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Publications

6 1st-author, 51 ref'd (+11 subm.), 2,600+ citations, h-index=27, ORCID: 0000-0002-2875-917X

[*Legend: * means not peer-reviewed or ongoing review process*]

· **[**64*] Piaulet-Ghorayeb** et al., "A window for water-hydrogen demixing on metal-rich warm sub-Neptunes" (2025, submitted to ApJ)

· **[**63*]** Kubyshkina, Egger & **Piaulet-Ghorayeb**, "Escape of Water- and Metal-enriched Atmospheres from compact Hot mini-Neptunes with CHAIN" (2025, submitted to A&A)

· **[**62*]** Lamontagne, P., **et al. (incl. Piaulet-Ghorayeb)**, "NIRPS tightens the mass estimate of GJ 3090 b and detects a planet near the stellar rotation period" (2025, submitted to A&A)

· **[**61*]** Frensch, Y., **et al. (incl. Piaulet-Ghorayeb)**, "TOI-3288 b and TOI-4666 b: two gas giants transiting low-mass stars characterised by NIRPS" (2025, submitted to A&A)

· **[**60*]** Splinter, J., **et al. (incl. Piaulet-Ghorayeb)**, "Precise Constraints on the Energy Budget of WASP-121 b from its JWST NIRISS/SOSS Phase Curve" (2025, submitted to AAS Journals, arXiv:2509.09760)

· **[**59*] Piaulet-Ghorayeb**, "STCTM: a forward modeling and retrieval framework for stellar contamination and stellar spectra" (2025, submitted to JOSS, arXiv:2508.19297)

· **[**58*]** Pelletier, S., **et al. (incl. Piaulet-Ghorayeb)**, "Enriched volatiles and refractories but deficient titanium on the dayside atmosphere of WASP-121b revealed by JWST/NIRISS" (2025, submitted to A&A, arXiv:2508.18341)

· **[**57*]** Xue, Q., **et al. (incl. Piaulet-Ghorayeb)**, "The JWST Rocky Worlds DDT Program reveals GJ 3929b to likely be a bare rock" (2025, submitted to AAS Journals, arXiv:2508.12516)

· **[**56*]** Feinstein, A., **et al. (incl. Piaulet-Ghorayeb)**, "On Linking Planet Formation Models, Protoplanetary Disk Properties, and Mature Gas Giant Exoplanet Atmospheres" (2025, submitted to AAS Journals, arXiv:2506.00669)

· **[**55*]** Crossfield, I., **et al. (incl. Piaulet-Ghorayeb)**, "Mapping the SO2 shoreline in gas giant exoplanets" (2025, submitted to AAS Journals, arXiv:2509.14318)

· **[**54*]** Benneke, B., Roy, P.-A., **Piaulet, C.**, et al., "JWST NIRSpec Reconnaissance Transmission Spectroscopy of the Habitable-zone Exo-Earth TRAPPIST-1g" (2024, submitted to **Nature**)

· **[*53*]** Allart, R., **et al. (incl. Piaulet-Ghorayeb)**, "A complex structure of escaping helium spanning more than half the orbit of the ultra-hot Jupiter WASP-121 b" (2025, accepted in **Nature Communications**)

· **[*52*]** Parc, L., **et al. (incl. Piaulet-Ghorayeb)**, "NIRPS and TESS reveal a peculiar system around the M dwarf TOI-756: A transiting sub-Neptune and a cold eccentric giant" (2025, accepted in **A&A**)

· **[*51*]** Brady, M., **et al. (incl. Piaulet-Ghorayeb)**, "An Earth-like Density for the Temperate Earth-sized Planet GJ 12b" (2025, accepted for publication in AJ, arXiv:2506.20561)

· **[50]** Coulombe, L.-P., Benneke, B., Krissansen-Totton, J., L'Heureux, A., **Piaulet-Ghorayeb, C.**, et al., "Tentative evidence for the presence of volatiles on the warm super-Earth TOI-270 b" (2025, AJ, 170, 4, 226)

