space Optics — ICSO 2018", Chania, Greece, 2018. (Eds.) Z. Sodnik, N. Karafolas, B. Cugny. SPIE Conference Proceedings 11180E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 1118026 (2019).
- Smith, R.K., M. Abraham, Baird, G., ..., V. Burwitz, ..., K. Nandra, ..., J. Sanders, et al.: Arcus: the soft x-ray grating explorer. In Proc. of "UV, X-Ray, and Gamma-Ray Space Instrumentation for Astronomy XXI", S. Diego, USA, 2019. (Eds.) O.H. Siegmund. SPIE Conference Proceedings 11118E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 111180W (2019).
- Spiga, D., B. Salmaso, M. Bavdaz, C. Pellicciari, S. Basso, V. Burwitz, I. Ferreira, M. Ghigo, E. Giro, G. Pareschi, M.S. Rio, G. Tagliaferri, G. Vecchi and E. Wille: Optical simulations for the laboratory-based expanded and collimated x-ray beam facility BEaTriX. (Ed.) A. Murokh. In "Advances in Laboratory-Based X-ray Sources, Optics, and Applications 2019", (2019).
- Stehlíkova, V., T. Döhring, T. Schäfer, M. Stollenwerk, P. Friedrich, V. Burwitz, G. Hartner, M. Bradshaw, Y. Liao, C. Pellicciari: X-ray reflectivity measurements at chromium-iridium tri-layer coatings. In Proc. of "Optics for EUV, X-Ray, and Gamma-Ray Astronomy IX", S. Diego, USA, 2019. (Eds.) S.L. O'Dell, G. Pareschi. SPIE Conference Proceedings 11119E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 111191L (2019).
- Thiele, H., A. Mottaghbonab, M. Dubowy, A. Mecsaci, E. Gubbini, K. Gawlik, F. Grupp, D. Penka and J. Kaminiski: Opto-mechanical alignment results of the Euclid near infrared spectro-photometer optical assembly NI-OA. In Proc. of "International Conference on Space Optics — ICSO 2018", Chania, Greece, 2018. (Eds.) Z. Sodnik, N. Karafolas, B. Cugny. SPIE Conference Proceedings 11180E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 111802V (2019).
- Treberspurg, W., G. Hauser, N. Meidinger, J. Müller-Seidlitz and S. Ott: Achievable time resolution of spectroscopic prototype DEPFET detectors. *Journal of Instrumentation* 14, P03019 (2019).
- Treberspurg, W., R. Andritschke, A. Bähr, A. Behrens, G. Hauser, P. Lechner, N. Meidinger, J. Müller-Seidlitz, R.H. Richter and J. Treis: Layout options of spectroscopic X-ray DEPFETs. *Journal of Instrumentation* 14, P08008 (2019).
- Treberspurg, W., R. Andritschke, Behrens, A., M. Bonholzer, Emberger, V., G. Hauser, Lechner, P., N. Meidinger and J. Müller-Seidlitz: Characterization of a 256 x 256 pixel DEPFET detector for the WFI of Athena. *Nuclear Instruments and Methods in Physics Research Section A* 958, 162555 (2019).
- Valsecchi, G., F. Marioni, G. Bianucci, F.E. Zocchi, D. Gallieni, G. Parodi, M. Ottolini, M. Collon, G. Pareschi, D. Spiga, M. Bavdaz, E. Wille, V. Burwitz, G. Hartner and C. Pellicciari: ATHENA Telescope: alignment and integration of SPO mirror modules. In Proc. of "International Conference on Space Optics — ICSO 2018", Chania, Greece, 2018. (Eds.) Z. Sodnik, N. Karafolas, B. Cugny. SPIE Conference Proceedings 11180E, SPIE - The International Society for Optical Engineering, Bellingham, WA USA, 111801N (2019).
- Wang, Z., Y. Liao, Z. Shen, Q. Huang, B. Ma, Z. Zhang, X. Wang, K. Wang, J. Yu, S. Chen, Z. Wei, S. Ma, Y. Yang, C. Xie and V. Burwitz: Development of imaging x-ray telescopes at Tongji University. *Journal of Astronomical Telescopes Instruments and Systems* 5(4), 044010 (2019).

Non-refereed Publications

- Abuter, R., A. Amorim, N. Anugu, M. Bauböck, M. Benisty, J.P. Berger, N. Blind, H. Bonnet, W. Brandner, A. Buron, C. Collin, F. Chapron, Y. Clénet, V. Coudé du Foresto, P.T. de Zeeuw, C. Deen, F. Delplancke-Ströbele, R. Dembet, J. Dexter, G. Duvert, A. Eckart, F. Eisenhauer, G. Finger, N.M. Förster Schreiber, P. Fédou, P. Garcia, R. Garcia Lopez, F. Gao, E. Gendron, R. Genzel, S. Gillessen, P. Gordo, M. Habibi, X. Haubois, M. Haug, F. Haußmann, T. Henning, S. Hippler, M. Horrobin, Z. Hubert, N. Hubin, A. Jimenez Rosales, L. Jochum, L. Jocou, A. Kaufer, S. Kellner, S. Kendrew, P. Kervella, Y. Kok, M. Kulas, S. Lacour, V. Lapeyrère, V. Lazareff, J.-B. Le Bouquin, P. Léna, M. Lippa, R. Lenzen, A. Mérand, E. Müller, U. Neumann, T. Ott, L. Palanca, T. Paumard, L. Pasquini, K. Perraut, G. Perrin, O. Pfuhl, P.M. Plewa, S. Rabien, A. Ramírez, J. Ramos, C. Rau, G. Rodríguez-Coira, R.R. Rohloff, G. Rousset, J. Sanchez-Bermudez, S. Scheithauer, M. Schöller, N. Schuler, J. Spyromilio, O. Straub, C. Straubmeier, E. Sturm, L.J. Tacconi, K.R.W. Tristram, F. Vincent, S. von Fellenberg, I. Wank, I. Waisberg, F. Widmann, M. Wiegand, F. Wiest, E. Wiezorrek, J. Woillez, S. Yazici, S. Ziegler and G. Zins: GRAVITY - Reaching out to SgrA* with VLTI. In Proc. of "Highlights on Spanish Astrophysics X", Salamanca, Spain, 2018. (Eds.) B. Montesinos, A. Asensio Ramos, F. Buitrago, et al., Highlights on Spanish Astrophysics X, 609-610 (2019).
- Bensby, T., M. Bergemann, J. Rybizki, B. Lemasle, L. Howes, M. Kovalev, O. Agertz, M. Asplund, P. Barklem, C. Battistini, L. Casagrande, C. Chiappini, R. Church, S. Feltzing, D. Ford, O. Gerhard, I. Kushniruk, G. Kordopatis, K. Lind, I. Minchev, P. McMillan, H.-W. Rix, N. Ryde and G. Traven: 4MOST Consortium Survey 4: Milky Way Disc and Bulge High-Resolution Survey (4MIDABLE-HR). *The Messenger* 175, 35-38 (2019).
- Bhattacharya, S., M. Arnaboldi, J. Hartke, O. Gerhard, V. Comte, A. MacConnachie and W.E. Harris: Newly discovered Planetary Nebulae population in Andromeda (M31): PN Luminosity function and implications for the late stages of stellar evolution. In: Proceedings of Why Galaxies Care About AGB Stars: A Continuing Challenge through Cosmic Time. (Eds.) F. Kerschbaum, M. Groenewegen, H. Olofsson. International Astronomical Union Vol. 343, Cambridge University Press, Cambridge, 201-205 (2019).
- Buscher, D., N. Chowdhury, R. Davies, S. Hinkley, N. Hubin, P. Jorden, C. Mackay, R. Massey, K. O'Brien, I. Parry and J. Skottfelt: Towards high-resolution astronomical imaging. *Astronomy and Geophysics* 60, 3.22-3.27 (2019).
- Carpano, S., F. Haberl, P. Crowther and A. Pollock: Phase connected X-ray light curve and He II radial velocity measurements of NGC 300 X-1. In: Proceedings of the International Astronomical Union, Volume 14, Symposium S346 (High-mass X-ray Binaries: Illuminating the Passage from Massive Binaries to Merging Compact Objects). (Eds.) L.M. Oskinova, E. Bozzo, T. Bulik, D.R. Gies. IAU Symposium Vol. 346, Cambridge University Press, 187-192 (2019).
- Chen, T.-W.: The electromagnetic counterpart of the gravitational wave source GW170817. In: Proceedings of the International Astronomical Union, IAU Symposium, Vol. 339. (Southern Horizons in Time-Domain Astronomy). (Eds.) E.R. Griffin. IAU Symposium Vol. 339, Cambridge University Press, 56-60 (2019).
- Chiappini, C., I. Minchev, E. Starck, F. Anders, N.G. Fusillo, O. Gerhard, G. Guiglion, A. Khalatyan, G. Kordopatis, B. Lemasle, G. Matijevic, A.B.D.A. Queiroz, A. Schwoppe, M. Steinmetz, J. Storm, G. Traven, P.-E. Tremblay, M. Valentini, R. Andrae, A. Arentsen, M. Asplund, T. Bensby, M. Bergemann, L. Casagrande, R. Church, G. Cescutti, S. Feltzing, M. Fouesneau, E.K. Grebel, M. Kovalev, P. McMillan, G. Monari, J. Rybizki, N. Ryde, H.-W. Rix, N. Walton, M. Xiang, D. Zucker and the 4MIDABLE-LR Team: 4MOST Consortium Survey 3: Milky Way Disc and Bulge Low-Resolution Survey (4MIDABLE-LR). *The Messenger* 175, 30-34 (2019).
- Cocato, L., W. Freudling, A. Smette, E. Sani, J.A. Escartin, Y. Jung and G. Bazin: On the Telluric Correction of KMOS Spectra. *The Messenger* 177, 14-18 (2019).
- de Jong, R.S., O. Agertz, A. Agudo Berbel, ..., T. Boller, ..., J. Comparat, ..., Eckert, D., ..., G. Erfanianfar, ..., O. Gerhard, ..., A. Merloni, ..., K. Nandra, ..., M. Salvato, et al.: 4MOST: Project overview and information for the first call for proposals. *The Messenger* 175, 3-11 (2019).
- Finoguenov, A., A. Merloni, J. Comparat, K. Nandra, M. Salvato, E. Tempel, A. Raichoor, J. Richard, J.-P. Kneib, A. Pillepich, M. Sahlén, P. Popesso, P. Norberg, R. McMahon and 4MOST Collaboration: 4MOST Consortium Survey 5: eROSITA Galaxy Cluster Redshift Survey. *The Messenger* 175, 39-41 (2019).
- Frailis, M., A. Belikov, K. Benson, A. Bonchi, C. Dabin, A. Ealet, M. Fumana, C. Grenet, M. Holliman, G. Maggio, D. Maino, H.J. McCracken, M. Melchior, A. Piemonte, G. Polenta, M. Poncet, P.L. Scala, S. Serrano and O.R. Williams: The Euclid Science Ground Segment Distributed Infrastructure: System Integration and Challenges. In Proc. of "Astronomical Data Analysis Software and Systems XXVI", Trieste, Italy, 2016. (Eds.) M. Molinaro, K. Shortridge, and F. Pasian. ASP Conf. Ser. 521, Astronomical Society of the Pacific, San Francisco, CA USA, 612 (2019).
- Gillessen, S.: Biografie eines Ausnahme-Physikers. Buchrezension: "Stephen Hawking: Sein Leben - seine Forschung - sein Vermächtnis" von Joel Levy, (2019).
- Gillessen, S.: Rätsel aus der Alltagsphysik. Buchrezension: "100 physikalische Kopfnüsse" von Heinrich Hemme, (2019).
- Gillessen, S.: Kreuz- und Querfahrt durch die Astronomie. Buchrezension: "Eine Geschichte des Universums in 100 Sternen" von Florian Freistetter, (2019).
- GRAVITY Collaboration, R. Abuter, M. Accardo, T. Adler, A.

- Amorim, N. Anugu, G. Ávila, M. Bauböck, M. Benisty, J.-P. Berger, J.M. Bestenlehner, H. Beust, N. Blind, M. Bonnefoy, H. Bonnet, P. Bourget, J. Bouvier, W. Brandner, R. Brast, A. Buron, L. Burtscher, F. Cantalloube, A. Caratti OGaratti, P. Caselli, F. Cassaing, F. Chapron, B. Charnay, É. Choquet, Y. Clénet, C. Collin, V. Coudé Du Foresto, R. Davies, C. Deen, F. Delplancke-Ströbele, R. Dembet, F. Derie, W.-J. de Wit, J. Dexter, T. de Zeeuw, C. Dougados, G. Dubus, G. Duvert, M. Ebert, A. Eckart, F. Eisenhauer, M. Esselborn, F. Eupen, P. Fédou, M.C. Ferreira, G. Finger, N.M. Förster Schreiber, F. Gao, C.E. García Dabó, R. Garcia Lopez, P.J.V. Garcia, É. Gendron, R. Genzel, O. Gerhard, J.P. Gil, S. Gillessen, F. Gonté, P. Gordo, D. Gratadour, A. Greenbaum, R. Grellmann, U. Grözinger, P. Guajardo, S. Guieu, M. Habibi, P. Haguenaer, O. Hans, X. Haubois, M. Haug, F. Haußmann, T. Henning, S. Hippler, S.F. Hönig, M. Horrobin, A. Huber, Z. Hubert, N. Hubin, C.A. Hummel, G. Jakob, A. Janssen, A. Jimenez Rosales, L. Jochum, L. Jocou, J. Kammerer, M. Karl, A. Kaufer, S. Kellner, S. Kendrew, L. Kern, P. Kervella, M. Kiekebusch, M. Kishimoto, L. Klarmann, R. Klein, R. Köhler, Y. Kok, J. Kolb, M. Koutoulaki, M. Kulas, L. Labadie, S. Lacour, A.-M. Lagrange, V. Lapeyrère, W. Laun, B. Lazareff, J.-B. Le Bouquin, P. Léna, R. Lenzen, S. Lévêque, C.-C. Lin, M. Lippa, D. Lutz, Y. Magnard, A.-L. Maire, L. Mehrgan, A. Mérand, F. Millour, P. Mollière, T. Moulin, A. Müller, E. Müller, F. Müller, H. Netzer, U. Neumann, M. Nowak, S. Oberti, T. Ott, L. Pallanca, J. Panduro, L. Pasquini, T. Paumard, I. Percheron, K. Perraut, G. Perrin, B.M. Peterson, P.-O. Petrucci, A. Pflüger, O. Pfuhl, T. Phan Duc, J.E. Pineda, P.M. Plewa, D. Popovic, J.-U. Pott, A. Prieto, L. Pueyo, S. Rabien, A. Ramírez, J.R. Ramos, C. Rau, T. Ray, M. Riquelme, G. Rodríguez-Coira, R.-R. Rohloff, D. Rouan, G. Rousset, J. Sanchez-Bermudez, M. Schartmann, S. Scheithauer, M. Schöller, N. Schuhler, D. Segura-Cox, J. Shangguan, T.T. Shimizu, J. Spyromilio, A. Sternberg, M.R. Stock, O. Straub, C. Straubmeier, E. Sturm, M. Suárez Valles, L.J. Tacconi, W.-F. Thi, K.R.W. Tristram, J.J. Valenzuela, R. van Boekel, E.F. van Dishoeck, P. Vermot, F. Vincent, S. von Fellenberg, I. Waisberg, J.J. Wang, I. Wank, J. Weber, G. Weigelt, F. Widmann, E. Wieprecht, M. Wiest, E. Wiezorrek, M. Wittkowski, J. Woillez, B. Wolff, P. Yang, S. Yazici, D. Ziegler and G. Zins: Spatially Resolving the Quasar Broad Emission Line Region. *The Messenger* 178, 20-24 (2019).
- GRAVITY Collaboration, R. Abuter, M. Accardo, T. Adler, A. Amorim, N. Anugu, G. Ávila, M. Bauböck, M. Benisty, J.-P. Berger, J.M. Bestenlehner, H. Beust, N. Blind, M. Bonnefoy, H. Bonnet, P. Bourget, J. Bouvier, W. Brandner, R. Brast, A. Buron, L. Burtscher, F. Cantalloube, A. Caratti OGaratti, P. Caselli, F. Cassaing, F. Chapron, B. Charnay, É. Choquet, Y. Clénet, C. Collin, V. Coudé Du Foresto, R. Davies, C. Deen, F. Delplancke-Ströbele, R. Dembet, F. Derie, W.-J. de Wit, J. Dexter, T. de Zeeuw, C. Dougados, G. Dubus, G. Duvert, M. Ebert, A. Eckart, F. Eisenhauer, M. Esselborn, F. Eupen, P. Fédou, M.C. Ferreira, G. Finger, N.M. Förster Schreiber, F. Gao, C.E. García Dabó, R. Garcia Lopez, P.J.V. Garcia, É. Gendron, R. Genzel, O. Gerhard, J.P. Gil, S. Gillessen, F. Gonté, P. Gordo, D. Gratadour, A. Greenbaum, R. Grellmann, U. Grözinger, P. Guajardo, S. Guieu, M. Habibi, P. Haguenaer, O. Hans, X. Haubois, M. Haug, F. Haußmann, T. Henning, S. Hippler, S.F. Hönig, M. Horrobin, A. Huber, Z. Hubert, N. Hubin, C.A. Hummel, G. Jakob, A. Janssen, A. Jimenez Rosales, L. Jochum, L. Jocou, J. Kammerer, M. Karl, A. Kaufer, S. Kellner, S. Kendrew, L. Kern, P. Kervella, M. Kiekebusch, M. Kishimoto, L. Klarmann, R. Klein, R. Köhler, Y. Kok, J. Kolb, M. Koutoulaki, M. Kulas, L. Labadie, S. Lacour, A.-M. Lagrange, V. Lapeyrère, W. Laun, B. Lazareff, J.-B. Le Bouquin, P. Léna, R. Lenzen, S. Lévêque, C.-C. Lin, M. Lippa, D. Lutz, Y. Magnard, A.-L. Maire, L. Mehrgan, A. Mérand, F. Millour, P. Mollière, T. Moulin, A. Müller, E. Müller, F. Müller, H. Netzer, U. Neumann, M. Nowak, S. Oberti, T. Ott, L. Pallanca, J. Panduro, L. Pasquini, T. Paumard, I. Percheron, K. Perraut, G. Perrin, B.M. Peterson, P.-O. Petrucci, A. Pflüger, O. Pfuhl, T. Phan Duc, J.E. Pineda, P.M. Plewa, D. Popovic, J.-U. Pott, A. Prieto, L. Pueyo, S. Rabien, A. Ramírez, J.R. Ramos, C. Rau, T. Ray, M. Riquelme, G. Rodríguez-Coira, R.-R. Rohloff, D. Rou-
- Z. Hubert, N. Hubin, C.A. Hummel, G. Jakob, A. Janssen, A. Jimenez Rosales, L. Jochum, L. Jocou, J. Kammerer, M. Karl, A. Kaufer, S. Kellner, S. Kendrew, L. Kern, P. Kervella, M. Kiekebusch, M. Kishimoto, L. Klarmann, R. Klein, R. Köhler, Y. Kok, J. Kolb, M. Koutoulaki, M. Kulas, L. Labadie, S. Lacour, A.-M. Lagrange, V. Lapeyrère, W. Laun, B. Lazareff, J.-B. Le Bouquin, P. Léna, R. Lenzen, S. Lévêque, C.-C. Lin, M. Lippa, D. Lutz, Y. Magnard, A.-L. Maire, L. Mehrgan, A. Mérand, F. Millour, P. Mollière, T. Moulin, A. Müller, E. Müller, F. Müller, H. Netzer, U. Neumann, M. Nowak, S. Oberti, T. Ott, L. Pallanca, J. Panduro, L. Pasquini, T. Paumard, I. Percheron, K. Perraut, G. Perrin, B.M. Peterson, P.-O. Petrucci, A. Pflüger, O. Pfuhl, T. Phan Duc, J.E. Pineda, P.M. Plewa, D. Popovic, J.-U. Pott, A. Prieto, L. Pueyo, S. Rabien, A. Ramírez, J.R. Ramos, C. Rau, T. Ray, M. Riquelme, G. Rodríguez-Coira, R.-R. Rohloff, D. Rou-

an, G. Rousset, J. Sanchez-Bermudez, M. Schartmann, S. Scheithauer, M. Schöller, N. Schuhler, D. Segura-Cox, J. Shangguan, T.T. Shimizu, J. Spyromilio, A. Sternberg, M.R. Stock, O. Straub, C. Straubmeier, E. Sturm, M. Suárez Valles, L.J. Tacconi, W.-F. Thi, K.R.W. Tristram, J.J. Valenzuela, R. van Boekel, E.F. van Dishoeck, P. Verdot, F. Vincent, S. von Fellenberg, I. Waisberg, J.J. Wang, I. Wank, J. Weber, G. Weigelt, F. Widmann, E. Wiegand, M. Wiest, E. Wozorrek, M. Wittkowski, J. Woillez, B. Wolff, P. Yang, S. Yazici, D. Ziegler and G. Zins: GRAVITY and the Galactic Centre. *The Messenger* 178, 26-29 (2019).

GRAVITY Collaboration, R. Abuter, M. Accardo, T. Adler, A. Amorim, N. Anugu, G. Ávila, M. Bauböck, M. Benisty, J.-P. Berger, J.M. Bestenlehner, H. Beust, N. Blind, M. Bonnefoy, H. Bonnet, P. Bourget, J. Bouvier, W. Brandner, R. Brast, A. Buron, L. Burtscher, F. Cantalloube, A. Caratti OGaratti, P. Caselli, F. Cassaing, F. Chapron, B. Charnay, É. Choquet, Y. Clénet, C. Collin, V. Coudé Du Foresto, R. Davies, C. Deen, F. Delplancke-Ströbele, R. Dembet, F. Derie, W.-J. de Wit, J. Dexter, T. de Zeeuw, C. Dougados, G. Dubus, G. Duvert, M. Ebert, A. Eckart, F. Eisenhauer, M. Esselborn, F. Eupen, P. Fédou, M.C. Ferreira, G. Finger, N.M. Förster Schreiber, F. Gao, C.E. García Dabó, R. Garcia Lopez, P.J.V. Garcia, É. Gendron, R. Genzel, O. Gerhard, J.P. Gil, S. Gillessen, F. Gonté, P. Gordo, D. Gratadour, A. Greenbaum, R. Grellmann, U. Grözinger, P. Guajardo, S. Guieu, M. Habibi, P. Haguenaer, O. Hans, X. Haubois, M. Haug, F. Haußmann, T. Henning, S. Hippler, S.F. Hönl, M. Horrobin, A. Huber, Z. Hubert, N. Hubin, C.A. Hummel, G. Jakob, A. Janssen, A. Jimenez Rosales, L. Jochum, L. Jocou, J. Kammerer, M. Karl, A. Kaufer, S. Kellner, S. Kendrew, L. Kern, P. Kervella, M. Kiekebusch, M. Kishimoto, L. Klarmann, R. Klein, R. Köhler, Y. Kok, J. Kolb, M. Koutoulaki, M. Kulas, L. Labadie, S. Lacour, A.-M. Lagrange, V. Lapeyrère, W. Laun, B. Lazareff, J.-B. Le Bouquin, P. Léna, R. Lenzen, S. Lévêque, C.-C. Lin, M. Lippa, D. Lutz, Y. Magnard, A.-L. Maire, L. Mehrgan, A. Mérand, F. Millour, P. Mollière, T. Moulin, A. Müller, E. Müller, F. Müller, H. Netzer, U. Neumann, M. Nowak, S. Oberti, T. Ott, L. Pallanca, J. Panduro, L. Pasquini, T. Paumard, I. Percheron, K. Perraut, G. Perrin, B.M. Peterson, P.-O. Petrucci, A. Pflüger, O. Pfuhl, T. Phan Duc, J.E. Pineda, P.M. Plewa, D. Popovic, J.-U. Pott, A. Prieto, L. Pueyo, S. Rabien, A. Ramírez, J.R. Ramos, C. Rau, T. Ray, M. Riquelme, G. Rodríguez-Coira, R.-R. Rohloff, D. Rouan, G. Rousset, J. Sanchez-Bermudez, M. Schartmann, S. Scheithauer, M. Schöller, N. Schuhler, D. Segura-Cox, J. Shangguan, T.T. Shimizu, J. Spyromilio, A. Sternberg, M.R. Stock, O. Straub, C. Straubmeier, E. Sturm, M. Suárez Valles, L.J. Tacconi, W.-F. Thi, K.R.W. Tristram, J.J. Valenzuela, R. van Boekel, E.F. van Dishoeck, P. Verdot, F. Vincent, S. von Fellenberg, I. Waisberg, J.J. Wang, I. Wank, J. Weber, G. Weigelt, F. Widmann, E. Wiegand, M. Wiest, E. Wozorrek, M. Wittkowski, J. Woillez, B. Wolff, P. Yang, S. Yazici, D. Ziegler and G. Zins: Hunting Exoplanets with Single-Mode Optical Interferometry. *The Messenger* 178, 47-49 (2019).

