



ACTIVITY REPORT

Quarter 1, 2024



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Peer-Reviewed Publications (only in press or published)

1. Agrusa, HF, Y Zhang, DC Richardson, P Pravec, **M Čuk** et al. (2024). "[Direct N-body Simulations of Satellite Formation around Small Asteroids: Insights from DART's Encounter with the Didymos System](#)," *Planetary Science Journal*, 5, 54.
2. Almenara, J. M., Bonfils, X., Bryant, E. M., Jordán, A., Hébrard, G., et al., including **Kostov, V. B.** (2024). "[TOI-4860 b, a short-period giant planet transiting an M3.5 dwarf](#)," *Astronomy and Astrophysics*, **683**, A166.
3. **Annex A.** and B. Ehlmann (2024). "[Elevation anomalies of the volcanic floor unit and their relationships to the multiple lakes of Jezero crater, Mars](#)," *GRL*.
4. Bajaj, N. S. Pascucci, I., **Gorti, U.** et al, "[JWST MIRI MRS Observations of T Cha: Discovery of a Spatially Resolved Disk Wind](#)," *The Astronomical Journal*, vol. 167, no. 3, *IOP*, 2024.
5. Beard, C., Robertson, P., Dai, F., Holcomb, R., Lubin, J., et al., including **Dalba, P. A.** (2024). "[The TESS-Keck Survey. XVII. Precise Mass Measurements in a Young, High-multiplicity Transiting Planet System Using Radial Velocities and Transit Timing Variations](#)," *The Astronomical Journal*, **167**, 70.
6. Beck T and **P Jenniskens** (2024). "[August delta-Capricornids 2022 observations by CAMS](#)," *JIMO* 51, 160–165.
7. Berne, O. et al, including **Ricca, A.**, (2024). "[A far-ultraviolet-driven photoevaporation flow observed in a protoplanetary disk](#)," *Science*, 383, 988.
8. Bieryla, A., Zhou, G., García-Mejía, J., Fairnington, T. R., Latham, D. W., et al., including **Twicken, J. D.** (2024). "[TOI-4641b: an aligned warm Jupiter orbiting a bright \(V=7.5\) rapidly rotating F-star](#)," *Monthly Notices of the Royal Astronomical Society*, **527**, 10955-10964.
9. Birch, S.P.D., and **Umurhan, O.M.** (2024). "[Retention of CO ice and gas within 486958 Arrokoth](#)," *Icarus*, 413, 116027.
10. Blake, D. F., Walroth, R. C., Bristow, T. F., Sarrazin, P., Gailhanou, et al., including **Marchis, F.** (2024). "[Astrobiological applications of \$\mu\$ -mapping X-ray fluorescence spectrometry](#)," *International Journal of Astrobiology*, 23, 8.
11. Bockelée-Morvan, D, E Lellouch, including **MR Showalter** (2024). "[Composition and thermal properties of Ganymede's surface from JWST/NIRSpec and MIRI observations](#)," *Astronomy & Astrophysics* 681, A27, 35 pp.
12. **Bonaccorsi R**, Glass B, Moreno-Paz, M., García-Villadangos M, **Warren-Rhodes K.**, Parro V, Manchado J M, Wilhelm, M-B & McKay, CP (2023). "[In-situ Real-time Monitoring for Aseptic Drilling: Lessons Learned from the ARADS field Contamination Control Strategy and Implementation](#)," *Astrobiology* 23(12):1303-1336.

13. **Bonaccorsi R et al.** (2024). "[Correction to: Astrobiology 2023;23\(12\):1303-1336](#)," *Astrobiology* 24(3).
14. Cabrales, B., Davenport, J. R. A., **Sheikh, S.**, Croft, S., **Siemion, A. P. V.**, **Giles, D.**, **Cody, A. M.** (2024). "[Searching the SN 1987A SETI Ellipsoid with TESS](#)," *The Astronomical Journal*, 167, 101.
15. Capistrant, B. K., Soares-Furtado, M., Vanderburg, A., Jankowski, A., Mann, A. W., et al., including **Twicken, J. D.**, **Wohler, B.** (2024). "[TESS Hunt for Young and Maturing Exoplanets \(THYME\). XI. An Earth-sized Planet Orbiting a Nearby, Solar-like Host in the 400 Myr Ursa Major Moving Group](#)," *The Astronomical Journal*, 167, 54.
16. Carleo, I., Malavolta, L., Desidera, S., Nardiello, D., Wang, S., et al., including **Wohler, B.** (2024). "[The GAPS program at TNG. L. TOI-4515 b: An eccentric warm Jupiter orbiting a 1.2 Gyr-old G-star](#)," *Astronomy and Astrophysics*, 682, A135.
17. Crawford I & **D Schulze-Makuch.** (2024). "[Is the apparent absence of extraterrestrial technological civilizations down to the Zoo Hypothesis or nothing?](#)" *Nature Astronomy* 8: 44-49.
18. Crotts, K. A., Matthews, B. C., Duchêne, G., **Esposito, T. M.**, Dong, R., et al., including Kalas, P. (2024). "[A Uniform Analysis of Debris Disks with the Gemini Planet Imager. I. An Empirical Search for Perturbations from Planetary Companions in Polarized Light Images](#)," *The Astrophysical Journal*, 961, 245.
19. **Čuk, M** & AR Rhoden (2024). "[Mimas's surprise ocean prompts an update of the rule book for moons](#)," *Nature*, 626, 263.
20. **Čuk, M**, M El Moutamid, G Lari, M Neveu, F Nimmo, B Noyelles, AR Rhoden & M Saillenfest (2024). "[Long-Term Evolution of the Saturnian System](#)," *Space Science Reviews*, 220, 20.
21. **Dalba, P. A.**, Kane, S. R., Isaacson, H., Fulton, B., Howard, A. W., et al. (2024). [Giant Outer Transiting Exoplanet Mass \(GOT 'EM\) Survey. IV. Long-term Doppler Spectroscopy for 11 Stars Thought to Host Cool Giant Exoplanets](#), *The Astrophysical Journal Supplement Series*, **271**, 16.
22. de Barros, A.L.F., **Ricca, A.**, Bychkova, A., et al. (2024), "[Heavy ion radiolysis of the chiral terpene-a-pinene](#)," *MNRAS*.
23. Ďurech, J., Vokrouhlický, D., Pravec, P., Krugly, Y., Polishook, D., et al., including **Marchis, F.** (2024). "[Secular change in the spin states of asteroids due to radiation and gravitation torques. New detections and updates of the YORP effect](#)," *Astronomy and Astrophysics*, **682**, A93.
24. Glass BJ, Bergman D, Parro V et al. including **K Warren-Rhodes** & **R Bonaccorsi** (2023). "[The Atacama Rover Astrobiology Drilling Studies \(ARADS\) Project](#), *Astrobiology* 23(12): 1245-1258.

25. Hedman MM, **Tiscareno MS**, **Showalter MR**, Fletcher LN, King ORT, et al., including **Cartwright RJ** (2024). "[Water-ice dominated spectra of Saturn's rings and small moons from JWST](#)," *J. Geophys. Res.* **129**, e2023JE008236.
26. **Hinson, D** & J Wilson (2024). "[Dust-storm forcing of Rossby waves on Mars](#)," *Icarus*, **412**, 115998.
27. Hom, J., Patience, J., Chen, C. H., Duchêne, G., Mazoyer, J., et al., including **Esposito, T. M.**, **Kalas, P.**, **Marchis, F.** (2024). "[A uniform analysis of debris discs with the Gemini Planet Imager II: constraints on dust density distribution using empirically informed scattering phase functions](#)," *Monthly Notices of the Royal Astronomical Society*, **528**, 6959-6984.
28. Householder, A., Weiss, L. M., Owen, J. E., Isaacson, H., Howard, A. W., et al., including **Dalba, P.** (2024). "[Investigating the Atmospheric Mass Loss of the Kepler-105 Planets Straddling the Radius Gap](#)," *The Astronomical Journal*, **167**, 84.
29. **Jenniskens P**, **Pilorz S**, Vaubaillon J., Moskovitz N., Johannink C., et al. (2024). "[The lifetime of cm-sized zodiacal dust from the dynamical and physical evolution of meteoroid streams](#)," *Icarus* **415**, id. 116034.
30. Jewell, Anya ; **Tremblay, Chenoa** ; Sjouwerman, Lorant (2024). "[Investigating Astrophysical Features Associated with Masers in the Andromeda Galaxy](#)," 243rd Meeting of the American Astronomical Society, id. 252.01. *Bulletin of the American Astronomical Society*, Vol. 56, No. 2 e-id 2024n2i252p01 February 2024.
31. Jones, M. I., Reinarz, Y., Brahm, R., Tala Pinto, M., Eberhardt, J., et al., including **Caldwell, D. A.** (2024), "[A long-period transiting substellar companion in the super-Jupiters to brown dwarfs mass regime and a prototypical warm-Jupiter detected by TESS](#)," *Astronomy and Astrophysics*, **683**, A192.
32. Joshi, Param ; Medina, Alex ; Earwicker, Joel T. ; **Farah, W.** ; **Gajjar, V.** , **Sheikh, S. V.**, "[Wideband detection of FRB 20240114A above 2 GHz with the Allen Telescope Array](#)," *The Astronomer's Telegram*, No. 16599.
33. Kaplan, HH, DE Stillman, R Hoover, TI Michaels, **L Fenton**, KM Primm (2023). "[Visible and near-infrared spectral properties of Martian slope streaks](#)," *The Planetary Science Journal*, **4**(12).
34. Magliano, C., Covone, G., Nascimbeni, V., Inno, L., Vines, J. I., **Kostov, V.**, et al. (2024). "[PLATO on the shoulders of TESS: analysing mono-transit planet candidates in TESS data as a prior knowledge for PLATO observations](#)," *Monthly Notices of the Royal Astronomical Society*, **528**, 2851-2870.
35. Manick, R.; Sousa, A. P.; Bouvier, J.; Almenara, J. M.; Rebull, L.; et al., including **Venuti, L.** (2024). "[Long period modulation of the classical T Tauri star CI Tau: evidence for an eccentric close-in massive planet at 0.17 au](#)," *Astronomy & Astrophysics*, in press (arXiv:2403.03706).
36. Medina, Alex; **Sheikh Sofia**, **Farah Wael**, "[Probing FRB20180916B with the Allen Telescope Array](#)," 243rd Meeting of the American Astronomical Society, AAS Meeting #243, id. 359.21. *Bulletin of the American Astronomical Society*, Vol. 56, No. 2 e-id 2024n2i359p21.

