

**Publications****\*\* indicates first author publications and/or those by mentored junior personnel**

- \*\*52. “Systematic Multi-Epoch Monitoring of LkCa 15: Dynamic Dust Structures on Solar-System Scales”  
**Sallum, S.** et al. 2023, submitted to *AAS Journals*
- \*\*51. “High Angular Resolution Imaging of the V892 Tau Binary System: A New Circumprimary Disk Detection and Updated Orbital Constraints,” Vides, C., **Sallum, S.** et al. 2023, submitted to *AAS Journals*
50. “Differential speckle polarimetry with SCExAO VAMPIRES,” Safonov, B., et al. 2023, submitted to *Journal of Astronomical Telescopes, Instruments, and Systems*
49. “A Large Double-ring Disk around the Taurus M Dwarf J04124068+2438157,” Feng, L., et al. 2023, submitted to *AAS Journals*
48. “Detecting planetary mass companions near the water frost-line using JWST interferometry,” Ray, S., Hinkley, S., **Sallum, S.**, et al., 2022 *Monthly Notices of the Royal Astronomical Society*, 519, 2, [doi:10.1093/mnras/stac3425](https://doi.org/10.1093/mnras/stac3425)
47. “The Near Infrared Imager and Slitless Spectrograph for JWST - V. Kernel Phase Imaging and Data Analysis,” Kammerer, J. et al., 2022, in press at *Publications of the Astronomical Society of the Pacific*, 135, 1043, [dor:10.1088/1538-3873/ac9a74](https://doi.org/10.1088/1538-3873/ac9a74)
46. “The JWST Early Release Science Program for Direct Observations of Exoplanetary Systems II: A 1-20  $\mu\text{m}$  Spectrum of the Planetary Mass Companion VHS 1256-1257 b,” Miles, B. et al., 2022, in press at *Astrophysical Journal Letters*
45. “The JWST Early Release Science Program for Direct Observations of Exoplanetary Systems I: High Contrast Imaging of the Exoplanet HIP 65426 b from 2-16  $\mu\text{m}$ ,” Carter, A. et al., 2022, submitted to *AAS Journals*, [arxiv:2208.14990](https://arxiv.org/abs/2208.14990)
44. “Spectral Differential Imaging using Kernel Phase with CHARIS and SCExAO - Technique Performance and Current Limitations,” Chaushev, A., **Sallum, S.**, et al., 2022, submitted to *Journal of Astronomical Telescopes, Instruments, and Systems*
43. “Efficient detection and characterization of exoplanets within the diffraction limit: vortex fiber nulling with a mode-selective photonic lantern,” Xin, Y. et al., 2022, *Astrophysical Journal*, 938, 140, [doi:10.3847/1538-4357/ac9284](https://doi.org/10.3847/1538-4357/ac9284)
- 42 “The JWST Early Release Science Program for the Direct Imaging & Spectroscopy of Exoplanetary Systems,” Hinkley, S. et al., 2022, *Publications of the Astronomical Society of the Pacific*, 134, 1039, [doi:10.1088/1538-3873/ac77bd](https://doi.org/10.1088/1538-3873/ac77bd)
- \*\*41. “SAMpy: A Fourier-Plane Pipeline for JWST/NIRISS Aperture Masking Interferometry (and more!),” **Sallum, S.** et al. 2022, *Proc. SPIE*, 12183, 121832M, [doi:10.1117/12.2630401](https://doi.org/10.1117/12.2630401)
- \*\*40. “The Planetary Systems Imager for TMT: Driving Science Cases and Top Level Requirements,” **Sallum, S.** et al. 2022, *Proc. SPIE*, 12184, 1218446, [doi:10.1117/12.2630423](https://doi.org/10.1117/12.2630423)