· **[49]** Bazinet, L., **et al. (incl. Piaulet-Ghorayeb)**, "Quantifying thermal water dissociation in the dayside photosphere of WASP-121 b using NIRPS" (2025, accepted in A&A, arXiv:2508.06626)

· **[48]** Krishnamurthy, V., Carteret, Y., **Piaulet-Ghorayeb**, et al., "Continuous helium absorption from the leading and trailing tails of WASP-107b" (2025, accepted to **Nature Astronomy**, arXiv: 2505.20588)

· **[47]** Cadieux, C., L'Heureux, A., **Piaulet-Ghorayeb**, et al., "Detailed Architecture of the L 98-59 System and Confirmation of a Fifth Planet in the Habitable Zone" (2025, AJ, 170, 154)

· **[46] Piaulet-Ghorayeb**, et al., "Strict Limits on Potential Secondary Atmospheres on the Temperate Rocky Exo-Earth TRAPPIST-1 d" (2025, ApJ, 989, 181)

· **[45]** Luque, R., **Piaulet-Ghorayeb**, et al., "Insufficient evidence for DMS and DMDS in the atmosphere of K2-18 b: From a joint analysis of JWST NIRISS, NIRSpec, and MIRI observations" (2025, A&A, 700, A284)

· **[44]** Gomes da Silva, J., **et al. (incl. Piaulet-Ghorayeb)**, "Blind search for activity-sensitive lines in the near-infrared using HARPS and NIRPS observations of Proxima and Gl 581" (2025, A&A, 700, A177)

· **[43]** Suarez Mascareño, A., **et al. (incl. Piaulet-Ghorayeb)**, "Diving into the planetary system of Proxima with NIRPS: Breaking the metre per second barrier in the infrared" (2025, A&A, 700, A11)

· **[42]** Bouchy, F., **et al. (incl. Piaulet-Ghorayeb)**, "NIRPS joining HARPS at ESO 3.6 m: On-sky performance and science objectives" (2025, A&A, 700, A10)

· **[41]** Vaulato, V., **et al. (incl. Piaulet-Ghorayeb)**, "Hydride ion continuum hides absorption signatures in the NIRPS near-infrared transmission spectrum of the ultra-hot gas giant WASP-189b" (2025, A&A, 700, A9)

· **[40]** Allart, R., **et al. (incl. Piaulet-Ghorayeb)**, "NIRPS detection of delayed atmospheric escape from the warm and misaligned Saturn-mass exoplanet WASP-69 b" (2025, A&A, 700, A7)

· **[39]** Taylor, J., **et al. (incl. Piaulet-Ghorayeb)**, "JWST NIRISS transmission spectroscopy of the super-Earth GJ 357b, a favourable target for atmospheric retention" (2025, MNRAS, 540, pp. 3677-3692)

· **[38]** Fournier-Tondreau, M., **et al. (incl. Piaulet-Ghorayeb)**, "Transmission spectroscopy of WASP-52 b with JWST NIRISS: water and helium atmospheric absorption, alongside prominent star-spot crossings" (2025, MNRAS, 539, pp. 422-438)

· **[37]** Ahrer, E.-M., Radica, M., **Piaulet-Ghorayeb**, et al., "Escaping Helium and a Highly Muted Spectrum Suggest a Metal-enriched Atmosphere on Sub-Neptune GJ 3090 b from JWST Transit Spectroscopy" (2025, ApJL, 985, L10)

· **[36]** Morel, K., **et al. (incl. Piaulet-Ghorayeb)**, "A Moderate Albedo from Reflecting Aerosols on the Dayside of WASP-80 b Revealed by JWST/NIRISS Eclipse Spectroscopy" (2025, AJ, 169, 277)

· **[35]** Monaghan, C., **et al. (incl. Piaulet-Ghorayeb)**, "Low 4.5 μm Dayside Emission Disfavors a Dark Bare-rock Scenario for the Hot Super-Earth TOI-431 b" (2025, AJ, 169, 239)

· **[34]** Radica, M, **Piaulet-Ghorayeb, C.**, et al., "Promise and Peril: Stellar Contamination and Strict Limits on the Atmosphere Composition of TRAPPIST-1c from JWST NIRISS Transmission Spectra" (2025, ApJL, 979, L5)