37. Mantovan, G., Malavolta, L., Desidera, S., Zingales, T., Borsato, L., et al., including **Twicken, J. D.** (2024). "[The GAPS programme at TNG. XLIX. TOI-5398, the youngest compact multi-planet system composed of an inner sub-Neptune and an outer warm Saturn](#)," *Astronomy and Astrophysics*, 682, A129.
38. Pereira, C. L., Sicardy, B., Morgado, B. E., Braga-Ribas, F., Fernández-Valenzuela, E., et al., including Marchis, F. (2024). "[The two rings of \(50000\) Quaoar \(Corrigendum\)](#)," *Astronomy and Astrophysics*, **683**, C4.
39. Reeder A, E Rader & **J Bishop** (2024). "[Glass, crystallinity, and VNIR reflectance from vent to margin at Jordan Craters, OR USA](#)," *Journal of Volcanology and Geothermal Research*, 447, 108035.
40. **Ricca, A., Roser, J. E.,** Boersma, C. Peeters, E., and Maragkoudakis, A. 2024, "[Role of PAHs with Edge Defects in Explaining Astronomical Infrared Emission Observations](#)," *ApJ*, in press.
41. Partha P. Bera, **Xinchuan Huang,** Ryan C. Fortenberry, Henry F. Schaefer III & Martin Head-Gordon "[A scientific biography of Dr. Timothy J. Lee](#)," *Molecular Physics* (2024), e2313816.
42. Sellek, A. D. et al, including **Gorti, U.,** (2024). "[Modeling JWST MIRI-MRS Observations of T Cha: Mid-IR Noble Gas Emission Tracing a Dense Disk Wind](#)," *The Astronomical Journal*, vol. 167, no. 5, IOP, 2024.
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44. Spry J, B Siegel, C Bakermans, D Beaty, M Bell, J Benardini, R Bonaccorsi, S Castro-Wallace, D Coil, A Coustenis, P Doran, L Fenton, D Fidler, B Glass, S Hoffman, F Karouia, J Levine, M Lupisella, J Torres, R Mogul, K Olsson-Francis, J Martin-Torres, R Mogul, S Ortega-Ugalde, M Patel, D Pearce, M Race, et al. (2024). "[Planetary protection knowledge gap closure enabling crewed mission to Mars](#)," *Astrobiology*, 24(3).
45. Sallum, S., Ray, S., Kammerer, J., Sivaramakrishnan, A., Cooper, R., et al., including **Kalas, P.** (2024). "[The JWST Early Release Science Program for Direct Observations of Exoplanetary Systems. IV. NIRISS Aperture Masking Interferometry Performance and Lessons Learned](#)," *The Astrophysical Journal*, 963, L2.
46. Sofair, Jared; Tremblay, Chenoa; Demorest, Paul; Steffes, Lucy (2024). "[RFI Flagging with Excess Kurtosis in the COSMIC SETI Techno signature Post-Processing Pipeline](#)." In: 243rd Meeting of the American Astronomical Society, id. 159.03. *Bulletin of the American Astronomical Society*, Vol. 56, No. 2, e-id 2024n2i159p03, February 2024.
47. Stack K., L. Ives, S. Gupta, M. Lamb, M. Tebolt... including **A. Annex** (2024), "[Sedimentology and Stratigraphy of the Shenandoah Formation, Western Fan, Jezero Crater, Mars](#)," *JGR Planets*.
48. Steffes, Lucille; **Tremblay, Chenoa;** Sofair, Jared; Shynu Varghese, Savin; Ruzindana, Mark (2024). "[ARTISTIC: A New Pipeline for Radio Extraterrestrial Techno signature Searches using](#)

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49. Stillman, DE, RH Hoover, HH Kaplan, TI Michaels, **LK Fenton**, KM Primm (2024). [“Comprehensive observations and geostatistics of slope streaks within the Olympus Mons aureole,”](#) *Icarus*, 415, 116061,.
 50. Toomey, L. J.; Hobbs, G.; Price, D. C.; Dawson, J. R.; Wenger, T.; Lagoy, D. ; Staveley-Smith, L. ; Green, J. A.; Carretti, E.; Hafner, A. ; Huynh, M. ; Kaczmarek, J.; Mader, S. ; McIntyre, V. ; Reynolds, J. ; Robishaw, T.; Sarkissian, J. ; Thompson, A.; **Tremblay, C.**; Zic, A. [“SDHDF: A new file format for spectral-domain radio astronomy data,”](#) *Astronomy and Computing*, Volume 47, article id. 100804. April 2024.
 51. **Tremblay, C.D.**, Varghese, S.S. et al. [“COSMIC: An Ethernet-based Commensal, Multi-mode Digital Backend on the Karl G. Jansky Very Large Array for the Search for Extraterrestrial Intelligence,”](#) *The Astronomical Journal*, Volume 167, Issue 1, id.35, 20 pp.
 52. **Tremblay, Chenoa D.** ; Amos, Roger D. ; Kobayashi, Rika [“Analysis of Chiral Oxirane Molecules in Preparation for Next Generation Telescopes: A Review, New Analysis, & a Chiral Molecule Database,”](#) *Astronomy and Computing*, Volume 46, article id. 100791. January 2024.
 53. **Tremblay, Chenoa**; Svoboda, Brian; Armentrout, William (2024). [“Illuminating Dark Magnetism,”](#) 243rd Meeting of the American Astronomical Society, id. 156.06. *Bulletin of the American Astronomical Society*, Vol. 56, No. 2 e-id 2024n2i156p06, February 2024.
 54. Tusay, Nicholas; **Sheikh, Sofia**; Sneed, Evan; **Farah, Wael**; Wright, Jason. [“The Longest Stare at TRAPPIST-1 with the Allen Telescope Array,”](#) American Astronomical Society, AAS Meeting #243, id. 159.07. *Bulletin of the American Astronomical Society*, Vol. 56, No. 2 e-id 2024n2i159p07.
 55. **Venuti, L., Cody, A. M.**, Beccari, G., Rebull, L. M., Irwin, M. J., et al. (2024). [“Circumstellar Disk Accretion Across the Lagoon Nebula: The Influence of Environment and Stellar Mass,”](#) *The Astronomical Journal*, **167**, 120.
 56. Wilk KA, **JL Bishop**, CM Weitz, M Parente, AM Saranathan, Y Itoh, C Gross, J Flahaut & FP Seelos (2024). [“Characterization of aqueous alteration and formation of salty exposures at Ius Chasma, Mars.”](#) *Icarus*, 408, 115800.
 57. Wolfe, S, **B Lafuente**, R Keller, A Detweiler, T Bristow, M Parenteau, K Boydston, C Dateo, D Marais, L Jahnke, S Rojo, N Stone & M Vorobets (2024). [“Enabling Data Discovery with the Astrobiology Resource Metadata Standard,”](#) *Astrobiology* 24:2, 131-137.
 58. **Xinchuan Huang**, Iouli Gordon, Sergey Tashkun, David W. Schwenke, and Timothy J. Lee (2024). [“Accurate Infrared Line Lists for 20 Isotopologues of CS₂ at Room Temperature,”](#) *The Astrophysical Journal Supplement Series*, in press.

Books and Chapters of Books

Cabrol, N.A. *A l'Aube de Nouveaux Horizons*, Ed. J'ai Lu, 412 p., released April 8, 2024.