GRAVITY Collaboration, R. Abuter, M. Accardo, T. Adler, A. Amorim, N. Anugu, G. Ávila, M. Bauböck, M. Benisty, J.-P. Berger, J.M. Bestenlehner, H. Beust, N. Blind, M. Bonnefoy, H. Bonnet, P. Bourget, J. Bouvier, W. Brandner, R. Brast, A. Buron, L. Burtscher, F. Cantalloube, A. Caratti OGaratti, P.

Caselli, F. Cassaing, F. Chapron, B. Charnay, É. Choquet, Y. Clénet, C. Collin, V. Coudé Du Foresto, R. Davies, C. Deen, F. Delplancke-Ströbele, R. Dembet, F. Derie, W.-J. de Wit, J. Dexter, T. de Zeeuw, C. Dougados, G. Dubus, G. Duvert, M. Ebert, A. Eckart, F. Eisenhauer, M. Esselborn, F. Eupen, P. Fédou, M.C. Ferreira, G. Finger, N.M. Förster Schreiber, F. Gao, C.E. García Dabó, R. Garcia Lopez, P.J.V. Garcia, É. Gendron, R. Genzel, O. Gerhard, J.P. Gil, S. Gillessen, F. Gonté, P. Gordo, D. Gratadour, A. Greenbaum, R. Grellmann, U. Grözinger, P. Guajardo, S. Guieu, M. Habibi, P. Haguenaer, O. Hans, X. Haubois, M. Haug, F. Haußmann, T. Henning, S. Hippler, S.F. Hönl, M. Horrobin, A. Huber, Z. Hubert, N. Hubin, C.A. Hummel, G. Jakob, A. Janssen, A. Jimenez Rosales, L. Jochum, L. Jocou, J. Kammerer, M. Karl, A. Kaufer, S. Kellner, S. Kendrew, L. Kern, P. Kervella, M. Kiekebusch, M. Kishimoto, L. Klarmann, R. Klein, R. Köhler, Y. Kok, J. Kolb, M. Koutoulaki, M. Kulas, L. Labadie, S. Lacour, A.-M. Lagrange, V. Lapeyrère, W. Laun, B. Lazareff, J.-B. Le Bouquin, P. Léna, R. Lenzen, S. Lévêque, C.-C. Lin, M. Lippa, D. Lutz, Y. Magnard, A.-L. Maire, L. Mehrgan, A. Mérand, F. Millour, P. Mollière, T. Moulin, A. Müller, E. Müller, F. Müller, H. Netzer, U. Neumann, M. Nowak, S. Oberti, T. Ott, L. Pallanca, J. Panduro, L. Pasquini, T. Paumard, I. Percheron, K. Perraut, G. Perrin, B.M. Peterson, P.-O. Petrucci, A. Pflüger, O. Pfuhl, T. Phan Duc, J.E. Pineda, P.M. Plewa, D. Popovic, J.-U. Pott, A. Prieto, L. Pueyo, S. Rabien, A. Ramírez, J.R. Ramos, C. Rau, T. Ray, M. Riquelme, G. Rodríguez-Coira, R.-R. Rohloff, D. Rouan, G. Rousset, J. Sanchez-Bermudez, M. Schartmann, S. Scheithauer, M. Schöller, N. Schuhler, D. Segura-Cox, J. Shangguan, T.T. Shimizu, J. Spyromilio, A. Sternberg, M.R. Stock, O. Straub, C. Straubmeier, E. Sturm, M. Suárez Valles, L.J. Tacconi, W.-F. Thi, K.R.W. Tristram, J.J. Valenzuela, R. van Boekel, E.F. van Dishoeck, P. Verdot, F. Vincent, S. von Fellenberg, I. Waisberg, J.J. Wang, I. Wank, J. Weber, G. Weigelt, F. Widmann, E. Wiegand, M. Wiest, E. Wozorrek, M. Wittkowski, J. Woillez, B. Wolff, P. Yang, S. Yazici, D. Ziegler and G. Zins: Images at the Highest Angular Resolution with GRAVITY: The Case of Eta Carinae. *The Messenger* 178, 31-33 (2019).

GRAVITY Collaboration, R. Abuter, M. Accardo, T. Adler, A. Amorim, N. Anugu, G. Ávila, M. Bauböck, M. Benisty, J.-P. Berger, J.M. Bestenlehner, H. Beust, N. Blind, M. Bonnefoy, H. Bonnet, P. Bourget, J. Bouvier, W. Brandner, R. Brast, A. Buron, L. Burtscher, F. Cantalloube, A. Caratti OGaratti, P. Caselli, F. Cassaing, F. Chapron, B. Charnay, É. Choquet, Y. Clénet, C. Collin, V. Coudé Du Foresto, R. Davies, C. Deen, F. Delplancke-Ströbele, R. Dembet, F. Derie, W.-J. de Wit, J. Dexter, T. de Zeeuw, C. Dougados, G. Dubus, G. Duvert, M. Ebert, A. Eckart, F. Eisenhauer, M. Esselborn, F. Eupen, P. Fédou, M.C. Ferreira, G. Finger, N.M. Förster Schreiber, F. Gao, C.E. García Dabó, R. Garcia Lopez, P.J.V. Garcia, É. Gendron, R. Genzel, O. Gerhard, J.P. Gil, S. Gillessen, F. Gonté, P. Gordo, D. Gratadour, A. Greenbaum, R. Grellmann, U. Grözinger, P. Guajardo, S. Guieu, M. Habibi, P. Haguenaer, O. Hans, X. Haubois, M. Haug, F. Haußmann, T. Henning, S. Hippler, S.F. Hönl, M. Horrobin, A. Huber, Z. Hubert, N. Hubin, C.A. Hummel, G. Jakob, A. Janssen, A. Jimenez Rosales, L. Jochum, L. Jocou, J. Kammerer, M. Karl, A. Kaufer, S. Kellner, S. Kendrew, L. Kern, P. Kervella, M. Kiekebusch, M. Kishimo-

to, L. Klarmann, R. Klein, R. Köhler, Y. Kok, J. Kolb, M. Koutoulaki, M. Kulas, L. Labadie, S. Lacour, A.-M. Lagrange, V. Lapeyrère, W. Laun, B. Lazareff, J.-B. Le Bouquin, P. Léna, R. Lenzen, S. Lévêque, C.-C. Lin, M. Lippa, D. Lutz, Y. Magnard, A.-L. Maire, L. Mehrgan, A. Mérand, F. Millour, P. Mollière, T. Moulin, A. Müller, E. Müller, F. Müller, H. Netzer, U. Neumann, M. Nowak, S. Oberti, T. Ott, L. Pallanca, J. Panduro, L. Pasquini, T. Paumard, I. Percheron, K. Perraut, G. Perrin, B.M. Peterson, P.-O. Petrucci, A. Pflüger, O. Pfuhl, T. Phan Duc, J.E. Pineda, P.M. Plewa, D. Popovic, J.-U. Pott, A. Prieto, L. Pueyo, S. Rabien, A. Ramírez, J.R. Ramos, C. Rau, T. Ray, M. Riquelme, G. Rodríguez-Coira, R.-R. Rohloff, D. Rouan, G. Rousset, J. Sanchez-Bermudez, M. Schartmann, S. Scheithauer, M. Schöller, N. Schuhler, D. Segura-Cox, J. Shangguan, T.T. Shimizu, J. Spyromilio, A. Sternberg, M.R. Stock, O. Straub, C. Straubmeier, E. Sturm, M. Suárez Valles, L.J. Tacconi, W.-F. Thi, K.R.W. Tristram, J.J. Valenzuela, R. van Boekel, E.F. van Dishoeck, P. Vermot, F. Vincent, S. von Fellenberg, I. Waisberg, J.J. Wang, I. Wank, J. Weber, G. Weigelt, F. Widmann, E. Wieprecht, M. Wiest, E. Wiezorrek, M. Wittkowski, J. Woillez, B. Wolff, P. Yang, S. Yazici, D. Ziegler and G. Zins: Multiple Star Systems in the Orion Nebula. *The Messenger* 178, 36-38 (2019).

GRAVITY Collaboration, R. Abuter, M. Accardo, T. Adler, A. Amorim, N. Anugu, G. Ávila, M. Bauböck, M. Benisty, J.-P. Berger, J.M. Bestenlehner, H. Beust, N. Blind, M. Bonnefoy, H. Bonnet, P. Bourget, J. Bouvier, W. Brandner, R. Brast, A. Buron, L. Burtscher, F. Cantalloube, A. Caratti OGaratti, P. Caselli, F. Cassaing, F. Chapron, B. Charnay, É. Choquet, Y. Clénet, C. Collin, V. Coudé Du Foresto, R. Davies, C. Deen, F. Delplancke-Ströbele, R. Dembet, F. Derie, W.-J. de Wit, J. Dexter, T. de Zeeuw, C. Dougados, G. Dubus, G. Duvert, M. Ebert, A. Eckart, F. Eisenhauer, M. Esselborn, F. Eupen, P. Fédou, M.C. Ferreira, G. Finger, N.M. Förster Schreiber, F. Gao, C.E. García Dabó, R. Garcia Lopez, P.J.V. Garcia, É. Gendron, R. Genzel, O. Gerhard, J.P. Gil, S. Gillessen, F. Gonté, P. Gordo, D. Gratadour, A. Greenbaum, R. Grellmann, U. Grözinger, P. Guajardo, S. Guieu, M. Habibi, P. Hagenauer, O. Hans, X. Haubois, M. Haug, F. Haußmann, T. Henning, S. Hippler, S.F. Hönl, M. Horrobin, A. Huber, Z. Hubert, N. Hubin, C.A. Hummel, G. Jakob, A. Janssen, A. Jimenez Rosales, L. Jochum, L. Jocu, J. Kammerer, M. Karl, A. Kaufer, S. Kellner, S. Kendrew, L. Kern, P. Kervella, M. Kiebusch, M. Kishimoto, L. Klarmann, R. Klein, R. Köhler, Y. Kok, J. Kolb, M. Koutoulaki, M. Kulas, L. Labadie, S. Lacour, A.-M. Lagrange, V. Lapeyrère, W. Laun, B. Lazareff, J.-B. Le Bouquin, P. Léna, R. Lenzen, S. Lévêque, C.-C. Lin, M. Lippa, D. Lutz, Y. Magnard, A.-L. Maire, L. Mehrgan, A. Mérand, F. Millour, P. Mollière, T. Moulin, A. Müller, E. Müller, F. Müller, H. Netzer, U. Neumann, M. Nowak, S. Oberti, T. Ott, L. Pallanca, J. Panduro, L. Pasquini, T. Paumard, I. Percheron, K. Perraut, G. Perrin, B.M. Peterson, P.-O. Petrucci, A. Pflüger, O. Pfuhl, T. Phan Duc, J.E. Pineda, P.M. Plewa, D. Popovic, J.-U. Pott, A. Prieto, L. Pueyo, S. Rabien, A. Ramírez, J.R. Ramos, C. Rau, T. Ray, M. Riquelme, G. Rodríguez-Coira, R.-R. Rohloff, D. Rouan, G. Rousset, J. Sanchez-Bermudez, M. Schartmann, S. Scheithauer, M. Schöller, N. Schuhler, D. Segura-Cox, J. Shangguan, T.T. Shimizu, J. Spyromilio, A. Sternberg, M.R. Stock, O. Straub, C. Straubmeier, E. Sturm, M. Suárez Valles, L.J. Tacconi, W.-F. Thi, K.R.W. Tristram, J.J. Valenzuela, R. van Boekel, E.F. van Dishoeck, P. Ver-

mot, F. Vincent, S. von Fellenberg, I. Waisberg, J.J. Wang, I. Wank, J. Weber, G. Weigelt, F. Widmann, E. Wieprecht, M. Wiest, E. Wiezorrek, M. Wittkowski, J. Woillez, B. Wolff, P. Yang, S. Yazici, D. Ziegler and G. Zins: Probing the Discs of Herbig Ae/Be Stars at Terrestrial Orbits. *The Messenger* 178, 38-40 (2019).

GRAVITY Collaboration, R. Abuter, M. Accardo, T. Adler, A. Amorim, N. Anugu, G. Ávila, M. Bauböck, M. Benisty, J.-P. Berger, J.M. Bestenlehner, H. Beust, N. Blind, M. Bonnefoy, H. Bonnet, P. Bourget, J. Bouvier, W. Brandner, R. Brast, A. Buron, L. Burtscher, F. Cantalloube, A. Caratti OGaratti, P. Caselli, F. Cassaing, F. Chapron, B. Charnay, É. Choquet, Y. Clénet, C. Collin, V. Coudé Du Foresto, R. Davies, C. Deen, F. Delplancke-Ströbele, R. Dembet, F. Derie, W.-J. de Wit, J. Dexter, T. de Zeeuw, C. Dougados, G. Dubus, G. Duvert, M. Ebert, A. Eckart, F. Eisenhauer, M. Esselborn, F. Eupen, P. Fédou, M.C. Ferreira, G. Finger, N.M. Förster Schreiber, F. Gao, C.E. García Dabó, R. Garcia Lopez, P.J.V. Garcia, É. Gendron, R. Genzel, O. Gerhard, J.P. Gil, S. Gillessen, F. Gonté, P. Gordo, D. Gratadour, A. Greenbaum, R. Grellmann, U. Grözinger, P. Guajardo, S. Guieu, M. Habibi, P. Hagenauer, O. Hans, X. Haubois, M. Haug, F. Haußmann, T. Henning, S. Hippler, S.F. Hönl, M. Horrobin, A. Huber, Z. Hubert, N. Hubin, C.A. Hummel, G. Jakob, A. Janssen, A. Jimenez Rosales, L. Jochum, L. Jocu, J. Kammerer, M. Karl, A. Kaufer, S. Kellner, S. Kendrew, L. Kern, P. Kervella, M. Kiebusch, M. Kishimoto, L. Klarmann, R. Klein, R. Köhler, Y. Kok, J. Kolb, M. Koutoulaki, M. Kulas, L. Labadie, S. Lacour, A.-M. Lagrange, V. Lapeyrère, W. Laun, B. Lazareff, J.-B. Le Bouquin, P. Léna, R. Lenzen, S. Lévêque, C.-C. Lin, M. Lippa, D. Lutz, Y. Magnard, A.-L. Maire, L. Mehrgan, A. Mérand, F. Millour, P. Mollière, T. Moulin, A. Müller, E. Müller, F. Müller, H. Netzer, U. Neumann, M. Nowak, S. Oberti, T. Ott, L. Pallanca, J. Panduro, L. Pasquini, T. Paumard, I. Percheron, K. Perraut, G. Perrin, B.M. Peterson, P.-O. Petrucci, A. Pflüger, O. Pfuhl, T. Phan Duc, J.E. Pineda, P.M. Plewa, D. Popovic, J.-U. Pott, A. Prieto, L. Pueyo, S. Rabien, A. Ramírez, J.R. Ramos, C. Rau, T. Ray, M. Riquelme, G. Rodríguez-Coira, R.-R. Rohloff, D. Rouan, G. Rousset, J. Sanchez-Bermudez, M. Schartmann, S. Scheithauer, M. Schöller, N. Schuhler, D. Segura-Cox, J. Shangguan, T.T. Shimizu, J. Spyromilio, A. Sternberg, M.R. Stock, O. Straub, C. Straubmeier, E. Sturm, M. Suárez Valles, L.J. Tacconi, W.-F. Thi, K.R.W. Tristram, J.J. Valenzuela, R. van Boekel, E.F. van Dishoeck, P. Vermot, F. Vincent, S. von Fellenberg, I. Waisberg, J.J. Wang, I. Wank, J. Weber, G. Weigelt, F. Widmann, E. Wieprecht, M. Wiest, E. Wiezorrek, M. Wittkowski, J. Woillez, B. Wolff, P. Yang, S. Yazici, D. Ziegler and G. Zins: Spatially Resolved Accretion-Ejection in Compact Binaries with GRAVITY. *The Messenger* 178, 29-31 (2019).

GRAVITY Collaboration, R. Abuter, M. Accardo, T. Adler, A. Amorim, N. Anugu, G. Ávila, M. Bauböck, M. Benisty, J.-P. Berger, J.M. Bestenlehner, H. Beust, N. Blind, M. Bonnefoy, H. Bonnet, P. Bourget, J. Bouvier, W. Brandner, R. Brast, A. Buron, L. Burtscher, F. Cantalloube, A. Caratti OGaratti, P. Caselli, F. Cassaing, F. Chapron, B. Charnay, É. Choquet, Y. Clénet, C. Collin, V. Coudé Du Foresto, R. Davies, C. Deen, F. Delplancke-Ströbele, R. Dembet, F. Derie, W.-J. de Wit, J. Dexter, T. de Zeeuw, C. Dougados, G. Dubus, G. Duvert, M. Ebert, A. Eckart, F. Eisenhauer, M. Esselborn, F. Eupen, P. Fédou, M.C. Ferreira, G. Finger, N.M. Förster Schreiber,