· **[32] Piaulet-Ghorayeb, C.**, et al., "JWST/NIRISS reveals the water-rich "steam world" atmosphere of GJ 9827 d" (2024, ApJL, 974, L10)

· **[31]** Bell, T., **et al.** (**Piaulet: Tier 3**), "Nightside clouds and disequilibrium chemistry on the hot Jupiter WASP-43b" (2023, **Nature Astro.**, 8, 879-898, Volume 8, p. 879-898)

· **[30] JWST TRAPPIST-1 Community Initiative (incl. Piaulet)**, "A roadmap to the efficient and robust characterization of temperate terrestrial planet atmospheres with JWST" (2024, **Nature Astro.**, 8, 810-818)

· **[29]** Cadieux, C. **et al. (incl. Piaulet-Ghorayeb)**, "Transmission Spectroscopy of the Habitable Zone Exoplanet LHS 1140 b with JWST/NIRISS" (2024, ApJL, 970, L2)

· **[**28*]** Artigau, E. and **NIRPS Consortium (incl. Piaulet)**, "NIRPS first light and early science: breaking the 1 m/s RV precision barrier at infrared wavelengths" (2024, SPIE Proceedings, arXiv:2406.08304)

· **[**27*]** Benneke, B., Roy, P.-A., Coulombe, L.-P., Radica, M., **Piaulet, C.**, et al., "JWST Reveals CH_4, CO_2, and H_2O in a Metal-rich Miscible Atmosphere on a Two-Earth-Radius Exoplanet" (2024, submitted to ApJL, arXiv: 2403.03325)

· **[26]** Fournier-Tondreau, M., MacDonald, R.J., Radica, M., Lafrenière, D., Welbanks, L., **Piaulet, C.**, et al., "Near-Infrared Transmission Spectroscopy of HAT-P-18 b with NIRISS: Disentangling Planetary and Stellar Features in the Era of JWST" (2024, MNRAS, 528, 3354)

· **[25]** Howard, W. S., **et al. (incl. Piaulet)**, "Characterizing the Near-Infrared Spectra of flares from TRAPPIST-1 during JWST Transit Spectroscopy Observations" (2023, ApJ, 959, 64)

· **[24]** Lim, O., Benneke, B., Doyon, R., Macdonald, R. J., **Piaulet, C.**, et al., "Atmospheric Reconnaissance of TRAPPIST-1 b with JWST/NIRISS: Evidence for Strong Stellar Contamination in the Transmission Spectra" (2023, ApJL, 955, L22)

· **[23]** Roy, P.-A., Benneke, B., **Piaulet, C.**, et al., "Water absorption in the transmission spectrum of the water-world candidate GJ 9827 d" (2023, ApJL, 954, L52)

· **[22]** Coulombe, L.-P., **et al. (Piaulet: Tier 3)**, "A broadband thermal emission spectrum of the ultra-hot Jupiter WASP-18b" (2023, **Nature**, 620, 292)

· **[21]** Albert, L., **et al. (incl. Piaulet)**, "The Near Infrared Imager and Slitless Spectrograph for the James Webb Space Telescope – III. Single Object Slitless Spectroscopy" (2023, PASP, 135, 075001)

· **[20]** Peterson, M., Benneke, B., Collins, K., **Piaulet, C.**, et al., "A temperate Earth-sized planet with tidal heating transiting an M6 star" (2023, **Nature**, 617, 701) ***Note: Benneke & Piaulet lead authors after M. Peterson left the field in 2021.***

· **[19]** Feinstein, A., **et al. (Piaulet: Tier 3)**, "Early Release Science of the exoplanet WASP-39b with NIRISS-SOSS" (2023, **Nature** 614, 670–675)

· **[18]** Ahrer, E.-M., **et al. (Piaulet: Tier 3)**, "Early Release Science of the exoplanet WASP-39b with JWST NIRCam" (2023, **Nature** 614, 653–658)