Cabrol, N. A., *The Secret Life of the Universe*, Scribner, Ed. To be published on Aug. 13 in the US and Aug. 15 in the UK.

Conferences: Abstracts and Proceedings

1. Adams, A., **Turnbull, M.**, Kane, S., Colose, C., Merrelli, A. (2024). "[Habitability in 4-D: Predicting the Climates of Earth Analogs across Rotation and Orbital Configurations](#)," *American Astronomical Society Meeting Abstracts*, 56, 401.05.
2. Andrejkovičová S, **JL Bishop**, A Maturilli, KA Wilk, H Pálková & F Rocha (2024). "[Spectral properties of ammoniated smectites under different conditions to support their detection on Ceres and other bodies](#)," *55th Lunar Planet. Sci. Conf.*, The Woodlands, TX, Abstract #1909.
3. **Annex A.**, R. G. Deen, A. Tinio, B. L. Ehlmann, J. Dickson, J. P. Grotzinger (2024). "[Version 2.0 of Mastcam Stereo Analysis and Mosaics \(MSAM\)](#)," *55th Lunar Planet. Sci. Conf.*, The Woodlands, TX, Abstract #1712.
4. **Annex A.**, R. G. Deen, J. F. Bell III, B. L. Ehlmann (2024). "Streamlining Mastcam-Z Multispectral Analysis with Pixel Disparity," *55th Lunar Planet. Sci. Conf.*, The Woodlands, TX, Abstract #1710.
5. Archinal B. and the IAU Working Group on Cartographic Coordinates and Rotational Elements (**WGCCRE**) (2024). "[Updating the Cartographic Lunar Reference Frame](#)," *55th Lunar Planet. Sci. Conf.*, The Woodlands, TX, Abstract #1696.
6. Benner, LAM, Brozovic M, Naidu NP, Giorgini JD, **Busch MW**, Pravec P (2024). "Goldstone radar observations of 99942 Apophis in 2029: Detailed plans," *Apophis T-5 Years*, Noordwijk, The Netherlands, Abstract #2061.
7. **Bishop JL**, CM Weitz, M Parente, C Gross, AM Saranathan, Y Itoh, JM Meusbürger, MRD Gruendler & M Al-Samir (2024). "[Investigating sulfate alteration on the Juventae Chasma plateau to reconstruct ancient geochemical history](#)," *55th Lunar Planet. Sci. Conf.*, The Woodlands, TX, Abstract #2343.
8. **Bishop JL**, JM Meusbürger, D Talla, M Yeşilbaş, B Schmitt, A Maturilli, TF Bristow, B Lafuente, T Hiroi & M Wildner (2024). "[Characterizing the spectral properties of FeSO₄OH - a new phase observed on Mars](#)," *55th Lunar Planet. Sci. Conf.*, The Woodlands, TX, Abstract #1880.
9. Butler N and **P Lee** (2024). "[Comparison and rating of candidate Artemis 3 landing regions on the basis of South Pole-Aitken Basin material sampling and exposed H₂O ice investigation](#)," *55th Lunar Planet. Sci. Conf.*, The Woodlands, TX/Virtual, Abstract #1403.
10. **Bonaccorsi R**, D Willson, R Gold, E Adams, A Ricca, C Cornelison, J Wiens, D Zheng, A Perez & McKay C. P. (2024). "Production of High Velocity Micron-Sized Ice Particles Using the NASA Ames Vertical Gun Range for Application to Missions to Icy Moons," *55th LPSC, March 11-15, 2023, abstract [#3040]*.
11. Boyajian, T., Christiansen, J., Crossfield, I., Fleming, B., **Marchis, F.**, et al. (2024). "The LUSTER program: Exoplanet Atmospheres from the Moon," *American Astronomical Society Meeting Abstracts*, 56, 179.04.

12. Bryson, S., Kunimoto, M., Jenkins, J., **Caldwell, D., Twicken, J., Tenenbaum, P., Wohler, B.** (2024). "Replacing the KIC for Kepler Reprocessing," *American Astronomical Society Meeting Abstracts*, 56, 421.01.
13. Bristow T, **B Lafuente**, S Wolfe, M Parenteau, N Stone, K Boydstun et al. (2024). "[A Strategy for Managing NASA'S Long-Tail of Planetary Research Data.](#)" *55th LPSC (Lunar Planetary Science Conference)*, March 11-15, 2023, abstract [#2142].
14. **Butler N, Lee P** (2024). "[Comparison and Rating of Candidate Artemis 3 Landing Regions on the Basis of South Pole-Aitken Basin Material Sampling and Exposed H2O Ice Investigation.](#)" *LPSC Meeting Abstracts* 3040, 1403.
15. **Caldwell, D.**, Jenkins, J., Martinho, M., **Striegel, S.**, Ting, E., **Twicken, J.**, Valizadegan, H. (2024) "Available Now! Light Curves and Transit Search Results from TESS Full-Frame Images," *American Astronomical Society Meeting Abstracts*, 56, 421.02.
16. Colas F, Zanda B, Égal A, Steinhäusser A, Bouley S, et al., including **P Jenniskens** (2024). "Recovery and ongoing study of the Saint-Pierre-Le-Viger meteorite, a fragment of the 2023 CX1 asteroid: An achievement of the FRIPON camera network and of the Vigie-Ciel citizen science program," *Proceedings of the International Meteor Conference*, Redu, 2023. C. Verbeek, ed., Mechelen: IMO, p. 1–5.
17. Dapremont AM, **JL Bishop**, C Wöhler, KS Wohlfarth, M Parente, RL Klima & J Flahaut (2024). "[Comparing thermally corrected spectra from the moon mineralogy mapper \(M3\).](#)" *55th Lunar Planet. Sci. Conf.*, The Woodlands, TX, Abstract #2337.
18. **Esposito, T., Sgro, L., Marchis, F.** (2024). "[Results of Rapid Photometric Transient Follow-up with the Unistellar Network of Citizen Scientists](#)," *American Astronomical Society Meeting Abstracts*, 56, 449.05.
19. Fagan, E., Majewski, S., Davidson, J., Horch, E., Wilson, R., **Kostov, V.**, Heil, A. (2024). "[Speckle Imaging and Characterization of TESS-Identified Quadruple Eclipsing Binaries](#)," *American Astronomical Society Meeting Abstracts*, 56, 305.10.
20. Fetherolf, T., Pepper, J., **Simpson, E.**, Kane, S., Mocnik, T., et al., including **Twicken, J.** (2024). "[TESS Stellar Variability Catalog \(TESS-SVC\)](#)," *American Astronomical Society Meeting Abstracts*, 56, 116.02.
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22. **Giles, D., Cody, A. M.**, Yaptangco, D. C., Tong, Y., Croft, S. (2024). "[Anomaly Detection with TESS: A Search for Megastructures and Non-Spherical Occulters](#)." *American Astronomical Society Meeting Abstracts*, 56, 356.03.
23. **Gracy S and P Lee** (2024). "[Candidate landing sites for Artemis 3 in two NASA candidate landing regions nearest the lunar South Pole.](#)" *55th Lunar Planet. Sci. Conf.*, The Woodlands, TX/Virtual, Abstract #1695.

