Drew M. Miles

List of Publications

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PUBLICATIONS - [ORCID]

In-progress first-author publications:

1. **D. M. Miles** et al., "Design of the Rockets for Extended-source X-ray Spectroscopy", *J. Astron. Telesc. Instrum. Syst.*, 2023 (in prep).
2. **D. M. Miles** et al., "FIREBall 2(2023): The 2023 flight of the Faint Intergalactic-medium Redshifted Emission Balloon", *J. Astron. Telesc. Instrum. Syst.*, 2024 (in prep).
3. **D. M. Miles** et al., "The first flight of the Rockets for Extended-source X-ray Spectroscopy", *Astrophysical Journal*, 2024 (in prep).

Refereed Publications: 19; 2 first author, 7 with significant contribution, 10 with contribution

19. T. Brendel et al. (inc. **D. M. Miles**), "Balloon-borne FIREBall-2 UV spectrograph stray light control based on non-sequential reverse modeling of on-sky data", *J. Astron. Telesc. Instrum. Syst.* 8(4), 048001 (2022).
18. N. Kruczek, **D. M. Miles**, et al., "High-efficiency echelle gratings for the Far Ultraviolet", *Applied Optics* 61, 22 (2022).
17. K. France et al. (inc. **D. M. Miles**), "Extreme-ultraviolet Stellar Characterization for Atmospheric Physics and Evolution (ESCAPE) mission: motivation and overview", *J. Astron. Telesc. Instrum. Syst.* 8(1), 014006 (2022).
16. M. Urban, et al. (inc. **D. M. Miles**), "REX: X-ray experiment on the water recovery rocket", *Acta Astronautica* 184, 1-10 (2021).
15. J. A. McCoy, M. A. Verschuuren, **D. M. Miles**, & R. L. McEntaffer, "X-ray verification of sol-gel resist shrinkage in substrate-conformal imprint lithography for a replicated blazed reflection grating", *OSA Continuum* 3(11), 3141-3156 (2020).
14. R. C. McCurdy, **D. M. Miles**, J. A. McCoy, F. Grise, & R. L. McEntaffer, "Diffraction efficiency of a small-period astronomical X-ray reflection grating fabricated using thermally-activated selective topography equilibration", *J. Astron. Telesc. Instrum. Syst.* 6(4), 045003 (2020).
13. J. A. McCoy, R. L. McEntaffer, & **D. M. Miles**, "Extreme Ultraviolet and Soft X-ray Diffraction Efficiency of a Blazed Reflection Grating Fabricated by Thermally Activated Selective Topography Equilibration", *The Astrophysical Journal* 891 (2), 13 pp (2020).

12. D. LaRocca, et al. (inc. **D. M. Miles**), "Design and construction of the X-ray instrumentation onboard the HaloSat CubeSat", *J. Astron. Telesc. Instrum. Syst.* 6 (1), 014003 (2020).
11. T. Rogers, et al. (inc. **D. M. Miles**), "Induced X-ray fluorescence background for high-voltage space based detectors", *Experimental Astronomy* 49, 20pp (2020).
10. **D. M. Miles**, et al., "Water Recovery X-ray Rocket grating spectrometer", *J. Astron. Telesc. Instrum. Syst.* 5(4), 044006 (2019).
9. P. Kaaret, et al. (inc. **D. M. Miles**), "HaloSat - A CubeSat to Study the Hot Galactic Halo", *The Astrophysical Journal* 884 (2), 11 pp (2019).
8. J. H. Tutt, R. L. McEntaffer, **D. M. Miles**, B. D. Donovan, & C. Hillman, "Grating alignment for the Water Recovery X-ray Rocket (WRXR)", *Journal of Astronomical Instrumentation* 08 (2), 1950009 (2019).
7. **D. M. Miles**, et al., "Fabrication and Diffraction Efficiency of a Large-Format, Replicated X-ray Reflection Grating", *The Astrophysical Journal* 869 (2), 12 pp (2018).
6. T. Rogers, et al. (inc. **D. M. Miles**), "Gaseous electron multiplier gain characteristics using low-pressure Ar/CO_2", *Experimental Astronomy* 43 (2), 201-210 (2017).
5. J. H. Tutt, et al. (inc. **D. M. Miles**), "Diffraction Efficiency Testing of Sinusoidal and Blazed Off-Plane Reflection Gratings", *Journal of Astronomical Instrumentation* 05 (3), 1650009 (2016).
4. H. Marlowe, et al. (inc. **D. M. Miles**), "Modeling and empirical characterization of the polarization response of off-plane reflection gratings", *Applied Optics* 55 (21), pp. 5548-5553 (2016).
3. C. T. DeRoo, R. L. McEntaffer, **D. M. Miles**, et al., "Line Spread Functions of Blazed Off-Plane Gratings Operated in the Littrow Mounting", *Journal of Astronomical Telescopes, Instruments, and Systems* 2 (2), 025001 (2016).
2. J.A. McCoy, et al. (inc. **D. M. Miles**), "A Primer for Telemetry Interfacing in Accordance with NASA Standards Using Low Cost FPGAs", *Journal of Astronomical Instrumentation* 05 (01), 1640002 (2016).
1. H. Marlowe, et al. (inc. **D. M. Miles**), "Performance Testing of an Off-Plane Reflection Grating and Silicon Pore Optic Spectrograph at PANTER", *Journal of Astronomical Telescopes, Instruments, and Systems* 1 (4), 045004 (2015).