39. “Design of an IR Imaging Channel for the Keck Observatory SCALES Instrument,” Banyal, R. et al. 2022, *Proc. SPIE*, 12188, 121881U, [doi:10.1117/12.2630696](https://doi.org/10.1117/12.2630696)
38. “Direct Imaging and Spectroscopy of Exoplanetary Systems with the JWST Early Release Science Program,” Hinkley, S. et al. 2022, *Proc. SPIE*, 12180, 121800S, [doi:10.1117/12.2629919](https://doi.org/10.1117/12.2629919)
37. “Imaging nearby, habitable-zone planets with the Large Binocular Telescope Interferometer,” Ertel, S. et al. 2022, *Proc. SPIE*, 12183, 1218302, [doi:10.1117/12.2635333](https://doi.org/10.1117/12.2635333)
36. “Optical Interferometry Imaging Contest IX,” Sanchez-Bermudex, J., Merand, A., **Sallum, S.**, et al. 2022, *Proc. SPIE*, 12183, 121831G, [doi:10.1117/12.2655246](https://doi.org/10.1117/12.2655246)
- \*\*35. “Spectral Differential Imaging using Kernel Phase with CHARIS/SCEXAO - Technique Performance and Current Limitations,” Chaushev, A., **Sallum, S.**, et al. 2022, *Proc. SPIE*, 12183, 121831L, [doi:10.1117/12.2629558](https://doi.org/10.1117/12.2629558)
34. “Differential speckle polarimetry with SCEXAO VAMPIRES,” Safonov, B. et al. 2022, *Proc. SPIE*, 12183, 121832C, [doi:10.1117/12.2630440](https://doi.org/10.1117/12.2630440)
- \*\*33. “Simulating the performance of aperture mask designs for SCALES,” Lach. K., **Sallum, S.**, and Skemer, A., 2022, *Proc. SPIE*, 12183, 121832D, [doi:10.1117/12.2630569](https://doi.org/10.1117/12.2630569)
32. “Innovations and advances in instrumentation at the W. M. Keck Observatory, vol II,” Kassis, M. et al. 2022, *Proc. SPIE*, 12184, 1218405, [doi:10.1117/12.2628630](https://doi.org/10.1117/12.2628630)
31. “Design of SCALES: A 2-5 Micron Coronagraphic Integral Field Spectrograph for Keck Observatory,” Skemer, A., Stelter, D., **Sallum, S.** et al. 2022, *Proc. SPIE*, 12184, 121840I, [doi:10.1117/12.2630577](https://doi.org/10.1117/12.2630577)
30. “The Planetary Systems Imager for TMT: Overview and Status,” Fitzgerald, M. P., **Sallum, S.**, et al. 2022, *Proc. SPIE*, 12184, 1218426, [doi:10.1117/12.2630410](https://doi.org/10.1117/12.2630410)
29. “Weighing Exo-Atmospheres: A novel mid-resolution spectral mode for SCALES,” Stelter, R. D., et al. 2022, *Proc. SPIE*, 12184, 1218445, [doi:10.1117/12.2630400](https://doi.org/10.1117/12.2630400)
- \*\*28. “Spectroastrometry with Photonic Lanterns,” Kim, Y. J., **Sallum, S.**, et al. 2022, *Proc. SPIE*, 12184, 1218449, [doi:10.1117/12.2630635](https://doi.org/10.1117/12.2630635)
27. “A Technology and Science Gap List for Habitable-Zone Exoplanet Imaging with Ground-Based Extremely Large Telescopes,” Jensen-Clem, R. et al. 2022, *Proc. SPIE*, 12185, 1218503, [doi:10.1117/12.2630547](https://doi.org/10.1117/12.2630547)
26. “Exoplanet Detection with Photonic Lanterns for Focal-Plane Wavefront Sensing and Control,” Lin, J. et al. 2022, *Proc. SPIE*, 12185, 121852G, [doi:10.1117/12.2630692](https://doi.org/10.1117/12.2630692)
25. “Demonstration of a photonic-lantern focal-plane wavefront sensor using fiber mode conversion and deep learning,” Norris, B. et al. 2022, *Proc. SPIE*, 12185, 1218530, [doi:10.1117/12.2629852](https://doi.org/10.1117/12.2629852)
24. “An Updated Preliminary Optical Design and Performance Analysis of the Planetary Systems Imager Adaptive Optics System,” Jensen-Clem, R. et al. 2022, *Proc. SPIE*, 12185, 1218546, [doi:10.1117/12.2630526](https://doi.org/10.1117/12.2630526)
23. “Experimental Measurements of AO-Fed Photonic Lantern Coupling Efficiencies,” Lin, J. et al. 2022,

*Proc. SPIE*, 12188, 121882E, [doi:10.1117/12.2630608](https://doi.org/10.1117/12.2630608)