- F. Gao, C.E. García Dabó, R. Garcia Lopez, P.J.V. Garcia, É. Gendron, R. Genzel, O. Gerhard, J.P. Gil, S. Gillessen, F. Gonté, P. Gordo, D. Gratadour, A. Greenbaum, R. Grellmann, U. Grözinger, P. Guajardo, S. Guieu, M. Habibi, P. Haguenaer, O. Hans, X. Haubois, M. Haug, F. Haußmann, T. Henning, S. Hippler, S.F. Hönl, M. Horrobin, A. Huber, Z. Hubert, N. Hubin, C.A. Hummel, G. Jakob, A. Janssen, A. Jimenez Rosales, L. Jochum, L. Jocou, J. Kammerer, M. Karl, A. Kaufer, S. Kellner, S. Kendrew, L. Kern, P. Kervella, M. Kiebusch, M. Kishimoto, L. Klarmann, R. Klein, R. Köhler, Y. Kok, J. Kolb, M. Koutoulaki, M. Kulas, L. Labadie, S. Lacour, A.-M. Lagrange, V. Lapeyrière, W. Laun, B. Lazareff, J.-B. Le Bouquin, P. Léna, R. Lenzen, S. Lévêque, C.-C. Lin, M. Lippa, D. Lutz, Y. Magnard, A.-L. Maire, L. Mehrgan, A. Mérand, F. Millour, P. Mollière, T. Moulin, A. Müller, E. Müller, F. Müller, H. Netzer, U. Neumann, M. Nowak, S. Oberti, T. Ott, L. Palanca, J. Panduro, L. Pasquini, T. Paumard, I. Percheron, K. Perraut, G. Perrin, B.M. Peterson, P.-O. Petrucci, A. Pflüger, O. Pfuhl, T. Phan Duc, J.E. Pineda, P.M. Plewa, D. Popovic, J.-U. Pott, A. Prieto, L. Pueyo, S. Rabien, A. Ramírez, J.R. Ramos, C. Rau, T. Ray, M. Riquelme, G. Rodríguez-Coira, R.-R. Rohloff, D. Rouan, G. Rousset, J. Sanchez-Bermudez, M. Schartmann, S. Scheithauer, M. Schöller, N. Schuhler, D. Segura-Cox, J. Shangguan, T.T. Shimizu, J. Spyromilio, A. Sternberg, M.R. Stock, O. Straub, C. Straubmeier, E. Sturm, M. Suárez Valles, L.J. Tacconi, W.-F. Thi, K.R.W. Tristram, J.J. Valenzuela, R. van Boekel, E.F. van Dishoeck, P. Verrot, F. Vincent, S. von Fellenberg, I. Waisberg, J.J. Wang, I. Wank, J. Weber, G. Weigelt, F. Widmann, E. Wieprecht, M. Wiest, E. Wiezorrek, M. Wittkowski, J. Woillez, B. Wolff, P. Yang, S. Yazici, D. Ziegler and G. Zins: Spatially Resolving the Inner Gaseous Disc of the Herbig Star 51 Oph through its CO Ro-vibration Emission. *The Messenger* 178, 40-42 (2019).
- Goddi, C., G. Crew, V. Impellizzeri, I. Martí-Vidal, L.D. Matthews, H. Messias, H. Rottmann, W. Alef, L. Blackburn, T. Bronzwaer, C.-K. Chan, J. Davelaar, R. Deane, J. Dexter, S. Doeleman, H. Falcke, V.L. Fish, R. Fraga-Encinas, C.M. Fromm, R. Herrero-Illana, S. Issaoun, D. James, M. Janssen, M. Kramer, T.P. Krichbaum, M. De Laurentis, E. Liuzzo, Y. Mizuno, M. Moscibrodzka, I. Natarajan, O. Porth, L. Rezzolla, K. Rygl, F. Roelofs, E. Ros, A.L. Roy, L. Shao, H.J. van Langevelde, I. van Bemmell, R. Tilanus, P. Torne, M. Wielgus, Z. Younsi, J.A. Zensus and Event Horizon Telescope Collaboration: First M87 Event Horizon Telescope Results and the Role of ALMA. *The Messenger* 177, 25-35 (2019).
- Gonté, F., J.A. Abad, R. Abuter, E. Aller Carpentier, J. Alonso, L. Andofalfo, P. Barriga, J.-P. Berger, J.-L. Beuzit, I. Blanchard, H. Bonnet, G. Bourdarot, P. Bourget, R. Brast, P. Bristow, L. Caniguante, S. Cerda, C. Cid, A. Correa, E. Cottalorda, B. Courtney-Barrer, P. Darré, B. Delabre, A. Delboulbé, R. Dembet, R. Donaldson, R. Dorn, J. Dupeyron, C. Dupuy, S. Egner, F. Eisenhauer, L. Faundez, E. Fedrigo, G. Fischer, C. Frank, E. Fuenteseca, P. Gitton, T. Guerlet, S. Guieu, P. Gutierrez, P. Haguenaer, A. Haimmerl, X. Haubois, C. Heritier, S. Huber, N. Hubin, P. Jolley, L. Jocou, J.-P. Kirchbauer, J. Kolb, J. Kosmalski, P. Krempel, C. La Fuente, J.-B. Le Bouquin, M. Le Louarn, P. Lilley, B. Lopez, M. Lopez, Y. Magnard, E. Marchetti, S. Mclay, A. Meilland, A. Meister, A. Mérand, T. Moulin, L. Pasquini, J. Paufique, I. Percheron, L. Pettazzi, O. Pfuhl, D. Phan, A. Pino, W. Pirani, J. Quentin, A. Rakich, A. Ramirez, R. Ridings, M. Riedel, J. Reyes, S. Rochat, J. Sanchez, G. Santos Tomás, C. Schmid, P. Shcheketurov, N. Schuhler, M. Seidel, C. Soenke, E. Stadler, C. Stephan, M. Suárez, M. Todorović, G. Valdes, C. Verinaud, J. Woillez, G. Zins and S. Zúñiga-Fernández: Bringing the New Adaptive Optics Module for Interferometry (NAOMI) into Operation. *The Messenger* 177, 19-23 (2019).
- Gonté, F., J.A. Abad, R. Abuter, ..., F. Eisenhauer, ..., O. Pfuhl, et al.: Bringing the New Adaptive Optics Module for Interferometry (NAOMI) into Operation. *The Messenger* 177, 19-23 (2019).
- Guiglion, G., C. Battistini, C.P.M. Bell, T. Bensby, T. Boller, C. Chiappini, J. Comparat, N. Christlieb, R. Church, M.-R.L. Cioni, L. Davies, T. Dwelly, R.S. de Jong, S. Feltzing, A. Gueguen, L. Howes, M. Irwin, I. Kushniruk, M.I. Lam, J. Liske, R. McMahon, A. Merloni, P. Norberg, A.S.G. Robotham, O. Schnurr, J.G. Sorce, E. Starkenburg, J. Storm, E.
- Hashimoto, Y., J.P. Henry and H. Boehringer: Dwarf galaxies and cluster environments. In: *Proceedings of the International Astronomical Union, IAU Symposium, Vol. 339. (Southern Horizons in Time-Domain Astronomy)*. (Eds.) E.R. Griffin. IAU Symposium Vol. 339, Cambridge University Press, 373-376 (2019).
- Khoperskov, S., P. Di Matteo, O. Gerhard, D. Katz, M. Haywood, F. Combes, P. Berczik and A. Gomez: Phase-space spirals in Gaia DR 2: the role of the Milky Way bar. In *Proc. of "53rd ESLAB symposium "The Gaia Universe"*, Noordwijk, The Netherlands, 2019. The GAIA Universe, published electronically, 57K (2019).
- Kümmel, M., E. Merlin, A. Fontana, H. Dole, A. Boucaud, R. Cabanac, M. Castellano, J. Gracia, M. Huertas-Company, H. Israel, J. Mohr, D. Paris, S. Pilo and T. Vassallo: Euclid detections and science challenge 3. In *Proc of "Astronomical Data Analysis Software and Systems XXVI"*, Trieste, Italy, 2016. (Eds. M. Molinari, K. Shortridge, F. Pasian). ASP Conference Series Vol. 521, 374-377:
- Leschinski, K., O. Czoske, R. Koehler, M. Mach, W. Zeilinger, G. Verdoes Kleijn, W. Kausch, N. Przybilla, J. Alves and R. Davies: SimCADO - a Python Package for Simulating Detector Output for MICADO at the E-ELT. In: *Astronomical Data Analysis Software and Systems XXVI*. (Eds.) M. Molinaro, K. Shortridge, F. Pasian. ASP Conference Series Vol. 521, Astronomical Society of the Pacific, San Francisco, 527-530 (2019).
- Merloni, A., D.A. Alexander, M. Banerji, T. Boller, J. Comparat, T. Dwelly, S. Fotopoulou, R. McMahon, K. Nandra, M. Salvato, S. Croom, A. Finoguenov, M. Krumpke, G. Lamer, D. Rosario, A. Schwobe, T. Shanks, M. Steinmetz, L. Wisotzki and G. Worseck: 4MOST Consortium Survey 6: Active Galactic Nuclei. *The Messenger* 175, 42-45 (2019).
- Okada, T., T. Fukuhara, S. Tanaka, S., ..., T. Müller, et al.: Thermal Inertia of C-Type Near-Earth Asteroid 162173 Ryugu Determined from the Dawn Side Observations by Thermal Infrared Imager. In *Proc. of "82nd Annual Meeting of "The Meteoritical Society"*, Sapporo, Japan, 2019. LPI Contribution No. 2157, id.6303 (2019).
- Okada, T., T. Fukuhara, S. Tanaka, S., ..., T. Müller, et al.:

- Thermal Imaging of C-Type Near Earth Asteroid 162173 Ryugu by Thermal Infrared Imager TIR on Hayabusa2. In Proc. of "50th Lunar and Planetary Science Conference", The Woodlands, Texas, USA, 2019. (Eds.) LPI editorial Board. Proc. Lunar and Planetary Institute Science Conferences 50, Lunar and Planetary Institute, id. 1325 (2019).
- Prat, V., J. Guilet, M. Viallet and E. Mueller: Vertical shear mixing in stellar radiative zones. In A. Brunand S. Mathis (Eds.), *Astro Fluid 2016: An International Conference in Memory of Professor Jean-Paul Zahn's Great Scientific Achievements* (pp. 163-173) (2019).
- Pratt, G.W., M. Arnaud, A. Biviano, D. Eckert, S. Ettori, D. Nagai, N. Okabe and T.H. Reiprich: The Galaxy Cluster Mass Scale and Its Impact on Cosmological Constraints from the Cluster Population. *Space Sci. Rev.* 215, 25 (2019).
- Raison, F.: Scalability of an MPI4PY implementation of a 2D correlation code versus MPI. In Proc of "Astronomical Data Analysis Software and Systems XXVI", Trieste, Italy, 2016. (Eds. M. Molinari, K. Shorridge, F. Pasian). ASP Conference Series Vol. 521, 549-552 (2019).
- Rau, A.: X-Ray transients in the SRG/eROSITA all-sky survey. In: *Proceedings of the International Astronomical Union, IAU Symposium, Vol. 339. (Southern Horizons in Time-Domain Astronomy)*. (Eds.) E.R. Griffin. IAU Symposium Vol. 339, Cambridge University Press, 145(2019).
- Richard, J., J.-P. Kneib, C. Blake, A. Raichoor, J. Comparat, T. Shanks, J. Sorce, M. Sahlén, C. Howlett, E. Tempel, R. McMahon, M. Bilicki, B. Roukema, J. Loveday, D. Pryer, T. Buchert, C. Zhao and CRS Team: 4MOST Consortium Survey 8: Cosmology Redshift Survey (CRS). *The Messenger* 175, 50-53 (2019).
- Sakatani, M., S. Sugita, R. Honda, ..., T. Müller, et al.: Surface Physical Condition of Asteroid Ryugu Using Close-up Optical and Thermal Images. In Proc. of "50th Lunar and Planetary Science Conference", The Woodlands, Texas, USA, 2019. (Eds.) LPI editorial Board. Proc. Lunar and Planetary Institute Science Conferences 50, Lunar and Planetary Institute, id. 1732 (2019).
- Schinnerer, E., A. Leroy, G. Blanc, E. Emsellem, A. Hughes, E. Rosolowsky, A. Schrubba, F. Bigiel, A. Escala, B. Groves, K. Kreckel, D. Kruijssen, J. Lee, S. Meidt, J. Pety, P. Sanchez-Blazquez, K. Sandstrom, A. Usero, A. Barnes, F. Belfiore, I. Bešlić, R. Chandar, D. Chatzigiannakis, M. Chevance, E. Congiu, D. Dale, C. Faesi, M. Gallagher, A. Garcia-Rodriguez, S. Glover, K. Grasha, J. Henshaw, C. Herrera, I.-T. Ho, A. Hygate, M. Jimenez-Donaire, S. Kessler, J. Kim, R. Klessen, E. Koch, P. Lang, K. Larson, A. Le Reste, D. Liu, R. McElroy, J. Nofech, E. Ostriker, I. Pessa Gutierrez, J. Puschignig, M. Querejeta, A. Razza, T. Saito, F. Santoro, S. Stuber, J. Sun, D. Thilker, J. Turner, L. Ubeda, J. Utreras, D. Utomo, S. van Dyk, J. Ward and B. Whitmore: The Physics at High Angular resolution in Nearby Galaxies (PHANGS) Surveys. *The Messenger* 177, 36-41 (2019).
- Shastri, P., M. Dopita, J. Banfield, A. Thomas, F. Longbottom, M.N. Sundar, C. Duggal, B. Groves, P. Kharb, R. Davies, L. Kewley, L. Sairam, E. Hampton, S. Puthiyaveetil, B. James and S7 collaboration: The environments of accreting supermassive black holes in the nearby Universe: A brief overview of the Southern Seyfert spectroscopic snapshot survey (S7). In Proc. of "WOMEN IN PHYSICS: 6th IUPAP International Conference on Women in Physics", Birmingham, UK, 2017. AIP. Conf. Proc. 2109, American Institute of Physics, Melville, NY USA, 090003 (2019).
- Simionescu, A., J. Zuhone, I. Zhuravleva, E. Churazov, M. Gaspari, D. Nagai, N. Werner, E. Roediger, R. Canning, D. Eckert, L. Gu and F. Paerels: Constraining Gas Motions in the Intra-Cluster Medium. *Space Sci. Rev.* 215, 24 (2019).
- Snigula, J.M., C. Gössl and A. Riffeser: Wendelstein observatory control software. In Proc of "Astronomical Data Analysis Software and Systems XXVI", Trieste, Italy, 2016. (Eds. M. Molinari, K. Shorridge, F. Pasian). ASP Conference Series Vol. 521, 553-556 (2019).
- Snios, B., W.R. Dunn, C.M. Lisse, G. Branduardi-Raymont, K. Dennerl, A. Bhardwaj, G.R. Gladstone, S. Nulsen, D. Bowdewits, C.M. Jackman, J.D. Alvarado-Gómez, E. Bunce, M.R. Combi, T.E. Cravens, R.S. Cumbee, J.J. Drake, R.F. Elsner, D. Grodent, J.S. Hong, V. Kharchenko, R.P. Kraft, J.P. Marler, S.P. Moschou, P.D. Mullen, S.J. Wolk, Z. Yao: X-rays Studies of the Solar System. *Bulletin of the American Astronomical Society* 51, Issue 3, id. 25, (2019).
- Swann, E. Tempel, W.-F. Thi, C.C. Worley, C.J. Walcher and The 4MOST Collaboration: 4MOST Survey Strategy Plan. *The Messenger* 175, 17-21 (2019).
- Stephens, I., Z.-Y. Li, H. Yang, A. Kataoka, L. Looney, C. Hull, M. Fernández-López, S. Sadavoy, W. Kwon, S. Ohashi, R. Tazaki, D. Li, T. Hoang, G.H.-M. Bertrang, C. Carrasco-González, W. Dent, S. Takahashi, F. Bacciotti, F.O. Alves, J.M. Girart, Q. Zhang, R. Rao, A. Pohl, M. Padovani, D. Galli, C.-F. Lee, D. Segura-Cox: Polarization in Disks. *Bulletin of the American Astronomical Society* 51, 246-255 (2019).
- Vidal, F., M. Rozel, V. Deo, F. Ferreira, A. Sevin, E. Gendron, Y. Clenet, D. Gratadour, G. Rousset and R. Davies: Analysis the MICADO-MAORY SCAO performance. Proceedings of "The AO4ELT6 conference", Québec City, Canada, 2019. Proceedings of The AO4ELT6 conference, published electronically, id. 251 (2019).
- Walcher, C.J., M. Banerji, C. Battistini, C.P.M. Bell, O. Beldi-Tirado, T. Bensby, J.M. Bestenlehner, T. Boller, J. Brynneel, A. Casey, C. Chiappini, N. Christlieb, R. Church, M.-R.L. Cioni, S. Croom, J. Comparat, L.J.M. Davies, R.S. de Jong, T. Dwelly, H. Enke, S. Feltzing, D. Feuillet, M. Fouesneau, D. Ford, S. Frey, E. Gonzalez-Solares, A. Gueguen, L. Howes, M. Irwin, J. Klar, G. Kordopatis, A. Korn, M. Krumpel, I. Kushniruk, M.I. Lam, J. Lewis, K. Lind, J. Liske, J. Loveday, V. Mainieri, S. Martell, G. Matijevic, R. McMahon, A. Merloni, D. Murphy, F. Niederhofer, P. Norberg, A. Pramskiy, M. Romaniello, A.S.G. Robotham, F. Rothmaier, G. Ruchti, O. Schnurr, A. Schwobe, S. Smedley, J. Sorce, E. Starkeburg, I. Stiliz, J. Storm, E. Tempel, W.-F. Thi, G. Traven, M. Valentini, M. van den Ancker, N. Walton, R. Winkler and C.C. Worley: 4MOST Scientific Operations. *The Messenger* 175, 12-16 (2019).
- Walker, S., A. Simionescu, D. Nagai, N. Okabe, D. Eckert, T. Mroczkowski, H. Akamatsu, S. Ettori and V. Ghirardini: The Physics of Galaxy Cluster Outskirts. *Space Sci. Rev.* 215, 7 (2019).

Books / Articles in Books

Müller, T., E. Lellouch, S. Fornasier: The Trans-Neptunian Solar System. In Book "Trans-Neptunian objects and Centaurs at thermal wavelengths". (Eds.) D. Pralnik, M.A. Barucci, L. Young. Elsevier, p.153-181 (2019).

Müller, T.: The Franconian Asteroid 7984 Marius. In Book: "Historical & Cultural Astronomy". (Eds.) H. Gaab and P. Leich. Springer, Heidelberg, Chapter 18 (2019).

Popular Scientific Publications

Müller, T.: Die Beute des Wanderfalken. Physik in unserer Zeit 50, 228-231 (2019).

Eisenhauer, F. and R. Genzel: Ganz nah am Punkt ohne Wiederkehr. MPG Jahrbuch 2018. Published online (2019).

Telegrams / Circulars / Data Catalogues

- Ananna, T.T., M. Salvato, S. Lamassa, C.M. Urry, N. Cappelluti, C. Cardamone, F. Civano, D. Farrah, M. Gilfanov, E. Glikman, M. Hamilton, A. Kirkpatrick, G. Lanzuisi, S. Marchesi, A. Merloni, K. Nandra, P. Natarajan, G.T. Richards and J. Timlin: VizieR Online Data Catalog: Stripe 82X survey multiwavelength catalog (Ananna+, 2017). VODC J/ ApJ/850/66 (2019).
- Angus, C., M. Smith, C. Inserra, C.P. Gutierrez, J. Anderson, R. Cartier, T.-W. Chen, T. de Jaeger, C. Frohmaier, L. Galbany, S. Gonzalez-Gaitan, M. Grayling, H. Kuncarayakti, J. Lyman, T. Muller-Bravo, A. Pastorello, M. Pursiainen, R. Roy, T. Schweyer, M. Sullivan and P. Wiseman: FDST spectroscopic classification of SN 2019crb and ZTF19aapaeye. The Astronomer's Telegram 12642, 1 (2019).
- Angus, C., R. Roy, C. Frohmaier, L. Galbany, C.P. Gutierrez, T. Muller-Bravo, C. Inserra, J. Anderson, R. Cartier, T.-W. Chen, T. de Jaeger, S. Gonzalez-Gaitan, M. Grayling, H. Kuncarayakti, J. Lyman, A. Pasterello, M. Pursiainen, T. Schweyer, M. Smith, M. Sullivan and P. Wiseman: FDST spectroscopic classification of SN2019bam. The Astronomer's Telegram 12535, 1 (2019).
- Ansdell, M., J.P. Williams, L. Trapman, S.E. van Terwisga, S. Facchini, C.F. Manara, N. van der Marel, A. Miotello, M. Tazzari, M. Hogerheijde, G. Guidi, L. Testi and E.F. van Dishoeck: VizieR Online Data Catalog: ALMA survey of Lupus protoplanetary disks. II. (Ansdell+, 2018). VODC J/ ApJ/859/21 (2019).
- Biltzinger, B., F. Kunzweiler, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 574850558 / GRB 190321363: BALROG localization. GCN Circ. 23984, 1 (2019).
- Biltzinger, B., F. Kunzweiler, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 575251142 / GRB 190325999 / GRB 190325A: BALROG localization. GCN Circ. 24008, 1 (2019).
- Biltzinger, B., F. Kunzweiler, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 575278303 / GRB 190326314 / GRB190326B: BALROG localization. GCN Circ. 24010, 1 (2019).
- Biltzinger, B., F. Kunzweiler, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 575656777 / GRB 190330694 / GRB 190330A: BALROG localization. GCN Circ. 24026, 1 (2019).
- Biltzinger, B., F. Kunzweiler, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 576356086 / GRB 190407788 / : BALROG localization. GCN Circ. 24059, 1 (2019).
- Biltzinger, B., F. Kunzweiler, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 578170097 / GRB 190428783 / GRB190428A: BALROG localization. GCN Circ. 24332, 1 (2019).
- Biltzinger, B., F. Kunzweiler, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 578903308 / GRB 190507270 / GRB190507A: BALROG localization. GCN Circ. 24414, 1 (2019).
- Biltzinger, B., F. Kunzweiler, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 579814215 / GRB 190517813 / GRB190517A: BALROG localization. GCN Circ. 24586, 1 (2019).
- Biltzinger, B., F. Kunzweiler, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 580904353 / GRB 190530430 / GRB190530A: BALROG localization. GCN Circ. 24677, 1 (2019).
- Biltzinger, B., F. Kunzweiler, F. Berlato, J.M. Burgess and J. Greiner: GRB 190622A: BALROG localization (Fermi Trigger 582886211 / GRB 190622368). GCN Circ. 24873, 1 (2019).
- Biltzinger, B., F. Kunzweiler, F. Berlato, J.M. Burgess and J. Greiner: GRB190604A: BALROG localization (Fermi Trigger 581337762 / GRB 190604446). GCN Circ. 24740, 1 (2019).
- Bolmer, J. and P. Schady: GRB 190114A: GROND detection of the afterglow. GCN Circ. 23682, 1 (2019).
- Bolmer, J. and P. Schady: GRB 190114C: GROND detection of the afterglow. GCN Circ. 23702, 1 (2019).
- Botteon, A., R. Cassano, D. Eckert, G. Brunetti, D. Dallacasa, T.W. Shimwell, R.J. van Weeren, F. Gastaldello, A. Bonafede, M. Brueggen, L. Birzan, S. Clavico, V. Cuciti, F. de Gasperin, S. de Grandi, S. Etori, S. Ghizzardi, M. Rossetti, H.J.A. Roettgering and M. Sereno: VizieR Online Data Catalog: Lyra system LoFAR and XMM images (Botteon+, 2019). VODC J/A+A/630/A77 (2019).
- Brisbin, D., O. Miettinen, M. Aravena, V. Smolcic, I. Delvecchio, C. Jiang, B. Magnelli, M. Albrecht, A.M. Arancibia, H. Aussel, N. Baran, F. Bertoldi, M. Bethermin, P. Capak, C.M. Casey, F. Civano, C.C. Hayward, O. Ilbert, A. Karim, O. Le Fevre, S. Marchesi, H.J. McCracken, F. Navarrete, M. Novak, D. Riechers, N. Padilla, M. Salvato, K. Scott, E. Schinnerer, K. Sheth and L. Tasca: VizieR Online Data Catalog: ALMA survey of submm galaxies in COSMOS field (Brisbin+, 2017). VODC J/A+A/608/A15 (2019).
- Burgess, J.M., B. Biltzinger, F. Kunzweiler, F. Berlato and J. Greiner: GRB 190613A: BALROG localization (Fermi Trigger 582091643 / GRB 190613172). GCN Circ. 24800, 1 (2019).
- Burgess, J.M., B. Biltzinger, F. Kunzweiler, F. Berlato and J. Greiner: GRB 190619B: BALROG localization (Fermi Trigger 582646590 / GRB 190619595). GCN Circ. 24852, 1 (2019).
- Burgess, J.M., B. Biltzinger, F. Kunzweiler, F. Berlato and J. Greiner: GRB190609A: BALROG localization (Fermi Trigger 581758450 / GRB 190609315). GCN Circ. 24774, 1 (2019).
- Burgess, J.M., B. Biltzinger, F. Kunzweiler, F. Berlato and