24. **Gracy S** (2023). "Candidate landing sites within thirteen Artemis III landing regions." *Cal-Bridge Symposium*.
25. **Gracy S, Lee P** (2024). Candidate Landing Sites for Artemis 3 in Two NASA Candidate Landing Regions Nearest the Lunar South Pole. *LPSC Meeting Abstracts* **3040**, 1695.
26. **Graykowski, A., Hemmelgarn, S., Esposito, T. M., Marchis, F., Koster, D., Rivett, D., Shimizu, M.** (2024). "[Faint Comet Detection with Unistellar eVscopes](#)," *Research Notes of the American Astronomical Society*, **8**, 41.
27. **Graykowski A, Hemmelgarn S, Esposito TM, Marchis F, Koster D, Rivett D, Shimizu M** (2024). Faint Comet Detection with Unistellar eVscopes. *Research Notes of the American Astronomical Society* **8**, 41.
28. Grundy, W.M., Raposa, S.M., Engle, A.E., Tan, S., Lindberg G.E., **Umurhan, O.M.**, et al. (2024). "[Pressure Outbursts from Cooling Volatile Liquid Mixtures](#)," *Lunar and Planetary Science Conference LV*, 11-15 March, The Woodlands, TX, USA, Abst. #2092.
29. Gunn, A, L Rubanenko, M Lapôtre, R Ewing, D Jerolmack, M Chojnacki, **L Fenton**, N Bintliff, S Pérez-López, A Soto, I Smith (2024). "Aeolian sediment pathways on Mars," *Australia-New Zealand Geomorphology Group 20th Biennial Conference*, 12-16 February, Gisborne, NZ.
30. Gupta S., K. Stack, N. Mangold, L. R. W. Ives, S. Gwiz, including **A. Annex** (2024). "[Going With the Flow: Sedimentary Evolution of the Jezero Western Fan, Mars](#)," *55th Lunar Planet. Sci. Conf.*, The Woodlands, TX, Abstract #2607.
31. **Hargitai H** (2024). "[The Development of Classification Systems in Planetary Science](#)," *Planet Characterization Workshop*, Houston TX/Virtual, #2892, LPI Contrib. No. 2878.
32. **Hargitai H** and P Brož (2024). "[Morphology and distribution of Irregular Mare Patches on the Moon](#)," *55th Lunar Planet. Sci. Conf.*, The Woodlands, TX/Virtual, Abstract #1867.
33. **Hemmelgarn S, Graykowski A, Esposito T, Marchis F** (2024). "[Faint Comet Detection with Unistellar eVscopes](#)," *LPSC Meeting Abstracts* **3040**, 2047.
34. Hom, J., Patience, J., Chen, C., Duchene, G., Mazoyer, J., **Esposito, T.**, Millar-Blanchaer, M., Gpies Collaboration, Gpi-Llp Disk Team (2024). "[The Impact of High Contrast Debris Disk Imaging: Comparative and Uniform Studies of Scattered-Light Resolved Debris Disk Structure](#)," *American Astronomical Society Meeting Abstracts*, **56**, 413.02D.
35. **Hort E, Sheikh S, Farah W, Tusay N** (2024). "[SETI Search of the Anti-Solar Point Using the Allen Telescope Array](#)," *American Astronomical Society Meeting Abstracts* **56**, 109.03.
36. Huang, R.I. and **V.C. Gulick** (2024). "[Regional Studies of High Latitude Gullied Craters](#)," *55th LPSC*, #2386.
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43. **Lee P** (2024). "[Definition of a planet: Balancing science, practicality, and public perception.](#)" *Planet Characterization Workshop 2024*, 21-22 Feb 2024, Houston, TX/Virtual, Abstract #2901.
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46. **Mapaye R, Wong MH** (2023). "[Unveiling Uranus: A Difference in Dark Spots Compared to Neptune](#)," *Astronomical Society of the Pacific Conference Series #525: Compendium of Undergraduate Research in Astronomy and Space Science*, 93.
47. **Mapaye R, Wong MH** (2024). "[Unveiling Uranus: A Difference in Dark Spots Compared to Neptune](#)," *LPSC Meeting Abstracts* 3040, 2709.
48. Martinho, M., Valizadegan, H., **Caldwell, D.**, Jenkins, J., **Twicken, J.**, Bryson, S. (2024). "Probing ExoMiner for Completeness and Effectiveness on Kepler Data," *American Astronomical Society Meeting Abstracts*, 56, 421.03.
49. **Medina A, Sheikh S, Farah W** (2024). "[Probing FRB20180916B with the Allen Telescope Array](#)," *American Astronomical Society Meeting Abstracts* 56, 359.21.
50. **Medina A, Sheikh S, Farah W** (2024). "[Probing FRB20180916B with the Allen Telescope Array](#)," *Society for the Advancement of Chicano and Native American Scientists (SACNAS) Meeting Abstracts*.

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55. **Pahlevan, K.** (2024). "Retention and loss of volatile-rich atmospheres after giant impacts," *Earth and Planets Origin and Evolution Workshop*, 13-17 May, Paris, France.
56. Parekh, R., **White, O.**, **Umurhan, O.**, Pappalardo, R.T., Scully, J.E.C., Cameron, M.E., and Schenk, P. (2024). "[Modeling of Shallow Mass-Wasting Features on Europa](#)," *Lunar and Planetary Science Conference LV*, 11-15 March, The Woodlands, TX, USA, Abst. #2151.
57. Rampe E, B Sarrazin, P Blake, D Bristow, T Yen, A Downs, R Tu, K Zacny, **B Lafuente et al.** (2024). "[Advances in X-Ray Instruments to Support Mars Sample Return](#)," *55th LPSC, 55th LPSC (Lunar Planetary Science Conference), March 11-15, 2023*, abstract [#1510].
58. **Sacch F** (2023). "Enantiomeric excesses under prebiotic conditions," *National Society of Black Physicists (NSBP) Meeting Abstracts*.
59. Sarrazin P, R Hanna, **R Obbard**, N Vo, **B Lafuente B**, E Rampe et al. (2024). "[In-Situ X-Ray Computed Tomography for Lunar Exploration](#)," *55th LPSC (Lunar Planetary Science Conference), March 11-15, 2023*, the Woodlands, TX, abstract [#2591].
60. **Sheikh, S. Z.** and R. Gentile. "What does a billion-year old technological species... do?," *Poster, 2nd PSETI Symposium*, June 2023, Penn State University.
61. Seidelmann PK, Monet AB, **Tiscareno MS** (2024). "[Celestial Mechanics leading up to the Division on Dynamical Astronomy](#)," *American Astronomical Society (AAS) Meeting Abstracts* 243, 145.01.
62. Spurling, R., **Gulick, V.** and Naor, R. (2023). "[Crater-based Surface Age Dating of Osuga Valles, Mars](#)," *Compendium of Undergraduate Research in Astronomy and Space Science, ASP Conference Series*, Vol. 525.
63. **Spurling R, Gulick VC**, Naor R (2023). "[Crater-Based Age Dating of the Osuga Valles Region, Mars](#)," *12th Planetary Crater Consortium*.

64. Stillman, DE, RH Hoover, H Kaplan, TI Michaels, **LK Fenton**, KM Primm, K. M. (2024). "[Unraveling the puzzle of Mars slope streaks](#)," *Lunar and Planetary Science Conference LV*, 11-15 March, The Woodlands, TX, USA, Abst. #2033.
65. **Tremblay C.D.** AAS Talk - Illuminating Dark Magnetism, New Orleans, LA, USA, January 8th at AAS.
66. **Tremblay C.D.**, Interstellar Frontiers - All-Sky SETI with COSMIC, Perth Western Australia, March 11-14 COSMIC: All-sky techno-signature search with a commensal instrument - The search for intelligence outside our solar system is 60 years old and we have recently moved the search from 1000 objects in a 5-year observational program to over 1 million objects per year. This is made possible thanks to the new Commensal Open-Source Multimode Interferometer Cluster or COSMIC backend system on the VLA. The COSMIC compute cluster receives a copy of the VLA data streams after digitization and we are utilizing an ethernet-based system to record, channelize, correlate, and beamform the data. The initial goal of the system is to process data simultaneously along with the VLA all-sky survey (VLASS) to complete the largest, most sensitive, search for the existence of extraterrestrial intelligence (SETI). COSMIC is designed to ingest the data at any observing frequency and search with time resolutions between 0.1 to 5 seconds and frequency resolutions between 0.2 and 10 Hz for signals of unknown origin. Any potentially interesting signals will trigger small chunks of voltage data to be dumped onto the disk for further investigation. In this talk, we will discuss the history of SETI and why this system is important, system design, flexibility, initial goals, and the potential for other guest science projects proposed by the astronomy community.
67. Turner, N., MacGregor, M., **Cody, A. M.**, Burt, J., Howard, W., Huber, D., **Venuti, L.**, Espex Team (2024). "[ESPEX: the Early Star and Planet Evolution Explorer mission concept](#)," *American Astronomical Society Meeting Abstracts*, 56, 259.28.
68. **Umurhan, O.M.**, Cuzzi, J.N., Sengupta, D., and Lyra, W. (2024). "[Better Understanding Turbulence in Planet Forming Disks: A New Prescription for Future Observations](#)," *Lunar and Planetary Science Conference LV*, 11-15 March, The Woodlands, TX, USA, Abst. #2768.
69. **Tiscareno MS**, Bartlett DF, Dones L, Haghighipour N, Harris AW, et al. (2024). "[History of the Division on Dynamical Astronomy](#)," *American Astronomical Society (AAS) Meeting Abstracts* 243, 119.04.
70. Valantinas A, JF Mustard, V Chevrier, P Beck, N Mangold, A Pommerol, O Poch, R Ottersberg, **JL Bishop**, G Villanueva & N Thomas (2024). "[Ferrihydrite in dust and bedrock on Mars: 0.4-4 \$\mu\text{m}\$ spectral evidence](#)," *55th Lunar Planet. Sci. Conf.*, The Woodlands, TX, Abstract #2735.
71. Valizadegan, H., Martinho, M., Yates, C., Zhong, W., Jenkins, J., **Caldwell, D.**, **Twicken, J.**, Bryson, S. (2024). "[Classification of TESS Threshold Crossing Events Using ExoMiner++](#)," *American Astronomical Society Meeting Abstracts*, 56, 421.04.
72. **White, O.L.**, **Umurhan, O.M.**, Moore, J.M., Howard, A.D., and Schenk, P.M. (2024). "[Landform Evolution Modeling as a Means to Study Geologic Processes on the Uranian Satellites](#)," *Lunar and Planetary Science Conference LV*, 11-15 March, The Woodlands, TX, USA, Abst. #1377.