22. “The Planetary Systems Imager Adaptive Optics System: An Initial Optical Design and Performance Analysis Tools for the PSI-Red AO System”, Jensen-Clem, R., Hinz, P., van Kooten, M., Fitzgerald, M., **Sallum, S.** et al. 2021, *Proc. SPIE 1182309*, [doi:10.1117/12.2594005](https://doi.org/10.1117/12.2594005)

\*\*21. “Information Content Approach to Trade Studies for SCALES”, Briesemeister, Z., **Sallum, S.**, Skemer, A. Batalha, N., 2021 *Proc. SPIE 1182308*, [doi:10.1117/12.2594880](https://doi.org/10.1117/12.2594880)

20. “Accreting protoplanets: Spectral signatures and magnitude of gas and dust extinction at H alpha,” Marleau, G. et al., 2021, *Astronomy & Astrophysics*, 657, 38, [doi:10.1051/0004-6361/202037494](https://doi.org/10.1051/0004-6361/202037494)

19. “First light of a holographic aperture mask: Observation at the Keck OSIRIS Imager,” Doelman, D. et al., 2021, *Astronomy & Astrophysics*, 649, 168, [doi:10.1051/0004-6361/202039027](https://doi.org/10.1051/0004-6361/202039027)

18. “Haze in Pluto’s atmosphere: Results from SOFIA and ground-based observations of the 2015 June 29 Pluto occultation”, Person, M. et al., 2021, *Icarus*, 356, 113572, [doi:10.1016/j.icarus.2019.113572](https://doi.org/10.1016/j.icarus.2019.113572)

\*\*17. “ELT Imaging of MWC 297 from the 23 m LBTI: Complex Disk Structure and a Companion Candidate”, **Sallum, S.** et al., 2021, *Astronomical Journal*, 161, 28, [doi:10.3847/1538-3881/abc957](https://doi.org/10.3847/1538-3881/abc957)

16. “On the Diversity of Asymmetries in Gapped Protoplanetary Disks”, van der Marel, N., et al., 2021, *Astronomical Journal*, 161, 33, [doi:10.3847/1538-3881/abc3ba](https://doi.org/10.3847/1538-3881/abc3ba)

15. “Cryogenic test results of the SCALES focal plane coronagraph mechanism,” Gonzales, M. et al. 2021, *Proc. SPIE*, 11823, 118231W, [doi:10.1117/12.2594801](https://doi.org/10.1117/12.2594801)

14. “Developing adaptive secondary mirror concepts for the APF and W.M. Keck Observatory based on HVR technology”, Hinz, P. et al., 2020, *Proc. SPIE 11448*, 114485U, 16, [doi:10.1117/12.2563223](https://doi.org/10.1117/12.2563223)

13. “Update on the preliminary design of SCALES: the Santa Cruz Array of Lenslets for Exoplanet Spectroscopy”, Stelter, D., Skemer, A., **Sallum, S.** et al., 2020, *Proc. SPIE 11447*, 1144764, 24, [doi:10.1117/12.2562768](https://doi.org/10.1117/12.2562768)

\*\*12. “End-to-end simulation of the SCALES integral field spectrograph”, Briesemeister, Z., **Sallum, S.**, et al., 2020, *Proc. SPIE 11447*, 114474Z, 13, [doi:10.1117/12.2562143](https://doi.org/10.1117/12.2562143)

\*\*11. “New Spatially Resolved Observations of the SR 21 Transition Disk and Constraints on the Small-Grain Disk Geometry”, **Sallum S.** et al., 2019, *Astrophysical Journal*, 883, 100, [doi:10.3847/1538-4357/ab3dae](https://doi.org/10.3847/1538-4357/ab3dae)

\*\*10. “Comparing Nonredundant Masking and Filled-Aperture Kernel Phase for Exoplanet Detection and Characterization, **Sallum S.** and Skemer A., 2019, *Journal of Astronomical Telescopes, Instruments, and Systems*, 5, 018001, [doi:10.1117/1.JATIS.5.1.018001](https://doi.org/10.1117/1.JATIS.5.1.018001)

\*\*9. “Comparing Nonredundant Masking and Filled-Aperture Kernel Phase for Exoplanet Detection and Characterization, **Sallum S.** and Skemer A., 2018, *Proc. SPIE 10701*, Optical and Infrared Interferometry and Imaging V, 107011D, [doi:10.1117/12.2313814](https://doi.org/10.1117/12.2313814)