- J. Greiner: GRB190610A: BALROG localization (Fermi Trigger 581882394 / GRB 190610750). GCN Circ. 24778, 1 (2019).
- Burgess, J.M., F. Kunzweiler, B. Biltzinger, F. Berlato and J. Greiner: Fermi Trigger 575108474 / GRB 190324348: BALROG localization. GCN Circ. 23992, 1 (2019).
- Burgess, J.M., F. Kunzweiler, B. Biltzinger, F. Berlato and J. Greiner: GRB 190613B: BALROG localization (Fermi Trigger 582115625 / GRB 190613449). GCN Circ. 24808, 1 (2019).
- Burgess, J.M., F. Kunzweiler, B. Biltzinger, F. Berlato and J. Greiner: GRB 190620A: BALROG localization (Fermi Trigger 582725415 / GRB 190620507). GCN Circ. 24861, 1 (2019).
- Cazzoletti, P., C.F. Manara, E.F. van Dishoeck, S. Facchini, J.M. Alcalá, M. Ansdell, L. Testi, J.P. Williams, C. Carrasco-Gonzalez, R. Dong, J. Forbrich, M. Fukagawa, R. Galvan-Madrid, N. Hirano, M. Hogerheijde, Y. Hasegawa, T. Muto, P. Pinilla, M. Takami, M. Tamura, M. Tazzari and J.P. Wisniewski: VizieR Online Data Catalog: Corona Australis ALMA and X-Shooter data (Cazzoletti+, 2019). VODC J/A+A/626/A11 (2019).
- Chacon-Tanarro, A., J.E. Pineda, P. Caselli, L. Bizzocchi, R.A. Gutermuth, B.S. Mason, A.I. Gomez-Ruiz, J. Harju, M. Devlin, S.R. Dicker, T. Mroczkowski, C.E. Romero, J. Sievers, S. Stanchfield, S. Offner and D. Sanchez-Arguelles: VizieR Online Data Catalog: Dust opacity variations in L1544 (Chacon-Tanarro+, 2019). VODC J/A+A/623/A118 (2019).
- Charles, P.A., D.A.H. Buckley, E. Kotze, S.B. Potter, J.K. Thomas, P. Gandhi and J.A. Paice: MAXI J1348-630: SALT optical spectroscopy during outburst. The Astronomer's Telegram 12480, 1 (2019).
- Chen, T.-W., T. Schweyer, A. Rossi, K.E. Heintz, M. Gromadzki, J. Bolmer and P. Schady: LIGO/Virgo S190408an: GROND Observations of MASTER OT J154209.55-431742.2. GCN Circ. 24097, 1 (2019).
- Chen, T.-W., T. Schweyer, C. Inserra, G. Leloudas, M. Nicholl, D. Perley, L. Tartaglia, V. Brinnel, A.S. Carracedo, C. Barbarino, J. Sollerman, R. Cartier, J. Lyman, E. Kanare, K. Maguire, S.J. Smartt, D.R. Young, K.W. Smith, O. McBrien, O. Yaron and I. Manulis: GREAT followup of SN 2019cca/ZTF19aajwogx: a superluminous supernova at redshift 0.42. The Astronomer's Telegram 12604, 1 (2019).
- Chen, T.-W., T. Schweyer, R. Cartier, C. Frohmaier, S. Gonzalez-Gaitan, C.P. Gutierrez, C. Inserra, J. Anderson, C. Angus, T. de Jaeger, L. Galbany, M. Grayling, H. Kuncarayakti, J. Lyman, T. Muller-Bravo, A. Pasterello, M. Pursiainen, R. Roy, T. Schweyer, M. Smith, M. Sullivan and P. Wiseman: FDST spectroscopic classification of SN 2019bie. The Astronomer's Telegram 12599, 1 (2019).
- Coutens, A., H.B. Liu, I. Jimenez-Serra, T.L. Bourke, J. Forbrich, M. Hoare, L. Loinard, L. Testi, M. Audard, P. Caselli, A. Chacon-Tanarro, C. Codella, J. di Francesco, F. Fontani, M. Hogerheijde, A. Johansen, D. Johnstone, S. Maddison, O. Panic, L.M. Perez, L. Podio, A. Punanova, J.M.C. Rawlings, D. Semenov, M. Tazzari, J.J. Tobin, M.H.D. van der Wiel, H.J. van Langevelde, W. Vlemmings, C. Walsh and D. Wilner: VizieR Online Data Catalog: Oph A mosaic image (Coutens+, 2019). VODC J/A+A/631/A58 (2019).
- Dall'Olio, D., W.H.T. Vlemmings, M.V. Persson, F.O. Alves, H. Beuther, J.M. Girart, G. Surcis, J.M. Torrelles and H.J. van Langevelde: VizieR Online Data Catalog: ALMA continuum fits files of G9.62+0.19 (Dall'Olio+, 2019). VODC J/A+A/626/A36 (2019).
- de Cicco, D., M. Paolillo, S. Falocco, M. Poulain, W.N. Brandt, F.E. Bauer, F. Vagnetti, G. Longo, A. Grado, F. Rago, M.T. Botticella, G. Pignata, M. Vaccari, M. Rado- vich, M. Salvato, G. Covone, N.R. Napolitano, L. Marchetti and P. Schipani: VizieR Online Data Catalog: Optically variable AGN in COSMOS field (De Cicco+, 2019). VODC J/A+A/627/A33 (2019).
- Frohmaier, C., C. Inserra, C.P. Gutierrez, J. Anderson, C. Angus, R. Cartier, T.-W. Chen, T. de Jaeger, L. Galbany, S. Gonzalez-Gaitan, M. Grayling, H. Kuncarayakti, J. Lyman, T. Muller-Bravo, A. Pasterello, M. Pursiainen, R. Roy, T. Schweyer, M. Smith, M. Sullivan and P. Wiseman: FDST spectroscopic classification of SN 2019ye. The Astronomer's Telegram 12426, 1 (2019).
- Frohmaier, C., H. Kuncarayakti, M. Pursiainen, P. Wiseman, C. Inserra, C.P. Gutierrez, J. Anderson, C. Angus, R. Cartier, T.-W. Chen, T. de Jaeger, L. Galbany, S. Gonzalez-Gaitan, M. Grayling, J. Lyman, T. Muller-Bravo, A. Pastorello, R. Roy, T. Schweyer, M. Smith and M. Sullivan: FDST spectroscopic classification of SN 2019dwp. The Astronomer's Telegram 12740, 1 (2019).
- Frohmaier, C., L. Galbany, C.P. Gutierrez, J. Anderson, C. Angus, R. Cartier, T.-W. Chen, T. de Jaeger, S. Gonzalez-Gaitan, M. Grayling, H. Kuncarayakti, C. Inserra, J. Lyman, T. Muller-Bravo, A. Pastorello, M. Pursiainen, R. Roy, T. Schweyer, M. Smith, M. Sullivan and P. Wiseman: FDST spectroscopic classification of SN 2019gaj. The Astronomer's Telegram 12827, 1 (2019).
- Frohmaier, C., M. Pursiainen, C.P. Gutierrez, C. Angus, T.-W. Chen, A. Pastorello, C. Inserra, J. Anderson, R. Cartier, T. de Jaeger, L. Galbany, M. Grayling, S. Gonzalez-Gaitan, H. Kuncarayakti, J. Lyman, T. Muller-Bravo, M. Pursiainen, R. Roy, T. Schweyer, M. Smith, M. Sullivan and P. Wiseman: FDST spectroscopic classification of SN 2019gfm. The Astronomer's Telegram 12844, 1 (2019).
- Gaia Collaboration, L. Eyer, L. Rimoldini, M. Audard, ..., A. Gueguen, et al.: VizieR Online Data Catalog: Gaia DR2. Variable stars in CMD (Gaia Collaboration+, 2019). VODC J/A+A/623/A110 (2019).
- Gallagher, M.J., A.K. Leroy, F. Bigiel, D. Cormier, M.J. Jimenez-Donaire, E. Ostriker, A. Usero, A.D. Bolatto, S. Garcia-Burillo, A. Hughes, A.A. Kepley, M. Krumholz, S.E. Meidt, D.S. Meier, E.J. Murphy, J. Pety, E. Rosolowsky, E. Schinnerer, A. Schrubba and F. Walter: VizieR Online Data Catalog: Radial profiles of 5 nearby galaxies (Gallagher+, 2018). VODC J/ApJ/858/90 (2019).
- Garcia-Burillo, S., F. Combes, C. Ramos Almeida, A. Usero, A. Alonso-Herrero, L.K. Hunt, D. Rouan, S. Aalto, M. Quere-

- jeta, S. Viti, P.P. van der Werf, H. Vives-Arias, A. Fuente, L. Colina, J. Martin-Pintado, C. Henkel, S. Martin, M. Krips, D. Gratadour, R. Neri and L.J. Tacconi: VizieR Online Data Catalog: NGC1068 CO and HCO images (Garcia-Burillo+, 2019). VODC J/A+A/632/A61 (2019).
- Garofali, K., B.F. Williams, P.P. Plucinsky, T.J. Gaetz, B. Wold, F. Haberl, K.S. Long, W.P. Blair, T.G. Pannuti, P.F. Winkler and J. Gross: VizieR Online Data Catalog: Supernova remnants in M33: X-ray properties (Garofali+, 2017). VODC J/MNRAS/472/308 (2019).
- Giuliano, B.M., A.A. Gavdush, B. Mueller, K.I. Zaytsev, T. Grassi, A.V. Ivlev, M.E. Palumbo, G.A. Baratta, C. Scire, G.A. Komandin, S.O. Yurchenko and P. Caselli: VizieR Online Data Catalog: Complex refractive index of CO ice (Giuliano+, 2019). VODC J/A+A/629/A112 (2019).
- Giuliano, B.M., L. Bizzocchi, A. Pietropolli Charmet, B.E. Arenas, A.L. Steber, M. Schnell, P. Caselli, B.J. Harris, B.H. Pate, J.-C. Guillemin and A. Belloche: VizieR Online Data Catalog: Rotational spectroscopy of imidazole (Giuliano+, 2019). VODC J/A+A/628/A53 (2019).
- Greiner, J., B. Biltzinger, F. Kunzweiler, F. Berlato and J.M. Burgess: Improved Fermi/GBM GRB localizations. GCN Circ. 23956, 1 (2019).
- Gutierrez, C.P., C. Frohmaier, T. Muller-Bravo, C. Inserra, J. Anderson, C. Angus, R. Cartier, T.-W. Chen, T. de Jaeger, L. Galbany, S. Gonzalez-Gaitan, M. Grayling, H. Kuncarayakti, J. Lyman, A. Pasterello, M. Pursiainen, R. Roy, T. Schweyer, M. Smith, M. Sullivan and P. Wiseman: FDST spectroscopic classification of SN 2019awc. The Astronomer's Telegram 12503, 1 (2019).
- Haberl, F., S. Carpano, C. Maitra, M. Freyberg, K. Dennerl, A. Schwobe, A. Merloni, P. Predehl, H. Brunner, D.A.H. Buckley and I.M. Monageng: Discovery of X-ray pulsations from the Be/X-ray binary XMMU J010429.4-723136 in the SMC with SRG/eROSITA. The Astronomer's Telegram 13312, 1 (2019).
- Hasinger, G., P. Capak, M. Salvato, A.J. Barger, L.L. Cowie, A. Faisst, S. Hemmati, Y. Kakazu, J. Kartaltepe, D. Masters, B. Mobasher, H. Nayyeri, D. Sanders, N.Z. Scoville, H. Suh, C. Steinhardt and F. Yang: VizieR Online Data Catalog: DEIMOS 10K spectroscopic survey in COSMOS field (Hasinger+, 2018). VODC J/ApJ/858/77 (2019).
- Heintz, K.E., J. Bolmer, C. Ledoux, P. Noterdaeme, J.-K. Krogager, J.P.U. Fynbo, P. Jakobsson, S. Covino, V. D'Elia, M. de Pasquale, D.H. Hartmann, L. Izzo, J. Japelj, D.A. Kann, L. Kaper, P. Petitjean, A. Rossi, R. Salvaterra, P. Schady, J. Selsing, R. Starling, N.R. Tanvir, C.C. Thone, A. de Ugarte Postigo, S.D. Vergani, D. Watson, K. Wiersema and T. Zafar: VizieR Online Data Catalog: Reduced X-shooter spectra of GRB 190114A (Heintz+, 2019). VODC J/A+A/629/A131 (2019).
- Herrera-Camus, R., E. Sturm, J. Gracia-Carpio, D. Lutz, A. Contursi, S. Veilleux, J. Fischer, E. Gonzalez-Alfonso, A. Poglitsch, L. Tacconi, R. Genzel, R. Maiolino, A. Sternberg, R. Davies and A. Verma: VizieR Online Data Catalog: SHINING I. Survey observational trends (Herrera-Camus+, 2018). VODC J/ApJ/861/94 (2019).
- Hurley, K., I.G. Mitrofanov, D. Golovin, M.L. Litvak, A.B. Sanin, A. Kozlova, S. Golenetskii, R. Aptekar, D. Frederiks, D. Svinkin, T. Cline, A. von Kienlin, X. Zhang, A. Rau, V. Savchenko, E. Bozzo, C. Ferrigno, S. Barthelmy, J. Cummings, H. Krimm, D. Palmer, W. Boynton, C. Fellows, K. Harshman, H. Enos and R. Starr: IPN triangulation of GRB 190103A (long). GCN Circ. 23646, 1 (2019).
- Hurley, K., I.G. Mitrofanov, D. Golovin, M.L. Litvak, A.B. Sanin, D. Svinkin, S. Golenetskii, R. Aptekar, D. Frederiks, A. Kozlova, T. Cline, A. von Kienlin, X. Zhang, A. Rau, V. Savchenko, E. Bozzo, C. Ferrigno, A. Goldstein, M.S. Briggs, C. Wilson-Hodge, S. Barthelmy, J. Cummings, H. Krimm, D. Palmer, W. Boynton, C. Fellows, K. Harshman, H. Enos and R. Starr: IPN Triangulation of GRB 190611B. GCN Circ. 24811, 1 (2019).
- Hurley, K., I.G. Mitrofanov, D. Golovin, M.L. Litvak, A.B. Sanin, D. Svinkin, S. Golenetskii, R. Aptekar, D. Frederiks, A. Kozlova, T. Cline, A. von Kienlin, X. Zhang, A. Rau, V. Savchenko, E. Bozzo, C. Ferrigno, A. Ursi, N. Parmiggiani, F. Verrecchia, A. Bulgarelli, A. Trois, M. Marisaldi, C. Pittori, M. Tavani, Y. Evangelista, I. Donnarumma, M. Cardillo, G. Piano, G. Minervini, A. Argan, F. Lucarelli, A. Zoli, V. Fioretti, F. Fuschino, M. Pilia, F. Longo, A. Giuliani, W. Boynton, C. Fellows, K. Harshman, H. Enos and R. Starr: IPN Triangulation of GRB 190329A (long/bright). GCN Circ. 24029, 1 (2019).
- Hurley, K., I.G. Mitrofanov, D. Golovin, M.L. Litvak, A.B. Sanin, D. Svinkin, S. Golenetskii, R. Aptekar, D. Frederiks, A. Kozlova, T. Cline, A. von Kienlin, X. Zhang, A. Rau, V. Savchenko, E. Bozzo, C. Ferrigno, A. Ursi, N. Parmiggiani, F. Verrecchia, A. Bulgarelli, A. Trois, M. Marisaldi, C. Pittori, M. Tavani, Y. Evangelista, I. Donnarumma, M. Cardillo, G. Piano, G. Minervini, A. Argan, F. Lucarelli, A. Zoli, V. Fioretti, F. Fuschino, M. Pilia, F. Longo, A. Giuliani, W. Boynton, C. Fellows, K. Harshman, H. Enos and R. Starr: IPN Triangulation of GRB 190501A (long/bright). GCN Circ. 24372, 1 (2019).
- Hurley, K., I.G. Mitrofanov, D. Golovin, M.L. Litvak, A.B. Sanin, D. Svinkin, S. Golenetskii, R. Aptekar, D. Frederiks, A. Kozlova, T. Cline, A. von Kienlin, X. Zhang, A. Rau, V. Savchenko, E. Bozzo, C. Ferrigno, S. Barthelmy, J. Cummings, H. Krimm, D. Palmer, S. Xiao, C.K. Li, X.B. Li, Y. Huang, S.L. Xiong, W. Boynton, C. Fellows, K. Harshman, H. Enos and R. Starr: IPN Triangulation of GRB 190117A (long). GCN Circ. 23764, 1 (2019).
- Hurley, K., I.G. Mitrofanov, D. Golovin, M.L. Litvak, A.B. Sanin, D. Svinkin, S. Golenetskii, R. Aptekar, D. Frederiks, A. Kozlova, T. Cline, A. von Kienlin, X. Zhang, A. Rau, V. Savchenko, E. Bozzo, C. Ferrigno, W. Boynton, C. Fellows, K. Harshman, H. Enos and R. Starr: IPN Triangulation of GRB 190129B (long/extremely bright). GCN Circ. 23808, 1 (2019).
- Hurley, K., I.G. Mitrofanov, D. Golovin, M.L. Litvak, A.B. Sanin, D. Svinkin, S. Golenetskii, R. Aptekar, D. Frederiks, A. Kozlova, T. Cline, A. von Kienlin, X. Zhang, A. Rau, V. Savchenko, E. Bozzo, C. Ferrigno, W. Boynton, C. Fellows, K. Harshman, H. Enos and R. Starr: Improved IPN error box for GRB 190129B. GCN Circ. 23822, 1 (2019).

- Insera, C., C.P. Gutierrez, J. Anderson, C. Angus, R. Cartier, T.-W. Chen, T. de Jaeger, C. Frohmaier, L. Galbany, S. Gonzalez-Gaitan, M. Grayling, H. Kuncarayakti, J. Lyman, T. Muller-Bravo, A. Pasterello, M. Pursiainen, R. Roy, T. Schweyer, M. Smith, M. Sullivan and P. Wiseman: FDST spectroscopic classification of SN 2019be. *The Astronomer's Telegram* 12362, 1 (2019).
- Izzo, L., A. de Ugarte Postigo, P. Schady, D.B. Malesani, D.A. Kann, C. Kouveliotou, V. D'Elia and N.R. Tanvir: GRB 180703A: VLT/MUSE host galaxy redshift measurement. *GCN Circ.* 23889, 1 (2019).
- Jones, G.C., R. Maiolino, P. Caselli and S. Carniani: VizieR Online Data Catalog: High-redshift molecular outflow (Jones+, 2019). *VODC J/A+A/632/L7* (2019).
- Klein, M., S. Grandis, J.J. Mohr, M. Paulus, ..., B. Hoyle, ..., and DES Collaboration: VizieR Online Data Catalog: MARD-Y3 catalog (Klein+, 2019). *VODC J/MNRAS/488/739* (2019).
- Kong, S., J.C. Tan, P. Caselli, F. Fontani, K. Wang and M.J. Butler: VizieR Online Data Catalog: ALMA 1.3mm continuum flux measurement of C1-S core (Kong+, 2018). *VODC J/ApJ/867/94* (2019).
- Koutoulaki, M., S. Facchini, C.F. Manara, A. Natta, R. Garcia Lopez, R. Fedriani, A. Carattio Garatti, D. Coffey and T.P. Ray: VizieR Online Data Catalog: Dimming event of RW Aurigae A (Koutoulaki+, 2019). *VODC J/A+A/625/A49* (2019).
- Kozlova, A., S. Golenetskii, R. Aptekar, D. Frederiks, D. Svinkin, T. Cline, K. Hurley, A. Goldstein, M.S. Briggs, C. Wilson-Hodge, A. von Kienlin, X. Zhang, A. Rau, V. Savchenko, E. Bozzo and C. Ferrigno: IPN Triangulation of GRB 190606A (short). *GCN Circ.* 24765, 1 (2019).
- Krolewski, A., K.-G. Lee, M. White, J.F. Hennawi, D.J. Schlegel, P.E. Nugent, Z. Lukic, C.W. Stark, A.M. Koekoer, O. Le Fevre, B.C. Lemaux, C. Maier, R.M. Rich, M. Salvato and L. Tasca: VizieR Online Data Catalog: $z \sim 2.3$ cosmic voids in the COSMOz S field (Krolewski+, 2018). *VODC J/ApJ/861/60* (2019).
- Kuncarayakti, H., R. Roy, C.P. Gutierrez, C. Frohmaier, C. Insera, J. Anderson, C. Angus, R. Cartier, T.-W. Chen, T. de Jaeger, L. Galbany, S. Gonzalez-Gaitan, M. Grayling, J. Lyman, T. Muller-Bravo, A. Pasterello, M. Pursiainen, T. Schweyer, M. Smith, M. Sullivan and P. Wiseman: FDST spectroscopic classification of SN 2019bph and SN 2019bsp. *The Astronomer's Telegram* 12586, 1 (2019).
- Kunzweiler, F., B. Biltzinger, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 574080135 / GRB 190312446: BALROG localization. *GCN Circ.* 23957, 1 (2019).
- Kunzweiler, F., B. Biltzinger, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 574345067 / GRB 190315512: BALROG localization. *GCN Circ.* 23969, 1 (2019).
- Kunzweiler, F., B. Biltzinger, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 574676902 / GRB 190319353: BALROG localization. *GCN Circ.* 23970, 1 (2019).
- Kunzweiler, F., B. Biltzinger, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 574678842 / GRB 190319375: BALROG localization. *GCN Circ.* 23971, 1 (2019).
- Kunzweiler, F., B. Biltzinger, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 575018216 / GRB 190323303: BALROG localization. *GCN Circ.* 23988, 1 (2019).
- Kunzweiler, F., B. Biltzinger, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 575067924 / GRB 190323879: BALROG localization. *GCN Circ.* 23990, 1 (2019).
- Kunzweiler, F., B. Biltzinger, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 575160247 / GRB 190324947: BALROG localization. *GCN Circ.* 23994, 1 (2019).
- Kunzweiler, F., B. Biltzinger, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 576346051 / GRB 190407672 / GRB 190407A: BALROG localization. *GCN Circ.* 24057, 1 (2019).
- Kunzweiler, F., B. Biltzinger, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 576994194 / GRB 190415173 / : BALROG localization. *GCN Circ.* 24123, 1 (2019).
- Kunzweiler, F., B. Biltzinger, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 577360542 / GRB 190419414 / GRB190419A: BALROG localization. *GCN Circ.* 24132, 1 (2019).
- Kunzweiler, F., B. Biltzinger, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 578462495 / GRB 190502168 / GRB190502A: BALROG localization. *GCN Circ.* 24365, 1 (2019).
- Kunzweiler, F., B. Biltzinger, F. Berlato, J.M. Burgess and J. Greiner: Fermi Trigger 581026217 / GRB 190531840 / GRB190531A: BALROG localization. *GCN Circ.* 24696, 1 (2019).
- Kunzweiler, F., B. Biltzinger, F. Berlato, J.M. Burgess and J. Greiner: GRB 190611B: BALROG localization (Fermi Trigger 581986074 / GRB 190611950). *GCN Circ.* 24813, 1 (2019).
- Laas, J.C. and P. Caselli: VizieR Online Data Catalog: Modeling interstellar sulfur depletion (Laas+, 2019). *VODC J/A+A/624/A108* (2019).
- Lacour, S., M. Nowak, J. Wang, O. Pfuhl, F. Eisenhauer, R. Abuter, A. Amorim, N. Anugu, M. Benisty, J.P. Berger, H. Beust, N. Blind, M. Bonnefoy, H. Bonnet, P. Bourget, W. Brandner, A. Buron, C. Collin, B. Charnay, F. Chapron, Y. Clenet, V. Coude Du Foresto, P.T. de Zeeuw, C. Deen, R. Dembet, J. Dexter, G. Duvert, A. Eckart, N.M. Foerster Schreiber, P. Fedou, P. Garcia, R. Garcia Lopez, F. Gao, E. Gendron, R. Genzel, S. Gillessen, P. Gordo, A. Greenbaum, M. Habibi, X. Haubois, F. Haussmann, T. Henning, S. Hippler, M. Horrobin, Z. Hubert, A. Jimenez Rosales, L. Jocou, S. Kendrew, P. Kervella, J. Kolb, A.-M. Lagrange, V. Lapeyrere, J.-B. Le Bouquin, P. Lena, M. Lippa, R. Lenzen, A.-L. Maire, P. Molliere, T. Ott, T. Paumard, K. Perraut, G. Perrin, L. Pueyo, S. Rabien, A. Ramirez, C. Rau, G. Rodriguez-Coira, G. Rousset, J. Sanchez-Bermudez, S. Scheithauer, N. Schuhler, O. Straub, C. Straubmeier, E. Sturm, L.J. Tacconi, F. Vincent, E.F. van Dishoeck, S. von Fellenberg, I. Wank, I. Waisberg, F. Widmann, E. Wieprecht, M. Wiest, E. Wiezorrek, J. Woillez, S. Yazici, D. Ziegler and G. Zins: VizieR Online Data Catalog: HR8799e K-band spec-

trum (Lacour+, 2019). VODC J/A+A/623/L11 (2019).

Laskar, T., K.D. Alexander, E. Berger, W. Fong, R. Margutti, C.G. Mundell and P. Schady: GRB 190114C: ALMA detection of a fading mm counterpart. *GCN Circ.* 23728, 1 (2019).