73. Wilk KA, **JL Bishop**, A Maturilli, CM Pieters & JF Mustard (2024). "[The nature of spectral hydration features nominally anhydrous minerals and applications to lunar spectra](#)," *55th Lunar Planet. Sci. Conf.*, The Woodlands, TX, Abstract #1666.
74. Yaptangco, D. C., **Cody, A. M., Giles, D.** (2024). "[Signal Injection into TESS Light Curves for Technosignature Detection](#)," *American Astronomical Society Meeting Abstracts*, 56, 109.02
75. Yeşilbaş M, **JL Bishop**, B Schmitt, D Talla, JM Meusbürger, O Poch & M Wildner (2024). "[Low-temperature reflectance spectra of szomolnokite and applications for their detection on Mars](#)," *55th Lunar Planet. Sci. Conf.*, The Woodlands, TX, Abstract #2035.
76. **Zupanska A**, E Lockwood, Y Zhang & S McDaniel (2023). "[Moss tolerance of deep space-like ionizing radiation, singular or combined with spaceflight microgravity- preparation for the BRIC-27 experiment to the ISS](#)," *ASGRS (American Society for Gravitational and Space Research) Annual Meeting, 2023*, Washington, DC.

Technical Reports & Data Releases

Bond, H. E., Jencson, J. E., Whitelock, P. A., Adams, S. M., Bally, J., **Cody, A. M.**, et al. (2024) VizieR Online Data Catalog: HST imaging and light curves of 21 SPIRITS variables (Bond+, 2022), VizieR Online Data Catalog, 192, J/ApJ/928/158.

Burke, C. J., Fausnaugh, M. M., **Caldwell, D. A.**, Jenkins, J. M., **Twicken, J., D.**, et al., including **Striegel S.** TESS Data Release Notes: https://archive.stsci.edu/tess/tess_drn.html

DRN103, Sector 73, January 25, 2024

DRN104, Multi-sector 2-72, January 25, 2024

DRN105, Sector 74, February 29, 2024

DRN106, Sector 75, March 22, 2024

Dai, F., Schlafman, K. C., Reggiani, H., Bouma, L., Howard, A. W., et al., including **Caldwell, D. A.** (2024) VizieR Online Data Catalog: BD+29 2654 equivalent Widths and line abundances (Dai+, 2023), VizieR Online Data Catalog, 516, J/AJ/166/49.

Farah, W., et al., “ATA detections of radio flares from Cyg X3” The Astronomer's Telegram, No. 16577, April 2024.

Farah, W. “Very Bright Radio Flare Observed from Cyg X-3 with the ATA” The Astronomer's Telegram, No. 16466, February 2024.

Jenniskens P. Enhanced activity of the beta-Tucanids (BTU, #108). eMeteorNews 9, (in press)

Jenniskens P. Enhanced iota-Centaurids (ICN#919) activity in 2024. eMeteorNews 9, 53–55.

Jenniskens P., Hecht L., Greshake A., Helbert J. Hamann C., (2024). Ribbeck. Meteoritical Bulletin 113 (online).

Jenniskens P (2024). Beta-Tucanids meteor shower 2024. CBET 5372. D.W.E. Green (ed.), Central Bureau for Astronomical Telegrams, 1pp.

Jenniskens P (2024). Iota Centaurid meteor shower. CBET 5347, D.W.E. Green, ed., Central Bureau for Astronomical Telegrams, 1pp.

Jenniskens P., L. Hecht, C. Hamann, A. Greshake, J. Helbert (2024).. 2024 BX_1. CBET 5343, D.W.E. Green, ed., Central Bureau for Astronomical Telegrams, 1pp.

Kagawa H Monthly and Quarterly Reports, Wyle.

MacDougall, M. G., Petigura, E. A., Gilbert, G. J., Angelo, I., Batalha, N. M., et al., including **Dalba, P. A.** (2024) VizieR Online Data Catalog: The TESS-Keck Survey. XV. 108 TESS Planets (MacDougall+, 2023), VizieR Online Data Catalog, 516, J/AJ/166/33.

Simpson, RA (2024). *Voyager 1 Jupiter Radio Occultation - Raw Data Bundle*, https://pds-rings.seti.org/pds4/bundles/voyager1_rss_jupiter_raw/, 4.4 GB.

Simpson, RA (2024). *Voyager 2 Jupiter Radio Occultation - Raw Data Bundle*, https://pds-rings.seti.org/pds4/bundles/voyager2_rss_jupiter_raw/, 6.6 GB.

Simpson, E. R., Fetherolf, T., Kane, S. R., Pepper, J., Mocnik, T., **Dalba, P. A.** (2024) VizieR Online Data Catalog: Known exoplanet hosts parameters with TESS (Simpson+, 2023), VizieR Online Data Catalog, 516, J/AJ/166/72.

Valizadegan, H., Martinho, M. J. S., Jenkins, J. M., **Caldwell, D. A.**, **Twicken, J. D.**, Bryson, S. T. (2024) VizieR Online Data Catalog: Validation of 69 exoplanets using ExoMiner V1.2 (Valizadegan+, 2023), VizieR Online Data Catalog, 516, J/AJ/166/28.

Zupanska A (Feb 14). Technical ARTEMOSSE EVT report submitted to NASA for review.

Education

Bonaccorsi R and Spurling R. March 1-3, Death Valley Dark Sky Festival Exploration fair: It is Biology or Geology? Hands-on activities at the SETI Booth
<https://www.nps.gov/deva/planyourvisit/death-valley-dark-sky-festival.htm>
<https://www.seti.org/event/death-valley-dark-sky-festival-2024>

Bonaccorsi R. (March 2), Death Valley Dark Sky Festival - ***Guided hike:*** Mars-like Places on Earth: A Journey into the Ubehebe Crater.

Bonaccorsi R. (March 2), Death Valley Dark Sky Festival – ***Public talk:*** *Astrobiology at the Ubehebe Crater (Death Valley, CA): Relevance to Earth and Mars.*"

Bonaccorsi R. (March 9). Exploring Space from Death Valley. 7- Hands-on exploration event (DVNHA).

Bonaccorsi R (ongoing). Mentoring one high school student at SETI Institute/ NASA Ames to work on Micron-Sized Ice Particles generated by the NASA Ames Vertical Gun Range impact test (Cassini Data Analysis, CDAP funded).

Gorti, U. Mentoring a community college intern, Jay Chong, from Diablo Valley College through the SETI CCI Program, and continuing to supervise thesis research of SFSU Master's student S.H. Azam.

Paganelli F., editorial reviewer and collaborator on "Journées 2023: Temps et Relativité Générale (Time and General Relativity)" Proceedings. Meeting held September 11-13, 2023, in Nice at Université Côte d'Azur and Observatoire de la Côte d'Azur, France.

Race M. (ongoing). NASA Solar System Ambassador (SSA) for 2024-26. Appointed by NASA HQ & NASA Aeronautics Research Mission Directorate STEM Integration Office.

Race M. (Feb 8). Invited lecture, Planning missions to Mars: Planetary protection, biosafety & mission concerns. Rolling Hills 4H Club, Cupertino CA mission concerns. Rolling Hills 4H Club, Cupertino CA.

Race M. (Mar 18, 27). STEM Science Fair Judge, Encinal Elementary School, Menlo Park, CA. Ongoing sharing of STEM materials and resources, with principal, classroom teachers and volunteers.

Race M. (Jan 24). Outreach and discussions with Michael Mashack of Bay Area Urban Eagles (BAUE) to reach underserved audiences with NASA Aero-Astro opportunities & STEM informal education activities-- with potential links to flight school opportunities. Outreach with Steve Mustow, Independent consultant, who's developing draft principles for Environmental Impact Assessment for extraterrestrial environments- - Focusing on anticipated growth of commercial Lunar and Mars missions and space activities beyond LEO.

Race M. (Jan 24). Outreach and meeting with NASA Astronaut Yvonne Cagle to discuss outreach to underserved Bay Area groups. Outreach to SETI Affiliate Dr. Celso Batalha, Evergreen Community College, to discuss needs for underserved high school and community college students in San Jose area.

Race M (ongoing). Mentoring students: 1) STEM mentoring of high school and college students. 2) Virtual OLLI lecture, *University of Richmond (VA)*, Astrobiology and Searches for ET Life.

Sarrazin P Hosting 3 interns at SETI to work on XTRA: development of a lunar XRD/XRF instrument to TRL-5 (DALI funded).

Schulze-Makuch D (ongoing). *Life beyond Earth*, blogs at [Life Beyond Earth | Lifeintheuniverse \(searchforlifeintheuniverse.com\)](https://lifeintheuniverse.com) and selected blogs on BigThink.com and RealClearScience.com

Sheikh SZ, Farah W, Pollak AW, Siemion APV, Chamma MA, Cruz LF, David RH, DeBoer DR, Gajjar V, Karn P, Kittling J, Lu W, Masters M, Premnath P, Schoultz S, Shumaker C, Singh G, Snodgrass M (2024). Characterization of the repeating FRB 20220912A with the Allen Telescope Array. *Mon. Not. Roy. Astron. Soc.* **527**, 10425–10439 (arXiv: 2312.07756).