\*\*8. “Data Reduction and Image Reconstruction Techniques for Non-Redundant Masking”, **Sallum S.**, et al. 2017, *Astrophysical Journal Supplements*, 233, 9, [doi:10.3847/1538-4365/aa90bb](https://doi.org/10.3847/1538-4365/aa90bb)

- \*\*7. “Improved Constraints on the Disk Around MWC 349A from the 23-meter LBTT”, **Sallum S.**, et al. 2017, *Astrophysical Journal*, 844, 22, [doi:10.3847/1538-4357/aa7855](https://doi.org/10.3847/1538-4357/aa7855)
- \*\*6. “Imaging Protoplanets: Observing Transition Disks with Non-Redundant Masking”, **Sallum S.**, et al. 2016, *Proc. SPIE* 9907, Optical and Infrared Interferometry and Imaging V, 99070D, [doi:10.1117/12.2231764](https://doi.org/10.1117/12.2231764)
- \*\*5. “Accreting Protoplanets in the LkCa 15 Transition Disk”, **Sallum S.**, et al. 2015, *Nature*, 527, 342, [doi:10.1038/nature15761](https://doi.org/10.1038/nature15761)
- \*\*4. “New Spatially Resolved Observations of the T Cha Transition Disk and Constraints on the Previously Claimed Substellar Companion”, **Sallum S.**, et al. 2015, *Astrophysical Journal*, 801, 85, [doi:10.1088/0004-637X/801/2/85](https://doi.org/10.1088/0004-637X/801/2/85)
3. “The 2011 June 23 Stellar Occultation by Pluto: Airborne and Ground Observations”, Person, M.J., et al. 2013, *Astronomical Journal*, 146, 83, [doi:10.1088/0004-6256/146/4/83](https://doi.org/10.1088/0004-6256/146/4/83)
2. “A Tight Connection between Gamma-Ray Outbursts and Parsec-scale Jet Activity in the Quasar 3C 454.3”, Jorstad, S.G. et al. 2013, *Astrophysical Journal*, 773, 147, [doi:10.1088/0004-637X/773/2/147](https://doi.org/10.1088/0004-637X/773/2/147)
1. “The Brightest Gamma-Ray Flaring Blazar in the Sky: AGILE and Multi-wavelength Observations of 3C 454.3 During 2010 November”, Vercellone, S. et al. 2011, *Astrophysical Journal Letters*, 736, 38, [doi:10.1088/2041-8205/736/2/L38](https://doi.org/10.1088/2041-8205/736/2/L38)

### Whitepapers and Research Notes

- R7. “The JWST Early Release Science Program for Direct Observations of Exoplanetary Systems: Best Practices for Data Collection in Cycle 2 and Beyond,” Hinkley, S., et al. 2023, *Arxiv E-Prints*, [doi:10.48550/arXiv.2301.07199](https://doi.org/10.48550/arXiv.2301.07199)
- \*\*R6. “Imaging Giant Protoplanets with the ELTs”, **Sallum, S.**, et al. 2019, *Astro 2020*, [baas-2020n3i527](https://arxiv.org/abs/2020.03.15)
- \*\*R5. “The Demographics and Atmospheres of Giant Planets with the ELTs”, Bowler, B.\*, **Sallum, S.\*** et al., 2019, *Astro 2020*, [baas-2020n3i496](https://arxiv.org/abs/2020.03.15)
- R4. “The Planetary Systems Imager for TMT”, Fitzgerald, M. et al., 2019, *Astro 2020*, [baas-2020n7i251](https://arxiv.org/abs/2020.07.25)
- R3. “A Technology Validation Program for near-IR Habitable Exoplanet Imaging with GMT and TMT”, Guyon, O. et al., 2019, *Astro 2020*, [baas-2020n7i203](https://arxiv.org/abs/2020.07.20)
- R2. “Protoplanetary Disk Science Enabled by Extremely Large Telescopes”, Jang-Condell, G. et al., 2019, *Astro 2020*, [baas-2020n3i346](https://arxiv.org/abs/2020.03.15)
- R1. “Realizing the Promise of High-Contrast Imaging: More Than 100 Gas-Giant Planets with Masses, Orbits, and Spectra Enabled by Gaia+WFIRST Astrometry”, Brandt, T. et al., 2019, *Astro 2020*, [baas-2020n3i269](https://arxiv.org/abs/2020.03.15)