Lipunov, V., D. Svinkin, J. Greiner, D. Vlasenko, O. Gress, I. Gorbunov, E. Gorbovskoy, A. Kuznetsov, V. Kornilov, V. Vladimirov, P. Balanutsa, D. Zimnukhov, F. Balakin, N. Tiurina, A. Chasovnikov, V. Topolev, V. Senik, D. Kuvshinov, V. Yurkov, A. Gabovich, Y. Sergienko, D. Kobcev, O. Gress, N.M. Budnev, O. Ershova, S. Yazev, A. Tlatov, D. Dormidontov, A.V. Parhomenko, R. Podesta, C. Lopez, C. Francile, F. Podesta, H. Levato, R. Rebolo, M. Serra, N. Lodieu, G. Israellian, L. Suarez-Andres and D. Buckley: GRB 190530A: optical afterglow detection by 5 MASTER telescopes. *GCN Circ.* 24693, 1 (2019).

Lu, R.-S., T.P. Krichbaum, A.L. Roy, V.L. Fish, S.S. Doeleman, M.D. Johnson, K. Akiyama, D. Psaltis, W. Alef, K. Asada, C. Beaudoin, A. Bertarini, L. Blackburn, R. Blundell, G.C. Bower, C. Brinkerink, A.E. Broderick, R. Cappallo, G.B. Crew, J. Dexter, M. Dexter, H. Falcke, R. Freund, P. Friberg, C.H. Greer, M.A. Gurwell, P.T.P. Ho, M. Honma, M. Inoue, J. Kim, J. Lamb, M. Lindqvist, D. MacMahon, D.P. Marrone, I. Marti-Vidal, K.M. Menten, J.M. Moran, N.M. Nagar, R.L. Plambeck, R.A. Primiani, A.E.E. Rogers, E. Ros, H. Rottmann, J. Soohoo, J. Spilker, J. Stone, P. Strittmatter, R.P.J. Tilanus, M. Titus, L. Vertatschitsch, J. Wagner, J. Weintraub, M. Wright, K.H. Young, J.A. Zensus and L.M. Ziurys: VizieR Online Data Catalog: Sgr A* 1.3mm VLBI observations with the EHT in 2013 (Lu+, 2018). VODC J/ApJ/859/60 (2019).

Lutovinov, A., S. Molkov, V. Savchenko, C. Ferrigno, E. Bozzo, T. Courvoisier, E. Kuulkers, C. Sanchez, S. Mereghetti, D. Gotz, P. Laurent, S. Schanne, B. Cordier, S. Antier, A. Coleiro, A. Goldwurm, J. Rodi, A. Bazzano, L. Natalucci, F. Panessa, F. Onori, P. Ubertini, J. Chenevez, S. Brandt, R. Diehl, A. von Kienlin, A. Domingo, J.M. Mas-Hesse, L. Hanlon, A. Martin-Carrillo, M. Doyle, R. Sunyaev, J.-P. Roques, E. Jourdain and P. von Ballmoos: LIGO/Virgo S190408an: INTEGRAL follow-up observations. *GCN Circ.* 24139, 1 (2019).

Maitra, C., F. Haberl, V.D. Ivanov, M.-R.L. Cioni and J.T. van Loon: VizieR Online Data Catalog: SMC AGN in XMM-Newton (Maitra+, 2019). VODC J/A+A/622/A29 (2019).

Malacaria, C., A. von Kienlin and C. Meegan: GRB 190427A: Fermi GBM detection. *GCN Circ.* 24293, 1 (2019).

Marchesi, S., F. Civano, M. Elvis, M. Salvato, M. Brusa, A. Comastri, R. Gilli, G. Hasinger, G. Lanzuisi, T. Miyaji, E. Treister, C.M. Urry, C. Vignali, G. Zamorani, V. Allevato, N. Cappelluti, C. Cardamone, A. Finoguenov, R.E. Griffiths, A. Karim, C. Laigle, S.M. Lamassa, K. Jahnke, P. Ranalli, K. Schawinski, E. Schinnerer, J.D. Silverman, V. Smolcic, H. Suh and B. Trakhtenbrot: VizieR Online Data Catalog: COSMOS Legacy sources multiwavelength catalog (Marchesi+, 2016). VODC J/ApJ/817/34 (2019).

Marciniak, A., V. Ali-Lagoa, T.G. Mueller, et al.: VizieR Online Data Catalog: Thermal properties of slow asteroids (Marciniak+, 2019). VODC J/A+A/625/A139 (2019).

Michalowski, M.J., P. Kamphuis, J. Hjorth, D.A. Kann, A. de Ugarte Postigo, L. Galbany, J.P.U. Fynbo, A. Ghosh, L.K. Hunt, H. Kuncarayakti, E. Le Floch, A. Lesniewska, K. Misra, A. Nicuesa Guelbenzu, E. Palazzi, J. Rasmussen, L. Resmi, A. Rossi, S. Savaglio, P. Schady, S. Schulze, C.C. Thone, D. Watson, G.I.G. Jozsa, P. Serra and O.M. Smirnov: VizieR Online Data Catalog: HI observations of AT 2018cow (Michalowski+, 2019). VODC J/A+A/627/A106 (2019).

Miotello, A., S. Facchini, E.F. van Dishoeck, P. Cazzoletti, L. Testi, J.P. Williams, M. Ansdell, S. van Terwisga and N. van der Marel: VizieR Online Data Catalog: Bright C2H emission in Lupus disks (Miotello+). VODC, J/A+A/631/A69 (2019).

Nagy, Z., S. Spezzano, P. Caselli, A. Vasyunin, M. Tafalla, L. Bizzocchi, D. Prudenzano and E. Redaelli: VizieR Online Data Catalog: Starless core L1521E chemical structure (Nagy+, 2019). VODC J/A+A/630/A136 (2019).

Pastorello, A., T.-W. Chen, Y.-Z. Cai, ..., T. Schweyer, et al.: VizieR Online Data Catalog: SN 2017jfs optical and NIR light curves (Pastorello+, 2019). VODC J/A+A/625/L8 (2019).

Pursiainen, M., C. Frohmaier, P. Wiseman, C. Inserra, C.P. Gutierrez, J. Anderson, C. Angus, R. Cartier, T.-W. Chen, T. de Jaeger, L. Galbany, S. Gonzalez-Gaitan, M. Grayling, H. Kuncarayakti, J. Lyman, T. Muller-Bravo, A. Pastorello, R. Roy, T. Schweyer, M. Smith and M. Sullivan: FDST spectroscopic classification of SN 2019dpu. *The Astronomer's Telegram* 12681, 1 (2019).

Querejeta, M., E. Schinnerer, A. Schrubba, E. Murphy, S. Meidt, A. Usero, A.K. Leroy, J. Pety, F. Bigiel, M. Chevance, C.M. Faesi, M. Gallagher, S. Garcia-Burillo, S.C.O. Glover, A.P.S. Hygate, M.J. Jimenez-Donaire, J.M.D. Kruijssen, E. Momjian, E. Rosolowsky and D. Utomo: VizieR Online Data Catalog: 33 GHz continuum map of M51 (Querejeta+, 2019). VODC J/A+A/625/A19 (2019).

Redaelli, E., F.O. Alves, F.P. Santos and P. Caselli: VizieR Online Data Catalog: IRAS 15398-3359 polarization maps (Redaelli+, 2019). VODC J/A+A/631/A154 (2019).

Rodi, J., A. Bazzano, L. Natalucci, F. Panessa, P. Ubertini, V. Savchenko, C. Ferrigno, E. Bozzo, T. Courvoisier, E. Kuulkers, C. Sanchez, S. Mereghetti, J. Chenevez, S. Brandt, R. Diehl, A. von Kienlin, D. Gotz, P. Laurent, A. Goldwurm, A. Coleiro, L. Hanlon, A. Martin-Carrillo, J.-P. Roques, E. Jourdain, P. von Ballmoos, A. Domingo, J.M. Mas-Hesse, A. Lutovinov and R. Sunyaev: INTEGRAL observation of IceCube-190221A. *GCN Circ.* 23927, 1 (2019).

Rosen, S.R., N.A. Webb, M.G. Watson, J. Ballet, D. Barret, V. Braitto, F.J. Carrera, M.T. Ceballos, M. Coriat, R. Della Ceca, G. Denkinson, P. Esquej, S.A. Farrell, M. Freyberg, F. Grise, P. Guillout, L. Heil, D. Law-Green, G. Lamer, D. Lin, R. Martino, L. Michel, C. Motch, A. Nebot Gomez-Moran, C.G. Page, K. Page, M. Page, M.W. Pakull, J. Pye, A. Read, P. Rodriguez, M. Sakano, R. Saxton, A. Schwoppe, A.E. Scott, R. Sturm, I. Traulsen, V. Yershov and I. Zolotukhin: VizieR Online Data Catalog: XMM-Newton Serendipitous Source Catalogue 3XMM-DR7 (XMM-SSC, 2017). VODC IX/54 (2019).

- Rosen, S.R., N.A. Webb, M.G. Watson, J. Ballet, D. Barret, V. Braitto, F.J. Carrera, M.T. Ceballos, M. Coriat, R. Della Ceca, G. Denkinson, P. Esquej, S.A. Farrell, M. Freyberg, F. Grise, P. Guillout, L. Heil, D. Law-Green, G. Lamer, D. Lin, R. Martino, L. Michel, C. Motch, A. Nebot Gomez-Moran, C.G. Page, K. Page, M. Page, M.W. Pakull, J. Pye, A. Read, P. Rodriguez, M. Sakano, R. Saxton, A. Schwöpe, A.E. Scott, R. Sturm, I. Traulsen, V. Yershov and I. Zolotukhin: VizieR Online Data Catalog: XMM-Newton Serendipitous Source Catalogue 3XMM-DR8 (XMM-SSC, 2018). VODC IX/55 (2019).
- Roy, R., R. Cartier, P. Wiseman, C. Inserra, C.P. Gutierrez, J. Anderson, C. Angus, T.-W. Chen, T. de Jaeger, C. Frohmaier, L. Galbany, S. Gonzalez-Gaitan, M. Grayling, H. Kuncarayakti, J. Lyman, T. Muller-Bravo, A. Pastorello, M. Pursiainen, T. Schweyer, M. Smith and M. Sullivan: FDST spectroscopic classification of SN 2019fju. *The Astronomer's Telegram* 12775, 1 (2019).
- Savchenko, V., C. Ferrigno, E. Bozzo, T. Courvoisier, E. Kuulkers, C. Sanchez, S. Mereghetti, J. Rodi, A. Bazzano, L. Natalucci, F. Panessa, P. Ubertini, J. Chenevez, S. Brandt, R. Diehl, A. von Kienlin, D. Gotz, P. Laurent, A. Goldwurm, A. Coleiro, L. Hanlon, A. Martin-Carrillo, J.-P. Roques, E. Jourdain, P. von Ballmoos, A. Domingo, J.M. Mas-Hesse, A. Lutovinov and R. Sunyaev: INTEGRAL observation of IceCube-190124A. *GCN Circ.* 23807, 1 (2019).
- Savchenko, V., C. Ferrigno, E. Bozzo, T. Courvoisier, E. Kuulkers, C. Sanchez, S. Mereghetti, J. Rodi, A. Bazzano, L. Natalucci, F. Panessa, P. Ubertini, J. Chenevez, S. Brandt, R. Diehl, A. von Kienlin, D. Gotz, P. Laurent, A. Goldwurm, A. Coleiro, L. Hanlon, A. Martin-Carrillo, J.-P. Roques, E. Jourdain, P. von Ballmoos, A.D. Garau, M.M. Hesse, A. Lutovinov and R. Sunyaev: INTEGRAL observation of IceCube-190104A. *GCN Circ.* 23689, 1 (2019).
- Schady, P. and J. Bolmer: GRB 190613B: GROND Detection of the Optical/NIR Afterglow. *GCN Circ.* 24831, 1 (2019).
- Schady, P., D. Xu, K.E. Heintz, N.R. Tanvir, D.B. Malesani, D.A. Kann, R. Sanchez-Ramirez and K. Wiersema: GRB 190106A: VLT/X-shooter redshift confirmation. *GCN Circ.* 23632, 1 (2019).
- Schady, P., T.-W. Chen, T. Schweyer, D.B. Malesani and J. Bolmer: LIGO/Virgo S190425z: GROND observations of AT2019ebq/PS19qp. *GCN Circ.* 24229, 1 (2019).
- Schruba, A., S. Bialy and A. Sternberg: VizieR Online Data Catalog: Metallicity measurements in 70 nearby galaxies (Schruba+, 2018). VODC J/ApJ/862/110 (2019).
- Shimizu, T.T., R.F. Mushotzky, M. Melendez, M.J. Koss, A.J. Barger and L.L. Cowie: VizieR Online Data Catalog: AGN global star-forming properties (Shimizu+, 2017). VODC J/MNRAS/466/3161 (2019).
- Shimwell, T.W., C. Tasse, M.J. Hardcastle, ..., A. Merloni, et al.: VizieR Online Data Catalog: LOFAR Two-metre Sky Survey DR1 source catalog (Shimwell+, 2019). VODC J/A+A/622/A1 (2019).
- Sohn, J., G. Chon, H. Böhringer, M.J. Geller, A. Diaferio, H.S. Hwang, Y. Utsumi and K.J. Rines: VizieR Online Data Catalog: The HectoMAP cluster survey. II. X-ray clusters (Sohn+, 2018). VODC J/ApJ/855/100 (2019).
- Soubiran, C., G. Jasiewicz, L. Chemin, C. Zurbach, N. Brouillet, P. Panuzzo, P. Sartoretti, D. Katz, J.-F. Le Campion, O. Marchal, D. Hestroffer, F. Thevenin, F. Crifo, S. Udry, M. Cropper, G. Seabroke, Y. Viala, K. Benson, R. Blomme, A. Jean-Antoine-Piccolo, H. Huckle, M. Smith, S.G. Baker, Y. Damerdjji, C. Dolding, Y. Fremat, E. Gosset, A. Guerrier, L.P. Guy, R. Haigron, K. Janssen, G. Plum, C. Fabre, Y. Lasne, F. Pailler, C. Panem, F. Riclet, F. Royer, G. Tauran, T. Zwitter, A. Gueguen and C. Turon: VizieR Online Data Catalog: Gaia DR2 radial velocity standard stars catalog (Soubiran+, 2018). VODC J/A+A/616/A7 (2019).
- Stringer, K.M., J.P. Long, L.M. Macri, ..., B. Hoyle, et al.: VizieR Online Data Catalog: Identification of RR Lyrae stars from the DES (Stringer+, 2019). VODC J/AJ/158/16 (2019).
- Sun, J., A.K. Leroy, A. Schruba, E. Rosolowsky, A. Hughes, J.M.D. Kruijssen, S. Meidt, E. Schinnerer, G.A. Blanc, F. Bigiel, A.D. Bolatto, M. Chevance, B. Groves, C.N. Herrera, A.P.S. Hygate, J. Pety, M. Querejeta, A. Usero and D. Utomo: VizieR Online Data Catalog: Cloud-scale molecular gas properties in 15 galaxies (Sun+, 2018). VODC J/ApJ/860/172 (2019).
- Svinkin, D., K. Hurley, A. Goldstein, M.S. Briggs, C. Wilson-Hodge, A. von Kienlin, X. Zhang, A. Rau, V. Savchenko, E. Bozzo and C. Ferrigno: IPN triangulation of GRB 190504A (short). *GCN Circ.* 24393, 1 (2019).
- Svinkin, D., K. Hurley, A. Goldstein, M.S. Briggs, C. Wilson-Hodge, A. von Kienlin, X. Zhang, A. Rau, V. Savchenko, E. Bozzo, C. Ferrigno, S. Barthelmy, J. Cummings, H. Krimm and D. Palmer: IPN triangulation of GRB 190409B (short). *GCN Circ.* 24095, 1 (2019).
- Svinkin, D., S. Golenetskii, R. Aptekar, D. Frederiks, A. Kozlova, T. Cline, K. Hurley, A. Goldstein, M.S. Briggs, C. Wilson-Hodge, A. von Kienlin, X. Zhang, A. Rau, V. Savchenko, E. Bozzo, C. Ferrigno, S. Barthelmy, J. Cummings, H. Krimm and D. Palmer: IPN Triangulation of GRB 190118A (long). *GCN Circ.* 23765, 1 (2019).
- Svinkin, D., S. Golenetskii, R. Aptekar, D. Frederiks, A. Kozlova, T. Cline, K. Hurley, A. Goldstein, M.S. Briggs, C. Wilson-Hodge, A. von Kienlin, X. Zhang, A. Rau, V. Savchenko, E. Bozzo, C. Ferrigno, S. Barthelmy, J. Cummings, H. Krimm and D. Palmer: IPN Triangulation of GRB 190415A. *GCN Circ.* 24128, 1 (2019).
- Svinkin, D., S. Golenetskii, R. Aptekar, D. Frederiks, A. Kozlova, T. Cline, K. Hurley, S. Barthelmy, J. Cummings, H. Krimm, D. Palmer, A. von Kienlin, X. Zhang, A. Rau, V. Savchenko, E. Bozzo and C. Ferrigno: IPN Triangulation of GRB 190305A. *GCN Circ.* 23936, 1 (2019).
- Traulsen, I., A.D. Schwöpe, G. Lamer, J. Ballet, F. Carrera, M. Coriat, M.J. Freyberg, L. Michel, C. Motch, S.R. Rosen, N. Webb, M.T. Ceballos, F. Koliopanos, J. Kurpas, M. Page and M.G. Watson: VizieR Online Data Catalog: 3XMM-DR7s serendipitous source catalogue from stacks (Traulsen+, 2019). VODC IX/56 (2019).
- Tychoniec, L., C.L.H. Hull, L.E. Kristensen, J.J. Tobin, V.J.M. Le Gouellec and E.F. van Dishoeck: VizieR Online Data Catalog: Extremely high-velocity jets in Serpens (Tychoniec+, 2019).

2019). VODC J/A+A/632/A101 (2019).

van Terwisga, S.E., A. Hacar and E.F. van Dishoeck: VizieR Online Data Catalog: Disk masses in the Orion Molecular Cloud-2 (van Terwisga+, 2019). VODC J/A+A/628/A85 (2019).

van't Hoff, M.L.R., E.F. van Dishoeck, J.K. Jorgensen and H. Calcutt: VizieR Online Data Catalog: IRAS 16293-2422 spectral cubes (van 't Hoff+, 2020). VODC J/A+A/633/A7 (2019).

Vlasenko, D., V. Lipunov, D. Svinkin, J. Greiner, O. Gress, I. Gorbunov, A. Kuznetsov, E. Gorbovskey, P. Balanutsa, N. Tiurina, V. Kornilov, V. Vladimirov, D. Zimnukhov, F. Balakin, A. Chasovnikov, V. Topolev, V. Senik, V. Grinshpun, T. Pogrosheva, D. Kuvshinov, V. Yurkov, A. Gabovich, Yu. Sergienko, D. Kobcev, N.M. Budnev, O. Ershova, A. Tlatov, D. Dormidontov, A.V. Parhomenko, R. Rebolo, M. Serra, N. Lodieu, G. Israelian, L. Suarez-Andres, D. Buckley, R. Podesta, C. Lopez, C. Francile, F. Podesta, H. Levato and V. Shumkov: MASTER OT J080207.73+352847.7 discovery - optical afterglow of very bright GRB190530A. The Astronomer's Telegram 12824, 1 (2019).

von Kienlin, A., S. Poolakkil and C. Meegan: GRB 1903020A: Fermi GBM observation. GCN Circ. 23978, 1 (2019).

von Kienlin, A.: GRB 190109A: Fermi GBM observation. GCN Circ. 23658, 1 (2019).

von Kienlin, A.: GRB 190326B: Fermi GBM detection. GCN Circ. 24013, 1 (2019).

von Kienlin, A.: GRB 190511A: Fermi GBM observation. GCN Circ. 24482, 1 (2019).

von Kienlin, A.: GRB 190519A: Fermi GBM observation. GCN Circ. 24596, 1 (2019).

Weil, K.E., J.R. Thorstensen and F. Haberl: VizieR Online Data Catalog: Radial velocities of 2 VY Sculptoris-type CV stars (Weil+, 2018). VODC J/AJ/156/231 (2019).

Yang, Y.-L., J.D. Green, N.J. Evans II, J.-E. Lee, J.K. Jorgensen, L.E. Kristensen, J.C. Mottram, G. Herczeg, A. Karska, O. Dionatos, E.A. Bergin, J. Bouwman, E.F. van Dishoeck, T.A. van Kempen, R.L. Larson and U.A. Yildiz: VizieR Online Data Catalog: CO in Protostars (COPS): Herschel spectroscopy (Yang+, 2018). VODC J/ApJ/860/174 (2019).

Zafar, T., K.E. Heintz, J.P.U. Fynbo, D. Malesani, J. Bolmer, C. Ledoux, M. Arabsalmani, L. Kaper, S. Campana, R.L.C. Starling, J. Selsing, D.A. Kann, A. de Ugarte Postigo, T. Schweyer, L. Christensen, P. Moller, J. Japelj, D. Perley, N.R. Tanvir, P. D'Avanzo, D.H. Hartmann, J. Hjorth, S. Covino, B. Sbarufatti, P. Jakobsson, L. Izzo, R. Salvaterra, V. D'Elia and D. Xu: VizieR Online Data Catalog: GROND, NOT & VLT/X-shooter obs. of GRB180325A (+, 2018). VODC J/ApJ/860/L21 (2019).