Tremblay C.D.: Working on a new collaboration with the Early College Academy in Albuquerque.

Wilk KA, Bishop JL, Weitz CM, Parente M, Saranathan AM, Itoh Y, Gross C, Flahaut J, Seelos F (2024). Characterization of aqueous alteration and formation of salty exposures at Ius Chasma, Mars. *Icarus* **408**, 115800

Zupanska A (ongoing). Joined the Polish Astrobiological Society “AstroBio” <https://astrobio.pl/> with an intent to expose research at SETI to young Polish audience and connect with Polish native space researchers around the world.

Outreach

SETI Live

1. **Johnson, B, Marchis F.** What to Expect in 2024 in Space
2. **Marchis, F, Steel, S.** Unveiling the Future of Amateur Astronomy
3. **Johnson, B.** A City on Mars, guests Kelly and Zach Weinersmith
4. **Marchis, F.** Ganymede's Alien Landscape, guest Federico Tosi
5. **Steel, S., Tremblay, C.** The COSMIC Project
6. **Marchis, F.** The Mysterious Ocean of Saturn's Moon Mimas, guest Valery Lainey
7. **Marchis, F.** The Incredible Story of the Ingenuity Helicopter, guest Teddy Tzanetos
8. **Johnson, B.** Under Alien Skies, guest Phil Plait
9. **Johnson, B., Graykowski, A.** Unistellar Citizen Scientists Track Comets
10. **Johnson, B., Jenniskens, P.** Tracking Meteors and Finding Meteorites
11. **Forget, B.** SETI AIR: **Xin Liu's** Inward Expeditions
12. **Forget, B.** SETI AIR: I Can't Make You Love Me with **Brittany Nelson**
13. **Johnson, B.** Dante Lauro: The Asteroid Hunter
14. **Johnson, B.** Trappist 1's Atmospheric Erosion, guest Cecilia Garraffo
15. **Johnson, B., Marchis, F.** Unveiling the Secrets of Enceladus

SETI Shorts

1. **Johnson, B., Marchis F** What to Expect in Space in 2024: Lunar Missions
2. **Johnson, B., Marchis F** What to Expect in Space in 2024 - The Vera Rubin Observatory, LSST, and Planet 9/X
3. **Johnson, B.** How Did Kelly and Zach Weinersmith Come Up with the Idea for "A City on Mars"?
4. **Marchis, F.** What exactly did we find on Ganymede's surface? Salts and organics!
5. **Steel, S.** What can the new COSMIC project at the VLA actually find in the way of technosignatures?
6. **Marchis, F.** Saturn's moon Mimas has turned out to be another world with an icy subsurface ocean

Big Picture Science

1. Your Mind on Movies, guest Walt Hickey
2. Tech in Check, guest Brian Merchant
3. Inside Planets, guest Sabine Stanley

4. The Wrong Stuff, guest Chip Colwell
5. Alien Says What? guest Brenda McGowen, Fred Sharpe and **Laurance Doyle**
6. Lithium Valley, guests Ed Conway, Frank Ruiz and Michael McKibbin
7. Feet Don't Fail Me, guests Daniel Lieberman, Madhusudhan Venkadesan, Jeremy DeSilva, David Bustos and Sally Reynolds
8. Skeptic Check: Asteroid Mining, guests Jim Bell, Martin Elvis and Ian Lang
9. When the Moon Hits Your Eye, guest Phil Plait

Press Releases

- **Siemion, A.** [Andrew Siemion to Receive the SETI Institute's 2024 Drake Award](#)
- **Jenniskens, P.** [Heat to Blame for Space Pebble Demise](#)
- **Peluso, D.** [High School Students Contribute to Exoplanet Discovery](#)
- **Umurhan, O.** [Study Reveals Ancient Ice May Still Exist in Distant Space Objects](#)
- **Lee, P.** [Giant Volcano Discovered on Mars](#)
- [Odysseus Has a New Home and Brings the Earthling Project Along for the Ride](#)
- **Gorti, U.** [JWST Captures the End of Planet Formation](#)
- **Sheikh, S.** [SETI Institute Employs SETI Ellipsoid Technique for Searching for Signals from Distant Civilizations](#)
- [Exploring New Futures in Space: A Revolutionary Integration of Neuroscience, Quantum Physics, and Space Exploration](#)
- **Jenniskens P.** [Asteroid that impacted near Berlin identified as a rare Aubrite](#)
- [SETI Institute Welcomes Elizebeth Varghese and Erik Charlton to Board of Trustees, Bolstering Leadership in Space Exploration and Technology](#)
- [Empowering the Next Generation of Cosmic Explorers with SETI Forward](#)
- **Tremblay, C.** [COSMIC: The SETI Institute is Unlocking the Mysteries of the Universe with Breakthrough Technology at the Karl G. Jansky Very Large Array](#)

In the News

Cabrol, N.A., Jan. 12, BBC Interview, Ian Maclean

Cabrol, N.A., Jan. 25, Interview with Boris Georgelin: Le Point – Table Ronde.

Cabrol, N.A. and B.H. Diamond, Interview/Filming with the German TV show “Galileo”, Jan 24.

Cabrol, N.A., B.H. Diamond, S. Shostak, F. Marchis: Documentary film shoot – We are not alone., Feb. 2.

Ćuk M and AR Rhoden (Feb/8) *Nature News & Views* article quoted in a number of publications, including *Washington Post*, *Los Angeles Times*, *Voice of America*, *Telemundo*, *The Independent*, *The Telegraph*, *ABC* [Australia], *France24*, *Le Monde*, *The Straits Times* [Singapore].

Ćuk M [One of Saturn’s Smallest Moons Has a Secret Ocean](#), *CNN*

Diamond, B [So we find aliens. What happens next?](#) *Metro UK*

Diamond, B [The State of the Drake Equation in 2024](#), *Blue Dot Podcast*

Diamond, B [How AI is Helping the Search for Extraterrestrial Life](#), *BBC*

Diamond, B [‘It’s getting closer and closer for sure.’ How SETI is expanding its search for alien intelligence](#), *Space.com*

Esposito, T [How citizen astronomers in Silicon Valley and around the globe helped NASA track a distant, Saturn-sized world](#), *The Mercury News*

Farah, W [Radio Astronomy: Why Study It? What Can It Teach Us About Life Beyond Earth?](#) *Universe Today*

Gorti, U., Coordinated press release by SETI, U of Arizona, Cambridge University (UK) and University of Leicester (UK) on JWST observations of T Cha and resolved disk wind (paper by Bajaj et al. 2024 and Sellek et al. 2024).

Gorti, U [James Webb Space Telescope Captures the End of Planet Formation](#), *Science X*

Graykowski, A [Don’t Miss Your Chance to See the Cryovolcanic ‘Devil Comet,’](#) *Popular Science*

Harman, PK., Introduction to the SETI Institute and Astrobiology, (Jan 10) *Swan-Hellenic Diana*, Southern Ocean.

Harman, PK., The EM Spectrum, Visible & Invisible Light, and Multi-wavelength Astronomy (Jan 13) *Swan-Hellenic Diana*, Southern Ocean.

Harman, PK., Size and Scale of the Solar System (Jan19) Moon and Mars Trivia (Jan 19) *Swan-Hellenic Diana*, Drake Passage.

Harman, PK., Moon and Mars Trivia (Jan 19) *Swan-Hellenic Diana*, Drake Passage.

Jenniskens, P [Astronomers Reveal Source of Eerie ‘Zodiacal Light’ in the Sky](#), *Newsweek*

Jenniskens, P [A ‘Very Rare’ Kind of Space Rock Fell in Germany – And Scientists Recovered the Pieces](#), *Smithsonian Magazine*

Jenniskens, P [Newly Discovered Asteroid Fragments Are as Old as the Solar System](#), *Scientific American*

Jenniskens, P [Fragments of Asteroid with Mystery Origin Found Outside Berlin](#), *NY Times*

Jenniskens, P [An Asteroid Exploded Over Berlin. Then, the Treasure Hunt Began.](#) *Popular Mechanics*

Lee, P [An Everest-Sized Volcano Hiding in Plain Sight on Mars?](#) *CNN*

Lee, P [A 280-mile-long volcano may have been discovered on Mars](#), *National Geographic*

Lee, P [To Mars and Back: Will NASA's Ambitious Endeavor Be Worth It?](#) *Salon*

Lee P (Feb/13)., *My New Moon Suit*. Canadian Broadcasting Corporation short (20 min) documentary filmed at HMP-2023, Devon Island, Arctic.

<https://www.youtube.com/watch?v=kQOPQm08-bo>

Peluso, D (03/21) *High School Students Contribute to Exoplanet Discovery*, SETI Institute Press Release, <https://www.seti.org/press-release/high-school-students-contribute-exoplanet-discovery>

Steel, S., *The SETI Institute and the Search for Life in the Universe*, Swan-Hellenic SH Diana, Chile, February 26, 2024.