· **[17]** Alderson, L., **et al. (Piaulet: Tier 3)**, "Early Release Science of the exoplanet WASP-39b with JWST NIRSpec G395H" (2023, **Nature** 614, 664–669)

· **[16]** Rustamkulov, Z., **et al. (Piaulet: Top Tier 1/4)**, "Early Release Science of the exoplanet WASP-39b with JWST NIRSpec PRISM" (2023, **Nature** 614, 659–663)

· **[15] The JWST Transiting Exoplanet Community Early Release Science Team**, "Identification of carbon dioxide in an exoplanet atmosphere" (2023, **Nature** 614, 649–652)

· **[14] Piaulet, C.**, et al. "Evidence for the volatile-rich composition of a 1.5-Earth-radius planet" (2023, **Nature Astro.** 7, 206–222)

· **[13]** Roy, P.-A., Benneke, B., **Piaulet, C.**, et al., "Is the Hot, Dense Sub-Neptune TOI-824 b an Exposed Neptune Mantle? Spitzer Detection of the Hot Dayside and Reanalysis of the Interior Composition" (2022, ApJ, 941, 89)

· **[12]** Bell, T., **et al. (incl. Piaulet: Tier 2)**, "Eureka!: An End-to-End Pipeline for JWST Time-Series Observations" (2022, JOSS, 7, 4503)

· **[11]** Radica, M., **et al. (incl. Piaulet)**, "APPLESOSS: A Producer of ProfiLEs for SOSS. Application to the NIRISS SOSS Mode" (2022, PASP, 134, 104502)

· **[10]** Darveau-Bernier, A., **et. al. (incl. Piaulet)**, "ATOCA: an Algorithm to Treat Order Contamination. Application to the NIRISS SOSS Mode" (2022, PASP, 134, 094502)

· **[9]** Morris, B. M., Heng, K., Jones, K., **Piaulet, C.**, et al., "Physically-motivated basis functions for temperature maps of exoplanets" (2022, A&A, 660, A123)

· **[8]** Zeng, L., Jacobsen, S. B., Hyung, E., Levi, A., Nava, C., Kirk, J., **Piaulet, C.**, et al., "New Perspectives on the Exoplanet Radius Gap from a Mathematica Tool and Visualized Water Equation of State" (2021, ApJ, 923, 247)

· **[7]** Pelletier, S., Benneke, B., Darveau-Bernier, A., Boucher, A., Cook, N. J., **Piaulet, C.**, et al., "Where Is the Water? Jupiter-like C/H Ratio but Strong H2O Depletion Found on τ Boötis b Using SPIRou" (2021, AJ, 162, 73)

· **[6] Piaulet, C.**, et al., "WASP-107b's density is even lower: a case study for the physics of planetary gas envelope accretion and orbital migration" (2021, AJ, 161, 70)

· **[5]** Kosiarek, M., Berardo, David A., Crossfield, I. J. M., Laguna, C., **Piaulet, C.**, et al., "Physical Parameters of the Multi-Planet Systems HD 106315 and GJ 9827" (2021, AJ, 161, 47)

· **[4]** St-Louis, L., **Piaulet, C.**, et al., "An extensive spectroscopic time series of three Wolf-Rayet stars - II. A search for wind asymmetries in the dust-forming WC7 binary WR137" (2020, MNRAS, 497, 4448)

· **[3]** Benneke, B., Wong, I., **Piaulet, C.**, et al., "Water Vapor and Clouds on the Habitable-zone Sub-Neptune Exoplanet K2-18b" (2019, ApJL, 887, L14)

· **[2]** Ramiaramanantsoa, T. **et al. (incl. Piaulet)**, "BRITE-Constellation high-precision time-dependent photometry of the early-O-type supergiant ζ Puppis unveils the photospheric drivers of its small- and large-scale wind structures" (2018, MNRAS, 473, 5532)

· **[*1] Piaulet, C.**, Mochizuki, K., Arguin, J.-F., "Improvement of the multivariate analysis method for the reduction of electron charge misidentification in ATLAS data" (2017, ATL-COM-PHYS-2017-1539)