Poster

- Ali Lagoa, V.: Thermal properties of large asteroids from Herschel PACS data, Thermal Models for Planetary Science III, Hungarian Academy of Sciences, Budapest, Hungary, February 2019.
- Arcodia, R.: Testing the disk-corona interplay in broad-line AGN, Quasars in Crisis, Edinburgh, Scotland, August 2019.
- Behrendt, M. et al.: Hierarchical Properties of Observed Clumps in High-Redshift Disk Galaxies, ORIGINS Science Week, Excellence Cluster, Garching, Germany, December 2019.
- Carpano, S. et al.: New outburst with periodic modulation for a luminous supersoft source in NGC 300, X-Ray Astronomy 2019, Bologna, Italy, September 2019.
- Carpano, S. et al.: The Ultraluminous X-ray pulsar NGC300 ULX 1, PHAROS Conference 2019: the multi-messenger physics and astrophysics of neutron stars, Platja d'Aro, Spain, April 2019.
- Endres, C.P. et al.: Rate Coefficients for NH_3 -He Collisions: First results from Pump-Probe Chirped-Pulse Experiments, 703. WE-Heraeus-Seminar / Chemical Evolution of Cosmic Matter, Bad Honnef, Germany, October 2019.
- Gajda, G. et al.: Dissecting stellar populations in barred galaxies, Galactic Dynamics in the Era of Large Surveys (Shanghai Astronomical Observatory, Chinese Academy of Sciences), Shanghai, China, June 2019.
- Müller, B. et al.: Laboratory studies of icy dust grain opacities, Annual Meeting of the German Astronomical Society - Mission to the Universe From Earth to Planets, Stars & Galaxies, Stuttgart, Germany, September 2019.
- Müller, B. et al.: Spectroscopic signature and optical constants of interstellar ice analogues, 703. WE-Heraeus-Seminar - Chemical Evolution of Cosmic Matter, Bad Honnef, Germany, October 2019.
- Müller, B. et al.: Spectroscopic signature of water-based interstellar ice analogues, 10th International Meeting on Atomic and Molecular Physics and Chemistry 2019, Madrid, Spain, June 2019.
- Müller, T. et al.: Thermophysical modelling of Ryugu: pre-permission and approach-phase observations, EPSC-DPS Joint Meeting 2019, Geneva, Switzerland, September 2019.
- Müller, T. et al.: Small Bodies Near and Far: Synergies from ground and space, Thermal Models for Planetary Science III, Hungarian Academy of Sciences, Budapest, Hungary, February 2019.
- Nagy, Z. et al.: The chemical structure of the starless core L1521E, Astrochemistry: From nanometers to megaparsecs, Gothenburg, Sweden, June 2019.
- Nagy, Z. et al.: The chemical structure of the starless core L1521E, Zooming in on Star Formation, Nafplio, Greece, June 2019.
- Obermeier, C.: Surveying exoplanets across the spectrum - following the TraCS of exoplanets, Extreme Solar Systems IV conference, Reykjavik, Iceland, August 2019.
- Rau, A.: The Science of the Athena Wide Field Imager, X-ray Astronomy 2019 - Current Challenges and New Frontiers in the Next Decade, Bologna, Italy, September 2019.
- Redaelli, E. et al.: Deuteration of N_2H^+ and HCO^+ in the pre-stellar core L1544, Astrochemistry: From nanometers to megaparsecs - A symposium in honour of John H. Black, Gothenburg, Sweden, June 2019.
- Rosensteiner, M. et al.: The MICADO/MAORY PSF reconstruction service, AO4ELT6, Quebec City, Canada, June 2019.
- Shingledecker, C.N. et al.: Radiation Chemistry in Astrochemical Models: From the Lab to the ISM, IAU Symposium 350, Cambridge, UK, April 2019.
- Spezzano, S. et al.: The distribution of methanol around starless cores, Crete III: Through dark lanes to new stars, Crete, Greece, September 2019.
- Winkler, M. et al.: Probing RNA-stability, formation and catalysis in simulated prebiotic environments on the early Earth and in Space, Annual meeting of the Deutsche Astrobiologische Gesellschaft, Vienna, Austria, September 2019.
- Winkler, M. et al.: Probing RNA-stability, formation and catalysis in simulated prebiotic environments on the early Earth and in Space, Laboratory Astrophysics Workshop "The chemical evolution of cosmic matter, Bad Honnef, Germany, October 2019.
- Wolf, J. et al.: Exploring the Diversity of Type 1 Active Galactic Nuclei Identified in SDSS-IV/SPIDERS, X-RAY ASTRONOMY 2019, Bologna, Italy, September 2019.
- Wölfer, L. et al.: Radiation-Hydrodynamical Models of X-ray Photoevaporation in Carbon Depleted Circumstellar Discs, From Stars to Planets II, Gothenburg, Sweden, June 2019.
- Wölfer, L. et al.: Radiation-Hydrodynamical Models of X-ray Photoevaporation in Carbon Depleted Circumstellar Discs, Planet Formation and Evolution 2019, Rostock, Germany, February 2019.

Talks

- Ali-Lagoa, V.: The thermal inertia of (16) Psyche revisited, contributed talk, Thermal Models for Planetary Science III, Hungarian Academy of Sciences, Budapest, Hungary, February 2019.
- Arcodia, R.: Testing the disk-corona interplay in broad-line AGN, contributed talk, Supermassive Black Holes: Environment and Evolution, Corfu, Greece, June 2019.
- Arcodia, R.: Testing the disk-corona interplay in broad-line AGN, contributed talk, From the Dolomites to the event horizon: sledging down the black hole potential well, Sexten, Italy, July 2019.
- Arcodia, R.: Testing the disk-corona interplay in broad-line AGN, contributed talk, X-ray Astronomy 2019, Bologna, Italy, September 2019.
- Arcodia, R.: Do stellar-mass and super-massive black holes have similar dietary habits?, contributed talk, AGN Spectral States: Unification of Black Holes across the Mass Scale, Prague, Czech Republic, November 2019.
- Bauböck, M.: Astrophysics at the Galactic Center, contributed talk, Lomonosov Conference on Elementary Particle Physics, Moscow, Russia, August 2019.
- Bauböck, M.: Models of Orbital Motion in the Galactic Center, contributed talk, Galactic Center Workshop 2019, Yokohama, Japan, October 2019.
- Bauböck, M.: Stellar Orbits and Infrared Flares at the Galactic Center, colloquium, DESY Zeuthen, Zeuthen, Germany, November 2019.
- Belli, S.: Fitting Spectroscopy and Photometry, invited talk, LEGA-C Survey Workshop, Ghent, Belgium, May 2019.
- Belli, S.: The Formation of Quiescent Galaxies, colloquium, INAF Arcetri, Florence, Italy, January 2019.
- Belli, S.: The Formation of Quiescent Galaxies, colloquium, INAF Padova, Padova, Italy, January 2019.
- Belli, S.: The Formation of Quiescent Galaxies, colloquium, Subaru Base, Hilo, HI, USA, November 2019.
- Belli, S.: The Formation of Quiescent Galaxies, colloquium, Seminar at Center for Astrophysics, Cambridge, MA, USA, January 2019.
- Belli, S.: The Formation of Quiescent Galaxies, colloquium, Tufts University, Medford, MA, USA, November 2019.
- Belli, S.: The Star Formation Histories of Massive Quiescent Galaxies at $z \sim 2$, invited talk, Subaru Telescope 20th Anniversary Symposium, Kona, HI, USA, November 2019.
- Bizzocchi, L.: Deuterated amidogen in the laboratory and in Space, contributed talk, Italian National Conference on Astrochemistry and Astrobiology, Duino, Italy, October 2019.
- Bizzocchi, L.: Millimeter-wave spectrum of CH_3NHCN , invited talk, Workshop on Nonrigid Molecules in Atmospheric and Astronomical Environments at the University of Huelva, Huelva, Spain, October 2019.
- Bodendorf, C.: Testing the near-infrared optical assembly of the space telescope Euclid, contributed talk, Astronomical Optics: Design, Manufacture, and Test of Space and Ground Systems II SPIE Conference, San Diego, USA, September 2019.
- Boller, Th.: Schwarze Löcher nah und fern, public talk, Reihe Cafe und Kosmos, Munich, Germany, July 2019.
- Boller, Th.: Accretion disc physics and black holes, invited talk, Havanna School on Physics, Havanna, Cuba, May 2019.
- Boller, Th.: The beginning and the end of the Universe, invited talk, 24th World Congress of Dermatology, Milan, Italy, June 2019.
- Boller, Th.: Unser Universum, public talk, Kinder und Jugendakademie Moosburg, Moosburg, Germany, January 2019.
- Bonholzer, M.: Electrical characterization of prototype DEPFET detectors for Athena's Wide Field Imager, contributed talk, SPIE Optical Engineering + Applications, San Diego, CA, USA, August 2019.
- Bonholzer, M.: Status of the wide field imager instrument for Athena, contributed talk, SPIE Optical Engineering + Applications, San Diego, CA, USA, August 2019.
- Bonholzer, M.: The DEPFET detectors of Athena's WFI: Status overview, contributed talk, 9th. Athena WFI Consortium Meeting, Garching, Germany, March 2019.
- Buchner, J.: What makes clumpy obscuration and X-ray occultation events?, contributed talk, Supermassive Black holes Environment & Evolution, Corfu, Greece, June 2019.
- Buchner, J.: Practical Bayesian inference with Nested Sampling and PyMultiNest, invited talk, Bayesian Inference in Subatomic Physics (Wallenberg Symposium), Göteborg, Sweden, September 2019.
- Buchner, J.: Special talk: X-ray spectral fitting methods and BXA, colloquium, Quasar Tea, Cambridge, USA, October 2019.
- Buchner, J.: The hidden Supermassive Black Hole population over cosmic time, colloquium, Quasar Tea, Cambridge, USA, February 2019.
- Buchner, J.: Population Inference and Nested Sampling methods, colloquium, Machine Learning Journal Club, Cambridge, USA, October 2019.
- Buchner, J.: eROSITA, public talk, radio show 'DasDing', Stuttgart, Germany, June 2019.

- Buchner, J.: X-ray spectral fitting methods, invited talk, X-ray spectral fitting methods workshop, Munich, Germany, September 2019.
- Bulbul, E.: Witnessing the Growth of Structure through X-ray Observations of Clusters of Galaxies, colloquium, Joint Astronomy Colloquium, Munich, Germany, December 2019.
- Burgess, J.M.: Synchrotron emission in GRBs, contributed talk, 12th INTEGRAL conference, Geneva, Switzerland, January 2019.
- Burgess, J.M.: The Multi-Mission Maximum Likelihood Framework, invited talk, PyGamma Workshop, Heidelberg, Germany, March 2019.
- Burgess, J.M.: Synchrotron emission in GRBs, invited talk, Nanjing GRB Conference, Nanjing, China, March 2019.
- Burgess, J.M.: Synchrotron emission in GRBs, invited talk, Ioffe Workshop on GRBs and other transient sources: 25 Years of Konus-Wind Experiment, St. Petersburg, Russia, September 2019.
- Burgess, J.M.: Synchrotron emission in GRBs, invited talk, Gamma-ray Bursts in the Gravitational Wave Era, Yokohama, Japan, October 2019.
- Carpano, S.: Time variability of X-ray sources with eROSITA instrument, contributed talk, The Future of X-ray Timing, Amsterdam, The Netherlands, October 2019.
- Caselli, P.: Astrochemistry at the dawn of star and planet formation, colloquium, Centro de Astrobiología (CSIC/INTA), Madrid, Spain, October 2019.
- Caselli, P.: Astrochemistry at the dawn of star and planet formation, colloquium, Facultat de Física, Universitat de Barcelona, Barcelona, Spain, March 2019.
- Caselli, P.: Astrochemistry at the dawn of star and planet formation, colloquium, Hamburg Photon Science Colloquium, Hamburg, Germany, May 2019.
- Caselli, P.: Astrochemistry at the dawn of star and planet formation, invited talk, The 30th International Symposium on Space Terahertz Technology (ISSTT 2019), Gothenburg, Sweden, April 2019.
- Caselli, P.: Deuterated forms of H_3^+ and their importance in astrochemistry, invited talk, Advances in hydrogen molecular ions: H_3^+ , H_5^+ and beyond, Discussion Meeting, The Royal Society, London, UK, January 2019.
- Caselli, P.: From pre-stellar cores to our Solar System: the astrochemical link, invited talk, Probing AGNs and Star Formation - observations and models, Onsala, Sweden, September 2019.
- Caselli, P.: Isotope fractionation in star formation, invited talk, Astrochemistry: from nanometers to megaparsecs - A Symposium in honour of John H. Black, Gothenburg, Sweden, June 2019.
- Caselli, P.: Le nostre origini astrochimiche, public talk, Società Ticinese di Scienze Naturali, Bellinzona, Switzerland, September 2019.
- Caselli, P.: Making life from stardust, public talk, Science Week, Chalmers House, Gothenburg, Sweden, September 2019.
- Caselli, P.: Our astrochemical origins, public talk, Bayerische Volkssternwarte, Munich, Germany, September 2019.
- Caselli, P.: Water at the dawn of star formation, invited talk, Water in the Universe, 258th National Meeting, The Astrochemistry Subdivision of the American Chemical Society, San Diego, USA, August 2019.
- Caselli, P.: Water at the earliest stages of star formation, invited talk, Millimetron Workshop, Paris, France, September 2019.
- Collmar, W.: The MeV-Sky as seen by CGRO/COMPTEL, colloquium, MPI für Kernphysik, Heidelberg, Germany, January 2019.
- Collmar, W.: The CGRO/COMPTEL Allsky Survey at MeV Energies, contributed talk, 12th INTEGRAL Conference / 1st AHEAD Gamma-ray Workshop, Geneva, Switzerland, February 2019.
- Collmar, W.: Gamma-Ray Binaries at soft MeV-Energies: The COMPTEL Status, contributed talk, Variable Galactic Gamma-Ray Sources (V), Barcelona, Spain, September 2019.
- Comparat, J.: An eROSITA mock catalog of Active Galactic Nuclei and their large-scale structure, colloquium, Instituto Astrofísica Andalucía (IAA), Granada, Spain, May 2019.
- Comparat, J.: An eROSITA mock catalog of Active Galactic Nuclei and their large-scale structure, colloquium, Helsinki University, Helsinki, Finland, January 2019.
- Comparat, J.: An eROSITA mock catalog of Active Galactic Nuclei and their large-scale structure. The low redshift survey at calar alto, contributed talk, Astro-plate III, Bamberg, Germany, March 2019.
- Comparat, J.: Consortium Survey 5 Galaxy Cluster Redshift Survey, invited talk, Preparing for 4MOST. A community workshop introducing ESO's next-generation spectroscopic survey facility, Garching, Germany, May 2019.
- Comparat, J.: Mapping the Universe, colloquium, Kurt Goedel Institute for Logic of Wien, Wien, Österreich, May 2019.
- Comparat, J.: Planning 4MOST, contributed talk, 4MOST all hands meeting, Potsdam, Germany, September 2019.
- Comparat, J.: SPIDERS DR16, contributed talk, SDSS-IV SPIDERS workshop, Toulouse, France, May 2019.
- Comparat, J.: SPIDERS update, contributed talk, SPIDERS workshop, Helsinki, Finland, January 2019.
- Comparat, J.: Simulating the eROSITA Sky, contributed talk, CosmoCruise 2019, Venice, Italy, August 2019.
- Comparat, J.: Updates on the Consortium Survey 5 Galaxy Cluster Redshift Survey, contributed talk, 4MOST all hands meeting, Potsdam, Germany, September 2019.
- Davies, R.L.: Properties and Scaling Relations of Ionized

- Gas Outflows at $z \sim 1-3$, colloquium, Macquarie University, Sydney, Australia, February 2019.
- Davies, R.L.: Properties and Scaling Relations of Ionized Gas Outflows at $z \sim 1-3$, contributed talk, Linking Galaxies from the Epoch of Initial Formation to Today, Sydney, Australia, February 2019.
- Davies, R.L.: Properties and Scaling Relations of Ionized Gas Outflows at $z \sim 1-3$, colloquium, Swinburne University of Technology, Melbourne, Australia, March 2019.
- Davies, R.L.: Properties and Scaling Relations of Ionized Gas Outflows at $z \sim 1-3$, colloquium, University of New South Wales, Sydney, Australia, February 2019.
- Davies, R.L.: Properties and Scaling Relations of Ionized Gas Outflows at $z \sim 1-3$, colloquium, University of Western Australia, Perth, Australia, December 2019.
- Davies, R.L.: Properties and Scaling Relations of Ionized Gas Outflows at $z \sim 1-3$, colloquium, Australian National University, Canberra, Australia, March 2019.
- Davies, R.: A clear view of the universe: Opportunities for high resolution imaging, invited talk, RAS Specialist Discussion Meeting: The Future of High-Resolution Imaging in the Visible and IR, London, UK, January 2019.
- Davies, R.: Imaging the high redshift universe with MICA-DO on the ELT, invited talk, Extremely Big Eyes on the Early Universe, Rome, Italy, September 2019.
- Davies, R.: MICADO sci-ops: shaping its adaptive optics systems, contributed talk, Adaptive optics for extremely large telescopes 6, Quebec, Canada, June 2019.
- Dennerl, K.: An empirical method for improving the XMM-Newton/EPIC-pn RMF and ARFs, contributed talk, 14th IACHEC meeting, 2019 Shonan Village Center, Japan, May 2019.
- Dennerl, K.: Calibration Uncertainties, contributed talk, X-ray spectral fitting methods, Garching (MPE), Germany, September 2019.
- Dennerl, K.: EPIC-pn RMF and ARF improvement: modeling temporal changes, contributed talk, EPIC Calibration and Operations Meeting, Madrid (ESAC), Spain, March 2019.
- Dennerl, K.: RX J1856.5-3754: Reaching consistency between Chandra LETG and XMM-Newton/EPIC-pn, contributed talk, 14th IACHEC meeting, Shonan Village Center, Japan, May 2019.
- Dennerl, K.: Randomization in spectral fitting, contributed talk, X-ray spectral fitting methods, Garching (MPE), Germany, September 2019.
- Dennerl, K.: Verification of the IACHEC model for the SNR 1E 0102.2-7219 with XMM-Newton/EPIC-pn, contributed talk, 14th IACHEC meeting, Shonan Village Center, Japan, May 2019.
- de Oliveira Alves, F.: Dust properties and magnetic fields: the wonders of disk polarization, invited talk, Workshop on Polarization in Protoplanetary Disks and Jets, Sant Cugat, Spain, May 2019.
- de Oliveira Alves, F.: Oficina de Astrofísica: Explorando o Cosmos, public talk, Ciência para Crianças, Casa do Brasil, Munich, Germany, May 2019.
- de Oliveira Alves, F.: The effects of magnetic fields on the dynamics of Young Stellar Objects, invited talk, European Week of Astronomy and Space Science, Lyon, France, June 2019.
- Dexter, J.: Imaging black holes: beyond the shadow, colloquium, University of Colorado, Boulder, Boulder, USA, September 2019.
- Dexter, J.: Imaging black holes: beyond the shadow, invited talk, JSI Workshop: The New Faces of Black Holes, Annapolis, USA, November 2019.
- Dexter, J.: Imaging black holes: beyond the shadow, invited talk, Northwestern University / CIERA, Evanston, USA, November 2019.
- Dexter, J.: Imaging supermassive black holes, invited talk, Humboldt Kolleg: Discoveries and Open Puzzles in Particle Physics and Gravitation, Kitzbühel, Austria, June 2019.
- de Zeeuw, T.: Integral Field Spectroscopy of Galaxies, colloquium, Padua University, Padua, Italy, March 2019.
- de Zeeuw, T.: Professor Adriaan Blaauw, colloquium, Observatory Seminar Leiden, Leiden, The Netherlands, April 2019.
- de Zeeuw, T.: MUSE and GRAVITY, colloquium, Institute of Advanced Study, Princeton, USA, May 2019.
- de Zeeuw, T.: GRAVITY on the VLT, colloquium, Australian National University, Canberra, Australia, November 2019.
- de Zeeuw, T.: Black Holes, public talk, Institute of Advanced Study, Princeton, USA, May 2019.
- de Zeeuw, T.: Reaching New Heights in Astronomy, public talk, Science Café, Principe Island, Portugal, May 2019.
- de Zeeuw, T.: Building the World's Largest Telescopes at ESO, public talk, NVWS Christiaan Huygens, Papendrecht, The Netherlands, September 2019.
- de Zeeuw, T.: Early Days of NOVA, public talk, Gala of Astronomy, Leiden, The Netherlands, December 2019.
- Eisenhauer, F.: 28 years of Galactic Center Observation from the La Silla and Paranal Observatories, invited talk, The La Silla Observatory - from the inauguration to the future, La Serena, Chile, March 2019.
- Eisenhauer, F.: GRAVITY: Towards faint science, all sky milliarcsec optical interferometric imaging, contributed talk, The Very Large Telescope in 2030, ESO, Garching, Germany, June 2019.
- Eisenhauer, F.: GRAVITY Tests of General Relativity and the Black Hole Paradigm in the Galactic Center, colloquium, BHI Colloquium, Cambridge, Massachusetts, USA, February 2019.
- Eisenhauer, F.: GRAVITY and VLTI - The Harvest from the First Two Years (Galactic Center, AGN, and Exoplanets), and a Bright Future ahead, colloquium, ASIAA Colloqui-

um, Taipei, Taiwan R.O.C., July 2019.

Eisenhauer, F.: GRAVITY, the Galactic Center, Relativity, and Massive Black Holes, colloquium, MPIfR, Bonn, Germany, November 2019.

Eisenhauer, F.: GRAVITY, the Galactic Center, Relativity, and Massive Black Holes, invited talk, Annual Science Meeting of the Excellence Cluster Origins, ESO, Garching, Germany, December 2019.

Eisenhauer, F.: General Relativistic Effects Around the Galactic Center Black Hole, invited talk, APS Meeting 2019, Denver, Colorado, USA, April 2019.

Eisenhauer, F.: New Faces of Black Holes Uncovered by GRAVITY. The Beauty of Dynamics, invited talk, 2019 JSI Workshop, Annapolis, Maryland, USA, November 2019

Eisenhauer, F.: Testing General Relativity in the Galactic Center, invited talk, From Einstein and Eddington to Ligo: 100 Years of Gravitational Light Deflection, Principe, Sao Tome and Principe, May 2019.

Eisenhauer, F.: The Galactic Center Black Hole with GRAVITY: Orbital Motion Close to the Last Stable Orbit during a Flare, and General Relativistic Effects in the Orbit of Stars, colloquium, CfA Colloquium, Cambridge, Massachusetts, USA, February 2019.

Eisenhauer, F.: The Galactic Center Black Hole - Testing Einstein's General Relativity and the Black Hole Paradigm, colloquium, KIT Colloquium, Karlsruhe, Germany, June 2019.

Endres, C.P.: The Cologne Database for Molecular Spectroscopy, CDMS: spectroscopic data for Astrochemists and Astrophysicists, invited talk, IAEA: "Technical Meeting on Standards and Software Tools for Atomic and Molecular Databases", Wien, Austria, November 2019.

Fabricius, M.: Diffuse Emission Line Regions in HETDEX, invited talk, Munich Extragalactic Anniversaries Conference, Kloster Seeon, Germany, July 2019.

Fabricius, M.: First science with HETDEX, invited talk, ESO Thirty Minute Talk, Santiago de Chile, Chile, February 2019.

Förster Schreiber, N.M.: Resolved Views of Galaxy Evolution at Cosmic Noon, colloquium, Astronomy Seminar, University of California Los Angeles, Los Angeles, USA, February 2019.

Gao, F.: GRAVITY science highlights and technical challenge/advance in near-infrared interferometry, colloquium, Nanjing University, Nanjing, China, June 2019.

Gao, F.: GRAVITY science highlights and technical challenge/advance in near-infrared interferometry, colloquium, National Astronomy Observatory of China, Beijing, China, June 2019.

Gao, F.: GRAVITY science highlights and technical challenge/advance in near-infrared interferometry, colloquium, Peking University, Beijing, China, June 2019.

Genzel, R.: Testing General Relativity with Infrared Interferometry in the Center of the Milky Way, invited talk,

Caltech, Cahill Center for Astronomy and Astrophysics, Pasadena, CA, USA, February 2019.

Genzel, R.: Testing General Relativity with Infrared Interferometry in the Center of the Milky Way, invited talk, CCA Colloquium, Flatiron Institute, Center for Computational Astrophysics, New York, USA, February 2019.

Genzel, R.: Testing General Relativity with Infrared Interferometry in the Center of the Milky Way, invited talk, Black Hole Initiative, CfA Harvard, USA, February 2019.