Steel, S., *The River of Heaven: Star Formation in the Southern Milky Way*, SH Diana, Chile, February 29, 2024.

Steel, S., *In the Wake of Europa Clipper: Exploring the Ocean Moons of the Jovian System*, SH Diana, Chile, March 1, 2024.

Steel, S., *The Clouds of Magellan*, SH Diana, Chile, March 7, 2024.

Steel, S., *Solar Eclipses: Nature's Cosmic Coincidence*, SH Diana, Chile, March 8, 2024.

Steel, S., *Help Community College instructors teach science better with the NASA Community College Network*, NASA Astrobiology SciComm Guild Monthly Meeting, March 19, 2024.

Steel, S., *Where are the Aliens? 40 Years of the SETI Institute and the search for life in the Universe*, an Interview with Simon Steel, Cupertino Public Television, March 29, 2024.

Tiscareno MS., spoke with reporter Rahul Rao about the question of whether life could exist in a planetary ring system. An article to be published at Space.com is forthcoming.

Schulze-Makuch D., Interview with J. Norling for Swedish documentary on possible alien life.

Umuran, O [Arrokoth the space snowman and other Kuiper Belt objects may be packed with ancient ice](#), *Space.com*

Invited Talks: Professional and Public

Bishop J (Mar/1). *Characterization of Changing Environments on Ancient Mars using Orbital Hyperspectral Remote Sensing*, Humboldt Colloquium "Sustainable Futures", The Westin San Francisco.

Busch MW (Feb/2, Feb/16, Feb/29). *Small Bodies In The Solar System*, virtual talks with elementary school students via Skype A Scientist. Schools in Bermuda, California, Iowa.

Cabrol, N.A. Visioconference with Clémence Prévault, French artist, February 5.

Cabrol, N.A., Q&A with the Sainte Catherine School, visioconference

Giles, D (03/28) "*A Search for Megastructures in TESS*" talk at the Penn State SETI seminar series.

Gorti, U., Invited talk at the American Physical Society 2024 Meeting in Minneapolis, March 2024, "Modeling line emission from Protoplanetary Disks", in session on Molecular Astrophysics.

Gorti, U., Invited review presentation on "Emission from FUV Heated winds", STSci meeting on HST-ULLYES Legacy Program, STSci, Baltimore, March 2024.

Lee P (Jan/14). *From Earth To Mars*. San Francisco Mensa.

Lee P (Feb/2). *N[~]1: Alone in the Milky Way*. San Mateo County Astronomical Society.

Schulze-Makuch D (Feb 10). The Search for Habitable Worlds and Life in the Universe. Invited talk at the International Online Astrobiology Conference, Yıldız Technical University, Turkey, 10-11 Feb. 2024.

Smith, J (03/4-25) Four talks: (1) *How do Astronomers Find Exoplanets?*; (2) *Yes, look up! Utilizing AI to Find Exploding Meteors and to Help Protect the Earth from Dangerous Asteroids*; (3) *Why do Scientists Love Antarctica so much?*; (4) *Will we ever really find E.T.?* South Atlantic Semi-Circumnavigation, Swan Hellenic Cruise. Dr. Smith was the on-board scientist tasked to provide guests with expert insights into history and latest discoveries in astronomy, astrophysics, astrobiology and planetary science.

Venuti, L (01/22-26) "*The physics of young stellar objects across the wavelength and time domains*", Invited talk at the conference "What was that? – Planning ESO follow up for transients, variables, and solar system objects in the era of LSST", held in Garching bei München, Germany.

Venuti, L (02/08) "*Pre-main sequence stars across the time domain: insights from high-precision and multi-wavelength photometry*", Seminar at the Astronomical Observatory of the University of Geneva, Switzerland.

Zupanska A (Feb 11). Virtual talk, Polish Astrobiological Society talk given in Polish "Plants from extreme environments." [Original title: "Rosliny z ekstremalnych środowisk w badaniach biologii kosmosu i astrobiologii.- eksperyment ARTEMOS do Międzynarodowej Stacji Kosmicznej."]

SETI AIR Program

Artworks and Exhibitions

Brittany Nelson

I can't make you love me

Solo exhibition at Patron Gallery

Feb 3 – Mar 30, 2024

1612 W Chicago Ave

Chicago, IL 60622

<https://patrongallery.com/exhibition/443/i-cant-make-you-love-me>

Brittany Nelson

Uncomputables: On Alien Intelligences and Cybernetics

January 15–February 26, 2024

I can hardly bear it when it is over, I can hardly bear it when it starts

(2022, 8 minutes), with a short story by Ted Chiang

<https://www.e-flux.com/announcements/580511/uncomputables-on-alien-intelligences-and-cybernetics/>

George Bolster

200 Billion Suns

Galerie Barbara Thumm

Markgrafenstrasse 68, Berlin, Germany

Opening: March 1, 2024

Exhibition: March 2 - April 20, 2024

<https://bthumm.de>

Bettina Forget

The Problem of the Moon

Art Gallery of Southwestern Manitoba

Brandon, Canada

April 4 - June 8, 2024

<https://www.agsm.ca/problem-moon>

Adriana Knouf

Vivre en Lichen

La Traverse

Marseille, France

March 15 - May 5, 2024

<https://www.latraversemarseille.fr/event>

Publications and Releases

Bettina Forget

Women With Impact, One Small Step

March 2024

in *Space Feminisms, People, Planet, Power*, Editors: Marie-Pier Boucher, Clair Webb, Annick Bureau, Nahum Romero. Bloomsbury Press.

Adriana Knouf

TX-2: MOONSHADOW Mission Requirements Document

March 2024

in *Space Feminisms, People, Planet, Power*, Editors: Marie-Pier Boucher, Clair Webb, Annick Bureau, Nahum Romero. Bloomsbury Press.

Adriana Knouf

Fragments of Xenology

Published in the journal *Echoes* #6

Part of the Sonic Acts Biennial 2024

February 2 - March 24, 2024

<https://sonicacts.com/agenda/Ecoes6-Launch>

Dxtr Spits & Blue Dreams

I Need Space

Official music release

February 23, 2024 at <https://songwhip.com/dxtr-spits>

Official video release: February 29, 2024

<https://www.youtube.com/channel/UC05VK7b2IKikjFavOxdIWXA>

In the News

Brittany Nelson

Interview with Brittany Nelson in *Cultured* magazine

In Her Latest Exhibition, Brittany Nelson Searches For Connection Everywhere From Mars to Montana

<https://www.culturedmag.com/article/2024/02/07/brittany-nelson-patron-gallery>

Xin Liu

Artist Xin Liu's AI Exploration Redefines Life Forms at Rhizome's 7x7 Event

Review of Xin's work at the Seven on Seven (7x7) event at the New Museum in New York City

<https://hypebeast.com/2024/2/artist-xin-liu-rhizome-7x7-event>

Daniela de Paulis

Decoding Intelligent Signals from Space

Article in the January/February issue of The Amsat Journal

https://launch.amsat.org/The_AMSAT_Journal

Xin Liu

Xin Liu by Danni Shen

Interview in Bomb magazine

<https://bombmagazine.org/articles/2024/03/18/xin-liu-by-danni-shen/>

Invited Talks

Jonathon Keats

Mark Klett and Jonathon Keats on Time Machines, Millennium Cameras, and Other Philosophical Instruments for Mental Time Travel

Podcast by The Future of Being Human

<https://futureofbeinghuman.com/p/mark-klett-and-jonathon-keats-on>

Education

Bettina Forget

Merging dualities: How convergence points in art and science can (re)engage women with the STEM field

January 2024

Guest lecture at University of Regina

Bettina Forget

Deconstructing AI Art

March 2024

Guest lecture at Concordia University, Montreal, Canada

Bettina Forget

Making contact: The art-science convergence

March 2024

Guest lecture at California Institute of the Arts (CalArts), Integrated Media

Contribution to ongoing/planned missions/concepts and planning

Cody, A-M, Venuti, L (ongoing) ESPEX: Early Star and Planet Evolution Explorer mission concept development.

Gorti, U., Science Lead and Co-I on Astrophysics Probe concept far-infrared telescope mission, PI A. Cooray, managed by JHU-APL.

Gulick is an MRO HiRISE Science Co-I and she leads the science theme leads for the Fluvial processes and Hydrothermal processes. Lead science planning for HiRISE cycle 455, 3/10/2024-4/14/2024.

Kagawa H (2019-ongoing). *BioNutrient 1*, Samples from BioNutrient 1 project returned via SpX-28 on July/2023 were analyzed.

Kagawa H (on going). *BioNutrient 2*, Samples from BioNutrient 2 project run 2 returned via SpX-28 on July/2023 were analyzed.

Kagawa H (ongoing). *BioNutrient 3*, Preparations ongoing for Microbial food safety and sustainable microbial culture system at the International Space Station. Collaboration with E-Nose (electric nose) group aiming for food safety in space (ongoing).

Lafuente B (ongoing). Working with collaborators on a third PRISM CLPS Proposal.

Obbard RW (ongoing). Working with collaborators on a second PRISM CLPS Proposal.

Obbard RW (ongoing). Working with collaborators on a third PRISM CLPS Proposal.

Paganelli F., International Association of Geodesy (IAG) Working Group 1.1.3 on Lunar Reference Frames

The **PDS Ring-Moon Systems Node** is based at the SETI Institute. The Planetary Data System (PDS) is a component of NASA's infrastructure, curating and supporting data from NASA missions and other data providers for the benefit of today's research community and future generations. PDS team members at the SETI Institute include **Tiscareno MS, Seritan MRK, Showalter MR, French RS, Mace MJT, Spitale JN, Chang Y-J, Stopp D, Simpson ER, Gordon MK, and Simpson RA.**

Sarrazin PC (ongoing). *MSL Science Team member*, CheMin Instrument.

Schulze-Makuch D (ongoing). BioSign (planning mission to expose microbial samples to space at the ISS).

Sobron P (ongoing). *NASA Mars 2020 rover mission Science Team member*, SHERLOC and SuperCam instrument development and operation.

Sobron P (ongoing). *ExoMars 2020 rover mission Science Team member*, RLS instrument development and operation.

Spry JA (2015-ongoing) Mission support to the NASA Office of Planetary Protection for the New Horizons, OSIRIS-Rex, Parker Solar Probe, ARTEMIS, InSight, MarCO, Solar Orbiter, EM1, EM1 secondary payloads (cubesats) and Psyche.

Wohler, B., Twicken, J. D., Tenebaum, P., Streigel, S., Smith, J. C., Caldwell, D. A., (ongoing) NASA TESS Mission, Science Processing Operations Center (SPOC) pipeline data processing team.

Zupanska A (ongoing). I. Passing the ARTEMOSS EVT and achieving flight-readiness. II. Preparation for the EVTRR to obtain formal flight approval. III. Spaceflight ARTEMOSS experiment on contract, scheduled to launch on 09/16/2024 on Space X-31. IV. Securing beam time at BNL on 09/10/2024 for the spaceflight ARTEMOSS experiment.

Telescope Time

El Moutamid, M, **M Tiscareno**, MM Hedman, JJ Lissauer, EM Molter, **MR Showalter**, D Souami, I de Pater, Structure and Dynamics of The Rings and Inner Moons of Uranus, Cycle 3 3 proposal was selected by James Webb Space Telescope, ID. #6379.

Official Committees & Strategic Planning

Andersen DT (ongoing) National Science Foundation, Antarctic Scientific Diving Control Board. Chair (since 2013).

Andersen DT (ongoing) Antarctican Society. Board Member.

Bonaccorsi R (ongoing). [NASA's Network For Ocean Worlds \(NOW\) Research Coordination Network](#).

Clark, C. Member of the NASA SciAct Digital Learning Affinity Group

Harman, P.K. Member of the NASA SciAct Women in STEM Affinity Group,

Harman, P.K. NASA PUNCH Mission Outreach Advisory Board Chair

Lafuente B (ongoing). NASA's Network For Life Detection (NFoLD) Research Coordination Network.

Obbard, RW. SETI Institute Diversity and Inclusion Working Group (internal).

Paganelli F., IAU Working Group on Cartographic Coordinates and Rotational Elements (WGCCRE) - Triennial Report 2021-2024

Paganelli F., IAU Commission F4 on Asteroids, Comets & TNOs - Triennial Report 2021-2024

Race MS (ongoing). *SETI Institute Education Group (since 2020)*.

Race MS (ongoing). Assoc. Editor, *Astrobiology*, Commentary section.

Race MS (ongoing). Appointed Member, *Technology Ethics Advisory Council at the Markkula Center, Santa Clara University*.

Race MS (2004-present). *Solar System Ambassadors (SSA)* program, JPL-NASA Public Outreach and Science Communication.

Rummel JD (2017-Present). The Hague International Space Resources Governance Working Group. *Leiden, The Netherlands* (COSPAR Representative).

Rummel JD (2016-Present). Chair, Science Advisory Board, SETI Institute.

Schulze-Makuch D (ongoing). Board Member, IFEX – Interdisziplinäres Forschungszentrum für Extraterrestrik (Interdisciplinary Extraterrestrial Research Center), hosted at University of Würzburg, Germany

Schulze-Makuch D (ongoing). Editorial Board, *Scientific Reports*, Nature Springer Group

Schulze-Makuch D (ongoing). Senior Editor, *Astrobiology*, May Ann Liebert

Schulze-Makuch D (ongoing). Editorial Board Member, *Life*, MDPI.

Schulze-Makuch D (ongoing). President, *German Astrobiology Society*

Schulze-Makuch D (ongoing). Council Member, *European Astrobiology Network Association*

Sobron P (ongoing). ISSI/ISSI-BJ International Teams in Space and Earth Sciences. Member in: Cross-calibration of Laser-Induced Breakdown Spectroscopy (LIBS) instruments for planetary exploration.

Sobron P (ongoing). Steering committee in NASA's Network For Life Detection (NFOLD) Research Coordination Network.

Sobron P (ongoing). Steering committee in NASA's Network For Ocean Worlds (NOW) Research Coordination Network.

Spry JA (Nov 2018 - ongoing) Participant/Executive Secretary in the Planetary Protection Technology Brainstorm Group.

Spry JA (Sept 2018 - ongoing) Member of the NASA working groups for revision of the Documents NPR8020.12 Planetary Protection Provisions for Robotic Extraterrestrial Missions, and (with **A Baker**) NASA STD 6022 Implementing Planetary Protection Requirements for Robotic Space Flight.

Warren-Rhodes KA. (ongoing). Senior Editor, *Astrobiology*, May Ann Liebert

Warren-Rhodes KA (ongoing). NASA's Network For Life Detection (NFOLD) Research Coordination Network.

Warren-Rhodes KA (ongoing). Editorial Board. *Frontiers Microbiology* and *Frontiers Astrobiology*.

Warren-Rhodes KA (ongoing). Editorial Board. *Microbial Ecology*.

Highlights

Andersen D (Oct-Dec). Successful expedition to Lake Untersee in the mountains of Queen Maud Land, Antarctica. International team (US, Canada, Austria, and Italy).

Backman DE, Clark C, Harman PK (Mar.) AAA Inclusion Plan that was approved by NASA HQ.

Backman DE, Clark C VAA Intro & NASA Resources *webinars*, (Jan 18)

Backman DE, Clark C Electromagnetic Spectrum & Multi-Wavelength Astronomy *webinars* (Jan 28).

Backman DE, Clark C, Solar eclipse & Sun hands-on activities *webinar* (Feb 26)

Backman DE, Electromagnetic Spectrum & Multi-Wavelength Astronomy *webinar* (Feb 28)

Backman DE, Clark C, Recent NASA Science Highlights *webinar* (Mar 5)

Backman DE, *Electromagnetic Spectrum & Multi-Wavelength Astronomy* webinar (Mar 30)

Banuelos, I., Pagonis, M., Schnabel, A., (Mar. 29-30) Texas AAA teachers represented the SETI Institute at the *Urban Music & Cultural Festival*. Austin, TX

Bonaccorsi R (2024-2025). Berkeley Lab Advanced Light Source (ALS) Associate.

Clark C, Harman PK (Mar. 20-23) AAA and NCCN exhibit within NASA booth at *NSTA Annual Conference*, Denver, CO. Helped staff; supported AAA teachers giving PD workshop (see citation below).

Clark C VAA Intro & NASA Resources *webinar* (Feb 7)

Clark C, VAA intro & NASA Resources *webinar* (Mar 9)

Earwicker, J and Gajjar V. (Mar 8): Earwicker carried out his first observations which will help him assess requirement for the GUI he will be leading to build for community college instructors.

Gajjar, V and Earwicker, J (Mar 28): Hosted two day *on-line workshop* over 12 instructors participated from different community colleges across the county.

Harman PK, Dubick AM, **Clark C**, McCall J, Chase B, Maughan M, Ripollone D (March 22). Exploring Visible & Invisible Light and Energy In a 3-Dimensional Learning Setting workshop 2024 *National Science Teaching Association Conference*, Denver, CO.

Harman, P, SETI Institute & Institute Research *webinar*, (Mar 27)

Peluso, D (03/21) *High School Students Contribute to Exoplanet Discovery*, Dr. Peluso led publication of a discovery of a Sub-Saturn size planet that used TESS mission data along with data collected by Citizen Scientists within the Unistellar telescope network, including Bay Area High School students. SETI Institute Press Release, <https://www.seti.org/press-release/high-school-students-contribute-exoplanet-discovery>

SETI Institute Science Council – Hired new members of the Science Council met for the first time on January 22, 2024.