Genzel, R.: High Resolution Astronomy with Infrared Interferometry, invited talk, Tal Alexander Workshop on Dynamics and Accretion near Massive Black Holes, TAU, Tel Aviv, Israel, April 2019.

Genzel, R.: High Resolution Astronomy with Infrared Interferometry, colloquium, Special Physics Colloquium, Weizmann Institute of Science, Tel Aviv, Israel, May 2019.

Genzel, R.: Rotation Curves and the Distribution of Baryons and Dark Matter in $z=0.6-2.5$ Star Forming Disks, colloquium, Hebrew University, Jerusalem, Israel, May 2019.

Genzel, R.: Testing General Relativity with Infrared Interferometry in the Center of the Milky Way, colloquium, University of Padova, Padova, Italy, May 2019.

Genzel, R.: Millimeter and sub-millimeter astronomy, invited talk, CTA Symposium Bologna, Bologna, Italy, May 2019.

Genzel, R.: Testing General Relativity with Infrared Interferometry in the Center of the Milky Way, invited talk, Galaxies and Dark Components of the Universe, Kloster Seeon, Germany, July 2019.

Genzel, R.: Testing GR and the Massive Black Hole Paradigm with Infrared Interferometry, invited talk, KIPAC/Department of Physics, Stanford University, USA, September 2019.

Genzel, R.: Evolution of Galactic Disks, invited talk, KICC 10th Anniversary Symposium, Kavli Institute, Cambridge, UK, September 2019.

Genzel, R.: Black Holes, invited talk, Wellcome Trust Common Leadership Meeting, MPG, Munich, Germany, September 2019.

Genzel, R.: Introduction for Edward C. Stone as 2019 Shaw Laureate in Astronomy, invited talk, Speech at Shaw Prize Award Presentation Ceremony, Hong Kong, China, September 2019.

Genzel, R.: Test der Allgemeinen Relativitätstheorie durch Infrarotinterferometrie am Galaktischen Zentrum, invited talk, Bad Honnefer Industriegespräch, Physikzentrum, Bad Honnef, Germany, October 2019.

Genzel, R.: Die Allgemeine Relativitätstheorie auf dem Prüfstand, public talk, Wilhelm-Förster Sternwarte, Berlin, Germany, October 2019.

Genzel, R.: The evolution of the ionized gas velocity dispersion in SG galaxies, invited talk, MIST 2019: Cosmic Turbulence and Magnetic Fields, Cargèse, France, November 2019.

- Genzel, R.: New Results on Rotation Curves and the Distribution of Baryons and Dark Matter in $z=0.6-2.5$ Star Forming Disks, invited talk, ORIGINS Science Week, Garching, Germany, December 2019.
- Gerhard, O.: Angular momentum of early-type galaxies based on extended kinematics, colloquium, Institute of Astronomy, Univ. Cambridge, Cambridge, UK, September 2019.
- Gerhard, O.: Dynamics of the Milky Way bulge. A new 3D view from VIRAC and Gaia proper motions, invited talk, In the Balance: Stasis and Disequilibrium in the Milky Way, Kavli Institute for Theoretical Physics, Santa Barbara, USA, April 2019.
- Gerhard, O.: Kinematics and dynamics of the Milky Way from Gaia and big surveys, invited talk, Galaxies and Dark Components of the Universe, Kloster Seeon, Seeon, Germany, July 2019.
- Gerhard, O.: Milky Way large-scale structure, colloquium, Sydney Institute for Astronomy, Sydney, Australia, November 2019.
- Gerhard, O.: Structure and dynamics of the barred Milky Way, colloquium, Research School of Astronomy and Astrophysics, Australian National University, Canberra, Australia, November 2019.
- Gerhard, O.: The Milky Way bar and bulge, invited talk, IAU Symposium 353, Galactic Dynamics in the Era of Large Surveys, Shanghai, China, July 2019.
- Gerhard, O.: The Milky Way bulge/bar, invited talk, OGLE-ing the Variable Sky, Jahrestagung Astronomische Gesellschaft, Stuttgart, Germany, September 2019.
- Gerhard, O.: The dynamical properties and origin of the Milky Way stellar halo, invited talk, Light in the suburbs: structure and chemodynamics of galaxy halos, Sexten Center for Astrophysics, Sexten, Italy, June 2019.
- Gillessen, S.: Der Klang des Urknalls, public talk, Gymnasium Penzberg, Penzberg, Germany, March 2019.
- Gillessen, S.: General Relativistic Effects around the Galactic Center Black Hole, invited talk, Galactic Center Workshop 2019, Yokohama, Japan, October 2019.
- Gillessen, S.: Das Schwarze Loch im Zentrum der Milchstraße, public talk, Sternwarte Neumarkt, Neumarkt (Oberpfalz), Germany, June 2019.
- Gillessen, S.: Das Schwarze Loch im Zentrum der Milchstraße, public talk, Planetarium Freiburg, Freiburg, Germany, November 2019.
- Gillessen, S.: Das Schwarze Loch im Zentrum der Milchstraße, public talk, Sternwarte Feuerstein, Feuerstein, Germany, November 2019.
- Gillessen, S.: Einstein auf dem Prüfstand: Das Schwarze Loch im Zentrum der Milchstraße, public talk, Planetarium Stuttgart, Stuttgart, Germany, May 2019.
- Gillessen, S.: Latest news from the Galactic Center, invited talk, APS Meeting, Denver, USA, April 2019.
- Gillessen, S.: Schwarze Löcher - Science Fiction oder Realität?, public talk, Deutsches Museum Bonn, Bonn, Germany, December 2019.
- Gillessen, S.: Schwarze Löcher - Science Fiction oder Realität?, public talk, Taco Tuesday, Munich, Germany, September 2019.
- Gillessen, S.: Stellar Motions near the Galactic Center Black Hole, invited talk, IAU meeting 353: Galactic Dynamics in the Era of Large Surveys, Shanghai, China, July 2019.
- Gillessen, S.: Stellar motions near the Galactic Center black hole, invited talk, Conference: Stars on the run, Potsdam, Germany, 27.8.2019.
- Gillessen, S.: The massive black hole in the Galactic Center, invited talk, Very High Energy Phenomena Around Supermassive Black Holes, Yerevan, Armenia, April 2019.
- Giuliano, B.M.: Direct measurement of complex refractive index of CO ice using terahertz pulsed spectroscopy, contributed talk, Italian National Conference on Astrochemistry and Astrobiology, Duino, Italy, October 2019.
- Giuliano, B.M.: Direct measurements of the optical properties of CO ice in the THz range and opacity calculation, contributed talk, Astrochemistry: From nanometers to Megaparsecs - A Symposium in honour of John H. Black, Gothenburg, Sweden, June 2019.
- Gong, M.: Observing molecular clouds in numerical simulations, invited talk, AstroDat, Orsay, France, November 2019.
- Gong, M.: Post-processing chemistry and its applications to the XCO conversion factor, invited talk, Athena++ workshop 2019, Las Vegas, USA, March 2019.
- Gong, M.: Observing molecular clouds in numerical simulations, contributed talk, So-Star: the self-organised star formation process, Orsay, France, September 2019.
- Greiner, J.: Fermi/GBM as gamma-ray transient monitor, invited talk, Current themes in Gravitational Physics, Copenhagen, Denmark, August 2019.
- Greiner, J.: Fermi/GBM localisations of GRBs, contributed talk, GRBs and other transient sources: 25 Years of Konus-Wind Experiment, St. Petersburg, Russia, September 2019.
- Greiner, J.: The Fermi/GBM as gamma-ray transient monitor and more, contributed talk, GRBs in the Gravitational Wave era, Yokohama, Japan, October 2019.
- Greiner, J.: Skyhopper - ein 4-Kanal Nah-Infrarot Teleskop auf einem CubeSat, colloquium, Forum Munich Aerospace, Garching, Germany, November 2019.
- Grupp, F.: EUCLID NISP: Per Aspera Ad Astra, invited talk, Munich Extragalactic Anniversaries Conference, Kloster Seeon, Germany, July 2019.
- Grupp, F.: Die EUCLID Mission und das EUCLID NISP Instrument, invited talk, Deutsche Luft- und Raumfahrt conference, Darmstadt, Germany, October 2019.
- Grupp, F.: The EUCLID survey and its implication for stellar physics, invited talk, Future large spectroscopic sur-

ys conference, Yichang, China, October 2019.

Grupp, F.: Status of the planet activities at Wendelstein observatory, invited talk, Precise radial velocity spectroscopy conference, Busan, South Korea, October 2019.

Guglielmo, V.: Star formation properties of galaxies at $0.1 < z < 0.5$ from the XXL survey, contributed talk, GEE6. The journey of galaxies in the assembling cosmic structure, Trieste, Italy, October 2019.

Haberl, F.: High-Mass X-ray binary pulsars at high accretion rates, invited talk, X-ray topics in Astronomy: from history to the future, Tübingen, Germany, April 2019.

Haberl, F.: X-ray surveys of the Magellanic Clouds - From XMM-Newton to eROSITA, contributed talk, ESO workshop: A synoptic view of the Magellanic Clouds: VMC, Gaia and beyond, Garching, Germany, September 2019.

Haerendel, G.: Kommunikation mit Außerirdischen, public talk, Vortrag in Campus Kultur, Technische Universität Kaiserslautern, Germany, January 2019.

Haerendel, G.: Meti - Botschaften für andere Welten, invited talk, "Sind wir allein?", Evangelische Akademie Tutzing, Germany, March 2019.

Haerendel, G.: On the energetics of active auroral arcs, contributed talk, "The Plasma Physics of the Magnetosphere", Bra-Pollenzo, Italy, June 2019.

Haerendel, G.: Extraterrestrial civilizations? - Scientific, philosophical and theological consequences, invited talk, EANA 2019: 19th EANA Astrobiology Conference, Orléans, France, September 2019.

Haerendel, G.: Three non-MHD processes acting at substorm onset, contributed talk, 14th International Conference on Substorms, Tromsø, Norway, October, 2019.

Herrera-Camus, R.: Galactic winds at the peak of cosmic star formation activity, invited talk, Linking galaxies from the epoch of initial star formation to today, Sydney, Australia, February 2019.

Hopp, U.: Observatorium Wendelstein – Status, Use and Future Strategy, contributed talk, Large surveys with small telescopes: Past, Present, and Future (Astroplate III) Conference, Bamberg, Germany, March 2019.

Hopp, U.: The Wendelstein Observatory, invited talk, Munich Extragalactic Anniversaries Conference, Kloster Seeon, Germany, July 2019.

Ivlev, A.: Cosmic ray transport in molecular clouds and circumstellar disks, invited talk, International Space Science Institute, Bern, Switzerland, May 2019.

Ivlev, A.: Galactic Cosmic Rays, colloquium, Scuola Normale Superiore di Pisa, Pisa, Italy, March 2019.

Ivlev, A.: Gamma-Ray Emission from Molecular Clouds Generated by Penetrating Cosmic Rays, contributed talk, 12th Integral Conference, Geneva, Switzerland, February 2019.

Ivlev, A.: Low-energy cosmic rays and molecular clouds, invited talk, California Institute of Technology, Pasadena, USA, September 2019.

Ivlev, A.: Low-energy cosmic rays in clouds and disks, invited talk, Gran Sasso Science Institute, L'Aquila, Italy, May 2019.

Ivlev, A.: Penetration of Cosmic Rays into Dense Molecular Clouds, contributed talk, 36th International Cosmic Ray Conference, Madison, USA, July 2019.

Ivlev, A.: Penetration of cosmic rays into dense molecular clouds, invited talk, Stanford University, Stanford, USA, September 2019.

Jimenez-Rosales, A.: A few ideas on how to use spatial polarisation information from simulations, invited talk, EHT Polarisation workshop, Bonn, Germany, July 2019.

Jimenez-Rosales, A.: Overview on Polarisation theory, invited talk, Event Horizon Telescope Collaboration Meeting, Hilo, USA, December 2019.

Jimenez-Rosales, A.: Polarisation signatures of hotspots around Sgr A*, colloquium, Anton Pannekoek Institute, Amsterdam, Netherlands, June 2019.

Jimenez-Rosales, A.: Polarisation signatures on event horizon scales of accreting black holes, contributed talk, New Horizons in Galactic Center Astronomy and Beyond, Yokohama, Japan, October 2019.

Käfer, F.: Towards a characterisation of X-ray galaxy clusters for cosmology, colloquium, Astrophysics seminar, Helsinki, Finland, February 2019.

Käfer, F.: X-ray galaxy cluster detection by outskirts, contributed talk, Alpine Cosmology Workshop, La Berarde, France, June 2019.

Klecker, B.: Energiereiche Teilchen in der Magnetosphäre der Erde: Erkenntnisse von AZUR bis zu den Van Allen Probes, colloquium, Festkolloquium zum 50. Jahrestag des Starts der AZUR Sonde, Christian-Albrechts-Universität Kiel, Germany, November 2019.

Kluge, M.: Structure of Brightest Cluster Galaxies, invited talk, Munich Extragalactic Anniversaries Conference, Kloster Seeon, Germany, July 2019.

Lee, M.: Cold interstellar medium in $z=2.49$ protocluster galaxies, contributed talk, The 2nd Forum on Gas and Galaxies: Multiple-phase ISM - Probing the Activities and Power Engines from Local to Distant Universe, Beijing, China, September 2019.

Lippich, M.: Comparing approximate methods for mock catalogues and covariance matrices, contributed talk, Mock Córdoba: Galaxy formation for gravity and cosmology conference, Córdoba, Argentina, April 2019.

Lutz, D.: Herschel extragalactic deep surveys: Results and legacy, invited talk, Herschel 10 years after launch, Villafranca, Spain, May 2019.

Lutz, D.: Molecular outflows in the local universe, contributed talk, Views on the Interstellar Medium in Galaxies in the ALMA era, Bologna, Italy, September 2019.

Maitra, C.: X-ray identification of AGN behind the Magellanic Clouds, contributed talk, VMC - 11th Consortium Meeting, Cambridge, UK, June 2019.

- Maitra, C.: Unveiling the intriguing nature of PSR J0855-4644 through a Chandra observation: Why no Gamma rays?, contributed talk, 20 years of Chandra, Boston, USA, December 2019.
- Mehrgan, K.: Supermassive Black Holes environment and evolution, contributed talk, Supermassive Black Holes environment and evolution Conference, Corfu, Greece, June 2019.
- Mehrgan, K.: A 40-Billion Solar Mass Black Hole in the unusual central Galaxy of Abell 85, invited talk, Munich Extragalactic Anniversaries Conference, Kloster Seeon, Germany, July 2019.
- Meidinger, N.: Athena WFI Status Overview, contributed talk, Athena WFI Consortium Meeting, Garching, Germany, March 2019.
- Meidinger, N.: CCD Detector Module, contributed talk, CAS/ESA/MPE 2nd Einstein Probe Workshop, Garching, Germany, November 2019.
- Meidinger, N.: Einstein Probe FXT Detector Status, contributed talk, MPE/CAS meeting on EP and eXTP, Beijing, China, April 2019.
- Meidinger, N.: WFI Project Status Overview, contributed talk, 10th WFI Consortium Meeting, Strasbourg, France, October 2019.
- Meidinger, N.: eRosita Cameras Commissioning Status Report, contributed talk, eROSITA Consortium Meeting, Garching, Germany, October 2019.
- Merloni, A.: The 4MOST eROSITA AGN survey, invited talk, ESO Workshop: 4MOST, Garching, Germany, May 2019.
- Merloni, A.: eROSITA on SRG, invited talk, 4MOST All-hands Meeting, Potsdam, Germany, September 2019.
- Merloni, A.: eROSITA on SRG, invited talk, GLOW Annual meeting, Dortmund, Germany, October 2019.
- Merloni, A.: eROSITA on SRG, invited talk, X-ray Astronomy 2019, Bologna, Italy, September 2019.
- Merloni, A.: eROSITA on SRG, invited talk, J-PAS collaboration meeting, Teruel, Spain, December 2019.
- Merloni, A.: eROSITA: Mapping the Hot Universe, colloquium, Scuola Normale Superiore di Pisa, Pisa, Italy, March 2019.
- Merloni, A.: eROSITA: Mapping the Hot Universe, colloquium, University of Southampton, Southampton, UK, June 2019.
- Müller, T.: Thermal IR modelling of near-Earth asteroids, contributed talk, Workshop on "Holistic characterization of near-Earth asteroids (HOLICON)", University of Helsinki, Helsinki, Januar 2019.
- Müller, T.G.: Small Bodies Near and Far, colloquium, University of Poznan, Poznan, Poland, May 2019.
- Müller, T.G.: Ryugu - A fascinating asteroid, colloquium, Max-Planck-Institut für Sonnenforschung, Göttingen, Germany, September 2019.
- Müller, T.G.: Hayabusa2-TIR measurements: thermal properties of Ryugu, colloquium, ISAS, Tokyo, December 2019.
- Müller, T.G.: Asteroiden: Gefahr aus dem All?, public talk, Nicolaus-Copernicus-Planetarium Nürnberg, Nürnberg, Germany, February 2019.
- Müller, T.G.: Schwetzingen im Weltall, public talk, Stadt Schwetzingen, Germany, March 2019.
- Müller, T.G.: Asteroiden: Gefahr aus dem All?, public talk, ESO Supernova, Garching, Germany, May 2019.
- Müller, T.G.: Die Hayabusa2 Mission zu Ryugu, public talk, Asteroid day, ESO Supernova, Garching, Germany, June 2019.
- Müller, T.G.: Asteroiden: Gefahr aus dem All?, public talk, Asteroid day, ESO Supernova, Garching, Germany, June 2019.
- Müller, T.G.: Bad Königshofen im Weltall, public talk, Bad Königshofen, Germany, July 2019.
- Müller, T.G.: Asteroiden unter der Lupe: Lebensbringer oder Gefahr aus dem All?, public talk, VHS Garching, Garching, Germany, November 2019.
- Müller, T.: European Stratospheric Balloon Observatory (ESBO) - Identification of Planetary Science Applications, contributed talk, EPSC-DPS Joint Meeting 2019, Geneva, Switzerland, September 2019.
- Müller, T.: Thermophysical modelling of Centaurs & TNOs, contributed talk, Thermal Models for Planetary Science III, Hungarian Academy of Sciences, Budapest, Hungary, February 2019.
- Müller, T.: The Moon as flux calibrator for TIR measurements of Ryugu during the Hayabusa2 approach phase in June 2018, contributed talk, Thermal Models for Planetary Science III, Hungarian Academy of Sciences, Budapest, Hungary, February 2019.
- Müller-Seidlitz, J.: First Results from Flight-like Sensors for Athena's Wide Field Imager, contributed talk, IEEE NSS/MIC, Manchester, UK, October 2019.
- Nandra, K.: Athena: The ESA mission to explore the Hot and Energetic Universe, invited talk, 17th HEAD Meeting High Energy Astrophysics Division, Monterey, USA, March 2019.
- Nandra, K.: Athena, invited talk, X-ray Astronomy 2019—Current Challenges and New Frontiers in the next Decade, Bologna, Italy, September 2019.
- Nandra, K.: Athena Project Status, invited talk, 10th Meeting of the WFI Consortium, Strasbourg, France, October 2019.
- Nandra, K.: eROSITA Aboard Spectrum-RG: Status and First results, contributed talk, 20 years of Chandra, Boston, USA, December 2019.
- Nandra, K.: Overview of the Athena Mission, invited talk, X-ray Astrophysics from XMM-Newton to Athena, Royal Astronomical Society, London, UK, December 2019.
- Neureiter, B.: Triaxial Dynamical Modeling, invited talk,

Munich Extragalactic Anniversaries Conference, Kloster Seeon, Germany, July 2019.

Obermeier, C.: Surveying exoplanets across the spectrum - following the TraCS of exoplanets, contributed talk, Large surveys with small telescopes: Past, Present, and Future (Astroplate III) Conference, Bamberg, Germany, March 2019.

Pfuhl, O.: Supermassive black holes and young planets seen at milli-arcsecond resolution with GRAVITY, invited talk, Tal Alexander workshop, Tel Aviv University, Tel Aviv, Israel, April 2019.

Pfuhl, O.: The black hole at the center of the Milky way - seen with GRAVITY, public talk, International Astronomical Union Amateur Day Event, Brussels, Belgium, April 2019.

Pfuhl, O.: Tests of General Relativity and the Black Hole Paradigm with GRAVITY, invited talk, Racah Institute of Physics, The Hebrew University of Jerusalem, Jerusalem, Israel, March 2019.

Predehl, P.: eROSITA und die Dunkle Energie, public talk, Planetarium Mannheim, Germany, November 2019.

Predehl, P.: Latest News from eROSITA in Orbit, colloquium, ESOC, Darmstadt, Germany, November 2019.

Predehl, P.: The X-ray Telescope eROSITA on the Russian/German Space Mission SRG, invited talk, AXRO conference, Prague, Czech Republic, December 2019.

Predehl, P.: eROSITA: Status, Calibration, Observations, and Plans, invited talk, HEA2019 conference, Moscow, Russia, December 2019.

Price, S.H.: Disk structure, turbulence, and dark matter in star-forming galaxies at $z \sim 0.7-3.8$, invited talk, KIAA Second Forum on Gas in Galaxies, Beijing, China, September 2019.

Price, S.H.: Galaxies at high redshift: Insights from IFU+MOS observations at $z \sim 1-3$, invited talk, MOSAIC 2019 Science meeting, Heidelberg, Germany, March 2019.

Price, S.H.: Resolved Views of Galaxy Evolution at Cosmic Noon, invited talk, Revolutionary Spectroscopy of Today as a Springboard to Webb, Leiden, The Netherlands, October 2019.

Pulsoni, C.: The outer halos of ETGs in observations and simulations, contributed talk, Light in the suburbs: structure and chemodynamics of galaxy halos Conference, Sesto, Italy, June 2019.

Rau, A.: Athena Mission Status, invited talk, Athena UK Community Meeting, MSSL, UK, September 2019.

Rau, A.: Prospects for Tidal Disruption Event Studies with Einstein Probe, contributed talk, CAS/ESA/MPE Workshop on Einstein Probe, Garching, Germany, November 2019.

Rau, A.: Spectrum-Röntgen-Gamma (SRG), invited talk, TDA-MMS Meeting, Tokyo, Japan, February 2019.

Rau, A.: The Athena X-ray Observatory, invited talk, AG Ta-

gung 2019, Stuttgart, Germany, September 2019.

Redaelli, E.: Deuteration of N_2H^+ and HCO^+ in the prestellar core L1544, contributed talk, Stars and Planets Formation Seminar, Garching, Germany, June 2019.

Redaelli, E.: Fractionation processes: A key to unveil our origins, colloquium, Istituto di Radioastronomia, Bologna, Italy, October 2019.

Redaelli, E.: Molecular fractionation in low-mass star forming regions, contributed talk, Young European Radio Astronomers Conference, Dublin, Ireland, August 2019.

Redaelli, E.: Polarimetry in the class 0 protostar B228 with SOFIA/hawc+ instrument, contributed talk, SOFIA2019 workshop, Ringberg Castle, Germany, January 2019.

Redaelli, E.: Unveiling the magnetic field properties of a class 0 protostar with SOFIA/hawc+, contributed talk, Astronomische Gesellschaft Annual Meeting 2019, Stuttgart, Germany, September 2019.

Riffeser, A.: Microlensing survey of M31 with the 2m Wendelstein telescope, contributed talk, Large surveys with small telescopes: Past, Present, and Future (Astroplate III) Conference, Bamberg, Germany, March 2019.

Rosensteiner, M.: The PSF reconstruction plan for MICADO, contributed talk, AO4ASTRO workshop, Marseille, France, March 2019.

Saglia, R.P.: 30 years of ellipticals together, invited talk, Munich Extragalactic Anniversaries Conference, Kloster Seeon, Germany, July 2019.

Salvato, M.: X-ray sources characterization through multiwavelength surveys, invited talk, X-ray Surveys of the Hot and Energetic Universe, Harbin, China, January 2019.

Salvato, M.: AGN studies in the era of wide-angle and all-sky surveys, colloquium, UNIGE- Observatory of Geneva, Geneva, Switzerland, May 2019.

Salvato, M.: Counterparts to X-ray sources using NWAY, contributed talk, Hyper-Suprime-Camera/eROSITA F2F, Munich, Germany, May 2019.

Salvato, M.: eBOSS/SPIDERS: an update, contributed talk, SDSS Collaboration Meeting, Ensenada, Mexico, June 2019.

Salvato, M.: eROSITA on SRG: a dream come true, contributed talk, EMU international meeting, Catania, Italy, October 2019.

Salvato, M.: eROSITA on SRG: a dream come true, invited talk, ORIGINS science day, Munich, Germany, December 2019.

Sanchez, A.: Constraining Λ CDM with galaxy clustering measurements, invited talk, Science Week of the ORIGINS Excellence Cluster, Garching, Germany, December 2019.

Sanchez, A.: Cosmology & LSS at MPE, invited talk, Cambridge - LMU Cosmology Meeting, Munich, Germany, April 2019.

Sanchez, A.: The information content of LSS measure-

- ments, invited talk, Mock Cordoba Conference, Cordoba, Argentina, April 2019.
- Sanchez, A.: Baryon acoustic oscillations and redshift-space distortions, colloquium, Pontificia Universidad Catolica de Chile, Santiago, Chile, January 2019.
- Sanchez, A.: The information content of anisotropic clustering measurements, invited talk, Munich Extragalactic Anniversaries Conference, Kloster Seeon, Germany, July 2019.
- Sanders, J.S.: Galaxy cluster observations: structure and dynamics of the intracluster medium, invited talk, Astrophysics of Hot Plasma in Extended X-ray Sources, Madrid, Spain, June 2019.
- Sanders, J.S.: Studying the physics of clusters of galaxies using X-ray observations, invited talk, X-ray Astronomy 2019, Bologna, Italy, September 2019.
- Schruba, A.: High Resolution Census of the Baryon Cycle in Nearby Galaxies, colloquium, Joint University and Observatory Colloquium, Geneva, Switzerland, September 2019.
- Schruba, A.: Physics, Chemistry and Star Formation of Molecular Clouds, invited talk, Zoom-in and out: From the ISM to Large Scale Structure, Stockholm, Sweden, June 2019.
- Schruba, A.: Surveying the Cloud-scale Star Formation Process across the Nearby Galaxy Population, colloquium, Chalmers Astronomy Colloquium, Gothenburg, Sweden, October 2019.
- Schruba, A.: The Cloud-scale Baryon Cycle of Nearby Galaxies, contributed talk, Views on the Interstellar Medium in Galaxies in the ALMA Area, Bologna, Italy, September 2019.
- Schruba, A.: The Multi-wavelength View of Nearby Galaxies from Cloud to Galaxy Scales, colloquium, Cosmic Origins Seminar, Gothenburg, Sweden, October 2019.
- Schönfelder, V.: Die geschichtliche Entwicklung des Compton Teleskops, invited talk, Compton Kameras in der Medizin, Jena, Germany, August 2019.
- Seitz, S.: Forever young and exciting: 20 years of gravitational lensing at USM, invited talk, Munich Extragalactic Anniversaries Conference, Kloster Seeon, Germany, July 2019.
- Shangguan, J.: BLR Modeling from Near-IR Interferometry, and the Hot Dust Size - AGN Luminosity Relation, contributed talk, Mapping Central Regions of Active Galactic Nuclei, Guilin, China, September 2019.
- Shangguan, J.: GRAVITY Near-Infrared Interferometry and High Spatial Resolution AGN Science, colloquium, The National Astronomical Observatories of the Chinese Academy of Sciences, Beijing, China, September 2019.
- Shingledecker, C.N.: A Tour of the Molecular Universe, colloquium, Old Dominion University, Norfolk, USA, October 2019.
- Shingledecker, C.N.: Modeling Dust-grain Ice Mantles in the JWST Era, colloquium, NRAO/UVa Colloquium, Charlottesville, USA, October 2019.
- Shingledecker, C.N.: Astrochemistry: A story of how molecules are made and destroyed space, colloquium, Institute for Theoretical Chemistry: University of Stuttgart, Stuttgart, Germany, March 2019.
- Shingledecker, C.N.: Interstellar PAHs: A View from 30,000 ft, invited talk, GOTHAM Team Meeting, Green Bank, USA, October 2019.
- Shingledecker, C.N.: New Frontiers in Astrochemical Modeling, colloquium, INAF-Osservatorio Astrofisico di Arcetri, Florence, Italy, September 2019.
- Shingledecker, C.N.: Simulating Ion-Irradiation Experiments Using Astrochemical Models, contributed talk, From Nanometers to Megaparsecs: A Symposium in Honor of John Black, Gothenburg, Sweden, June 2019.
- Silsbee, K.: Cosmic Rays in Molecular Clouds: Transport Models and Observational Constraints, contributed talk, The Self-Organized Star Formation Process, Orsay, France, October, 2019.
- Sipilä, O.: Modeling deuterium chemistry in dense cores: full scrambling versus proton hop, contributed talk, Astrochemistry: From nanometers to megaparsecs, Gothenburg, Sweden, June 2019.
- Spezzano, S.: The power of molecular spectroscopy in Astrophysics, colloquium, OPINAS Seminar, Max Planck Institute for Extraterrestrial Physics, Garching, Germany, 22/7/2019.
- Spezzano, S.: The quest for complex organic molecules in the interstellar medium: the role of laboratory spectroscopy, colloquium, Institute Seminar, Department of chemistry "G. Ciamician", University of Bologna, Bologna, Italy, October 2019.
- Straub, O.: GRAVITY: GR in the Galactic Centre, invited talk, RAGtime 21, Opava, Czech Republic, September 2019.
- Straub, O.: General Relativity with GRAVITY/VLT, invited talk, EPS 2019 European Physical Society Conference, Rome, Italy, February 2019.
- Straub, O.: Observational signatures of strong gravity in accretion discs, invited talk, 689. WE-Heraeus-Seminar on "Accretion in strong gravity", Bad-Honnef, Germany, February 2019.
- Straub, O.: Woher kommen die radioaktiven Elemente?, public talk, Marie Curie: television documentary for children, Broadcast: 12.01.2020 at KiKa (ARD/ZDF) and online, Paris/Munich, France/Germany, October 2019.
- Sturm, E.: Extragalactic Molecular Outflows and Feedback, invited talk, Herschel Ten Years After Launch: Science and Celebration, ESA/ESAC, Villafranca del Castillo, Spain, May 2019.
- Sturm, E.: Resolving AGN central engines with GRAVITY, invited talk, Mapping Central Regions of Active Galactic Nuclei, Guilin, China, September 2019.

Sturm, E.: Resolving AGN central engines with GRAVITY, colloquium, Thirty Minute Talk (TMT) Institute Seminar, ESO Vitacura, Chile, July 2019.

Sturm, E.: The core of the matter - spatially resolving the nuclei of Active Galaxies with VLTI/GRAVITY, colloquium, Institute Seminar, Erlangen Center for Astroparticle Physics (ECAP), Germany, December 2019.

Sturm, E.: The core of the matter - spatially resolving the nuclei of Active Galaxies with VLTI/GRAVITY, colloquium, Munich Joint Astronomy Colloquium (JAC), ESO, Garching, Germany, November 2019.

Tacconi, L.J.: How Can We Best Characterize the Cold Dense ISM Mass at $z > 1$ (or any Redshift)?, invited talk, MIAPP Workshop on Nine Billion Years of Neutral Gas Evolution, Garching, Germany, July 2019.

Tacconi, L.J.: The Early Evolution of Galactic Disks: Dense Gas & Star Formation, invited talk, Astrochemistry: from Nanometers to Megaparsecs - a Symposium in Honor of John Black, Gothenburg, Sweden, June 2019.

Tacconi, L.J.: The Evolution of Galaxies and Supermassive Black Holes: Status and Outlook with the VLT(I), contributed talk, The Very Large Telescope in 2030, Garching, Germany, June 2019.

Tacconi, L.J.: The Voyage 2050 Process, invited talk, Voyage 2050 workshop: Shaping the European Space Agency's Space Science plan for 2035-2050, Madrid, Spain, October 2019.

Tacconi, L.J.: What Causes the Increase in Velocity Dispersion at High-Redshift?, contributed talk, Cosmic Turbulence and Magnetic Fields, Cargese, France, November 2019.

Thomas, J.: Invisible Mass at all radii: orbit models of ellipticals, invited talk, Munich Extragalactic Anniversaries Conference, Kloster Seeon, Germany, July 2019.

Trümper, J.: Jürgen Schmitt's 14 Years at MPE and his Role in the ROSAT Mission, invited talk, Emertierung Prof. Dr. J. Schmitt, University Hamburg, Hamburg, Germany, March 2019.

Trümper, J.: ROSAT - A Key Project in Astronomy and Extraterrestrial Physics, invited talk, "Arne Richter Lecture" at DPG Spring meeting, Munich, Germany, March 2019.

Trümper, J.: Looking back on 57 years with Rüdiger Staubert, invited talk, Workshop "X-ray topics in Astronomy: From history to the future", IAAT Tübingen, Tübingen, Germany, April 2019.

Trümper, J.: Neutronensterne und Schwarze Löcher, invited talk, Initiativkreis Albert-Einstein-Haus, Caputh, Germany, May 2019.

Trümper, J.: The Moon and the Hoary Deep, invited talk, Memorial Symposium to Honor Riccardo Giacconi, Washington DC, USA, May 2019.

Trümper, J.: Constraining the supersaturation density equation of state by neutron star observations, invited talk, ECT Trento Workshop "The first compact star merger event", Trento, Italy, October 2019.

Trümper, J.: Lead-up from ROSAT to XMM-Newton, invited talk, XMM-Newton 20th Anniversary meeting (ESAC), Madrid, Spain, December 2019.

Übler, H.: Kinematics of $z=1-2$ star-forming galaxies with KMOS3D: intrinsic velocity dispersion, colloquium, Galaxy and Cosmology Seminar, Harvard-Smithsonian Center for Astrophysics, Cambridge, USA, December 2019.

Übler, H.: Kinematics of $z=1-2$ star-forming galaxies with KMOS3D: velocity dispersions and rotation curves, invited talk, Revolutionary Spectroscopy of Today as a Springboard to Webb, Leiden, The Netherlands, October 2019.

van Dishoeck, E.F.: Astrochemistry and quantum chemistry: a happy marriage, invited talk, Physics@Veldhoven conference, Eindhoven, Netherlands, January 2019.

van Dishoeck, E.F.: Astrochemistry on solar system scales, invited talk, From Stars to Planets II, Gothenburg, Sweden, June 2019.

van Dishoeck, E.F.: Astrochemistry: the next 40 years, invited talk, Physics and Chemistry of the ISM, Avignon, France, September 2019.

van Dishoeck, E.F.: Building blocks for life in space, public talk, Netherlands Space Organization conference, Noordwijk, Netherlands, January 2019.

van Dishoeck, E.F.: Building stars, planets and the ingredients for life in space, public talk, Traektoria Foundation, St. Petersburg, Russia, September 2019.

van Dishoeck, E.F.: Building stars, planets and the ingredients for life in space, invited talk, Kavli astrophysics symposium, Bergen, Norway, September 2019.

van Dishoeck, E.F.: Building stars, planets and the ingredients for life in space, public talk, Beijing Planetarium, Beijing, China, October 2019.

van Dishoeck, E.F.: Building stars, planets and the ingredients for life in space: the critical role of dust, invited talk, Nanoworld symposium, Marseille, France, July 2019.

van Dishoeck, E.F.: Chemistry in disks, invited talk, Planet-forming Disks workshop, Lake Como, Italy, March 2019.

van Dishoeck, E.F.: From clouds to comets, invited talk, ROSINA Lorentz Center workshop, Leiden, Netherlands, October 2019.

van Dishoeck, E.F.: How to build stars and planets?, public talk, IAU 100yr Amateur Day, Brussels, Belgium, April 2019.

van Dishoeck, E.F.: IAU Today and Tomorrow: celebrating a century of astronomy and what it brings to society, invited talk, IAU 100 yr symposium, Rome, Italy, May 2019.

van Dishoeck, E.F.: IAU Today and Tomorrow: celebrating a century of astronomy and what it brings to society, invited talk, IAU Symposium 358 on Equity, Inclusion and Diversity, Tokyo, Japan, November 2019.

van Dishoeck, E.F.: IAU Today and Tomorrow: celebrating a century of astronomy and what it brings to society, invited talk, UNOOSA conference, Regional Center for Space

Science and Technology Education, Amman, Jordan, March 2019.

van Dishoeck, E.F.: IAU Today and Tomorrow: celebrating a century of astronomy and what it brings to society, public talk, IAU 100yr symposium, Prague, Czech republic, March 2019.

van Dishoeck, E.F.: IAU100: celebrating a century of astronomy and what it brings to society, public talk, China Tianquanhu Astronomy Forum, Nanjing, China, October 2019.

van Dishoeck, E.F.: IAU@100: celebrating a century of astronomy and what it brings to society, contributed talk, Astronomische Gesellschaft, Stuttgart, Germany, September 2019.

van Dishoeck, E.F.: IAU@100: celebrating a century of astronomy and what it brings to society, public talk, Starmus Festival, Zurich, Switzerland, June 2019.

van Dishoeck, E.F.: Isotope selective photodissociation and its applications to astrophysics, invited talk, Astrochemistry: from nanometers to megaparsecs, Gothenburg, Sweden, June 2019.

van Dishoeck, E.F.: Laboratory astrophysics as key to understanding the Universe, invited talk, IAU Symposium 350 on Laboratory Astrophysics, Cambridge, UK, April 2019.

van Dishoeck, E.F.: Molecular processes between the stars, colloquium, Larmor lecture, Queen's University, Belfast, UK, December 2019.

van Dishoeck, E.F.: Molecules from clouds to disks and planets, colloquium, Institute of Astronomy, Tokyo, Japan, November 2019.

van Dishoeck, E.F.: Molecules from clouds to disks and planets, colloquium, Purple Mountain Observatory, Nanjing, China, October 2019.

van Dishoeck, E.F.: Molecules from clouds to disks and planets, invited talk, Astronomische Gesellschaft, Stuttgart, Germany, September 2019.

van Dishoeck, E.F.: Molecules from clouds to disks and planets, invited talk, Brian Mitchell symposium, Rennes, France, February 2019.

van Dishoeck, E.F.: Origin of elements and chemistry in outer space, invited talk, XXI Mendeleev congress, St. Petersburg, Russia, September 2019.

van Dishoeck, E.F.: Origin of elements in outer space, invited talk, Opening International Year of Periodic Table, Unesco, Paris, France, January 2019.

van Dishoeck, E.F.: Our origins in space, invited talk, MPIA 50 yr symposium, Heidelberg, Germany, September 2019.

van Dishoeck, E.F.: Recent results on protoplanetary disks with ALMA, colloquium, Astrophysics Department, Princeton University, Princeton, USA, May 2019.

van Dishoeck, E.F.: Where do we come from?, invited talk, 50 yr Moonlanding symposium, Bern, Switzerland, June 2019.

van Dishoeck, E.F.: Where do we come from?, public talk,

Cheltenham Science festival, Cheltenham, UK, June 2019.

van Dishoeck, E.F.: Where do we come from?, public talk, Ghana Planetarium, Accra, Ghana, May 2019.

van Dishoeck, E.F.: Where do we come from?, public talk, Space Sciences Center Abudja, Abudja, Nigeria, May 2019.

van Dishoeck, E.F.: Zooming into planet-forming zones of disks with ALMA, colloquium, Astronomy Department, Nanjing University, Nanjing, China, October 2019.

van Dishoeck, E.F.: Zooming into planet-forming zones of disks with ALMA, colloquium, Geneva Observatory, Geneva, Switzerland, October 2019.

van Dishoeck, E.F.: Zooming into planet-forming zones of disks with ALMA, colloquium, NAOC, Beijing, China, October 2019.

van Dishoeck, E.F.: Zooming into planet-forming zones of disks with ALMA, colloquium, Shanghai Observatory, Shanghai, China, October 2019.

van Dishoeck, E.F.: Zooming into planet-forming zones of disks with ALMA, colloquium, Yunnan Observatory, Kunming University, Kunming, China, October 2019.

van Dishoeck, E.F.: Zooming into planet-forming zones of disks with ALMA, public talk, Center for Advanced Studies, Munich, Germany, November 2019.

van Dishoeck, E.: IAU Today and Tomorrow: celebrating a century of astronomy and what it brings to society, invited talk, IAU 100 yr Flagship Event, Brussels, Belgium, April 2019.

van Dishoeck, E.: What have we learned about the origin of our solar system from Moon landings?, colloquium, Leiden Observatory, Leiden, Netherlands, July 2019.

von Fellenberg, S.: A detection of Sgr A* in the far infrared, contributed talk, The Galactic Center Workshop, Yokohama, Japan, November 2019.

von Fellenberg, S.: Stellar populations in the heart of our Galaxy, invited talk, The Galactic Center Workshop, Yokohama, Japan, November 2019.

von Kienlin, A.: Fermi-GBM GRBs with characteristics similar to GRB 170817A, invited talk, Ioffe Workshop on GRBs and other transient sources: 25 Years of Konus-Wind Experiment, St. Petersburg, Russia, September 2019.

von Kienlin, A.: Kollisionen von Neutronensternen, Gammablitz - Ein Augenzeuge berichtet, public talk, Abendvortrag am Simon-Marius-Gymnasium, Gunzenhausen, Germany, April 2019.

Waisberg, I.: Optical Interferometry of a Microquasar: Resolving Super-Eddington Outflows in SS 433, colloquium, IPAG, Grenoble, France, March 2019.

Waisberg, I.: SS 433: unique laboratory for accretion-jet physics and binary evolution, colloquium, Weizmann Institute, Rehovot, Israel, January 2019.

Weller, J.: Cosmology with Clusters of Galaxies, invited talk, Munich Extragalactic Anniversaries Conference, Kloster Seeon, Germany, July 2019.

Winkler, M.: Seasons in the Sun - UV stability of RNA's building blocks, contributed talk, Emergence of Life: Summer School, Regensburg, Germany, June 2019.

Wolf, J.: Searching for high-redshift AGN in the eFEDS field, contributed talk, HSC-eROSITA DE Joint Collaboration Meeting, Garching bei München, Germany, May 2019.

Wolf, J.: Searching for high-redshift Active Galactic Nuclei with eROSITA, contributed talk, ORIGINS Science Week 2019, Garching bei München, Germany, December 2019.

Wölfer, L.: Radiation-Hydrodynamical Models of X-ray Photoevaporation in Carbon Depleted Circumstellar Discs, contributed talk, Great Barriers in Planet Formation, Palm Cove, Australia, July 2019.

Zhao, B.: Protostellar Disk Formation & Fragmentation Enabled by Removal of Small Dust Grains, invited talk, ASI-AA Colloquium, Taipei, Taiwan, May 2019.

Zhao, B.: The Role of Chemistry on Non-ideal MHD Effects and Protostellar Disk Formation, invited talk, ISSI Star Formation Workshop, Bern, Switzerland, May 2019.

PhD Theses

- Behrendt, M.B.: High-Redshift Star-Forming Galaxies. Ludwig-Maximilians-Universität München 2019.
- Bolmer, J.: Gamma-ray bursts and their host galaxies - cold gas and dust in the high-redshift interstellar medium. Technische Universität München 2019.
- Häuser, M.: Radial velocity measurements for white-dwarf/brown-dwarf binarie candidates and development of an active mirror control for the 11 m Hobby-Eberly-Telescope. Ludwig Maximilians Universität München 2019.
- Übler, H.D.N.: Galaxy Kinematics during the Peak Epoch of Cosmic Star Formation. Ludwig-Maximilians-Universität München 2019.
- Waisberg, I.R.: Optical interferometry of compact objects: testing general relativity and the extremes of accretion. Ludwig Maximilians Universität München 2019.

Master Theses

- Pentaris, G.I.: Dark matter in dwarf elliptical galaxies. Ludwig-Maximilians-Universität München 2019.
- Steuer, J.: Wendelstein 1b+2b: Confirming transiting exoplanets with multiband photometry. Ludwig-Maximilians-Universität München 2019.

Bachelor Theses

- Ehrhardt, J.: Wachstum von Spiralgalaxien. Ludwig-Maximilians-Universität München 2019.
- Freitag, C.: Alter und Sterentstehungsgeschichte passiver Galaxien. Ludwig-Maximilians-Universität München 2019.
- Goepl, C.: Die Entwicklung der MBH-MBulge Korrelation mit der Rotverschiebung. Ludwig-Maximilians-Universität München 2019.
- Haacke, L.: Die Messung des Rossiter-McLaughlin Effekts im Hinblick auf die Entwicklung extrasolarer Planetensysteme. Ludwig-Maximilians-Universität München 2019.
- Hecker, A.Y.: Eine unabhängige Massenabschätzung des stellaren Schwarzen Lochs in 1A 0620-00. Technische Universität München 2019.
- Koppelt, R.: Relativistische Kalpha Emission von Akkretionsscheiben: Eigenschaften ihrer zentralen Schwarzen Loecher. Ludwig-Maximilians-Universität München 2019.
- Langlechner, P.: Characterization of exoplanet atmospheres: Atmospheric models and results. Ludwig-Maximilians-Universität München 2019.
- Paetzold, S.C.: Multi-band transit photometry: the example of the hot Jupiters TrES-3b and TrES-5b. Ludwig-Maximilians-Universität München 2019.
- Pari, O.: Die Suche nach Exoplaneten mit der Radialgeschwindigkeitsmethode und Eigenschaften von Exoplaneten. Ludwig-Maximilians-Universität München 2019.
- Reiss, M.E.B.: Die IMF in elliptischen Galaxien: Forschung in den vergangenen zehn Jahren. Ludwig-Maximilians-Universität München 2019.
- Schmidt, M.: Eigenschaften eines Echelle-Spektrometers fuer die Radialgeschwindigkeitsmethode. Ludwig-Maximilians-Universität München 2019.
- Seebass, D.: Phasen der Panetenentstehung und deren Gasumgebung. Ludwig-Maximilians-Universität München 2019.
- Vogl, D.: Planeten um entwickelte Sterne. Ludwig-Maximilians-Universität München 2019.