Conference Proceedings: 24; 6 first author, 5 with significant contribution, 13 with contribution

24. V. Picouet, et al. (inc. **D. M. Miles**), "FIREBall-2: flight preparation of a proven balloon payload to image the intermediate redshift circumgalactic medium", *Proc. ESA Symposium on European Rocket and Balloon Programmes*, 25th ESA PAC Symposium, 2022 (in press).
23. **D. M. Miles**, R. L. McEntaffer, and F. Grisé, "Blazed reflection gratings with electron-beam lithography and ion-beam etching", *Proc. SPIE 12181* Space Telescopes and Instrumentation 2022: UV to Gamma Ray, 1218153 (2022).
22. **D. M. Miles et al.**, "An update on the rockets for extended-source X-ray spectroscopy", *Proc. SPIE 11821* UV, X-ray, and Gamma-Ray Space Instrumentation for Astronomy XXII, 118210K (2021).

21. J. H. Tutt, **D. M. Miles**, et al., "Developments of the focal plane camera for tREXS", *Proc. SPIE 11821* UV, X-ray, and Gamma-Ray Space Instrumentation for Astronomy XXII, 118210V (2021).
20. N. Kruczek, F. Grisé, **D. M. Miles**, et al., "Performance of anistotropically-etched gratings in the extreme and far ultraviolet bandpasses", *Proc. SPIE 11821* UV, X-ray, and Gamma-Ray Space Instrumentation for Astronomy XXII, 118210X (2021).
19. F. Grisé, et al. (inc. **D. M. Miles**), "Fabrication of custom astronomical gratings for the extreme and far ultraviolet bandpasses", *Proc. SPIE 11821* UV, X-ray, and Gamma-Ray Space Instrumentation for Astronomy XXII, 1182112 (2021).
18. B. Fleming, et al. (inc. **D. M. Miles**), "Opto-mechanical design of the ESCAPE Small Explorer: an EUV spectrograph for exoplanet host star irradiance and CME activity", *Proc. SPIE 11821* UV, X-ray, and Gamma-Ray Space Instrumentation for Astronomy XXII, 1182104 (2021).
17. K. France, et al. (inc. **D. M. Miles**), "The ESCAPE mission overview: exploring the stellar drivers of exoplanet habitability", *Proc. SPIE 11821* UV, X-ray, and Gamma-Ray Space Instrumentation for Astronomy XXII, 1182103 (2021).
16. K. France, et al. (inc. **D. M. Miles**), "EUV spectroscopy with the ESCAPE mission: exploring the stellar drivers of exoplanet habitability", *Proc. SPIE 11444* Space Telescopes and Instrumentation 2020: Ultraviolet to Gamma Ray, 1144405 (2020).
15. **D. M. Miles**, et al., "An introduction to the Rockets for Extended-source X-ray Spectroscopy", *Proc. SPIE 11118* UV, X-Ray, and Gamma-Ray Space Instrumentation for Astronomy XXI, 111180B (2019).
14. K. France, et al. (inc. **D. M. Miles**), "The Extreme-ultraviolet Stellar Characterization for Atmospheric Physics and Evolution (ESCAPE) mission concept", *Proc. SPIE 11118* UV, X-Ray, and Gamma-Ray Space Instrumentation for Astronomy XXI, 1111808 (2019).
13. R. McCurdy, R. L. McEntaffer, J. McCoy, & **D. M. Miles**, "Fabrication and diffraction efficiency of a 160-nm period X-ray reflection grating produced using thermally activated selective topography equilibration", *Proc. SPIE 11119* Optics for EUV, X-ray, and Gamma-Ray Astronomy IX, 111190Y (2019).
12. J. H. Tutt, **D. M. Miles**, et al., "The Focal Plane Camera for tREXS", *Proc. SPIE 11118* UV, X-Ray, and Gamma-Ray Space Instrumentation for Astronomy XXI, 111180C (2019).
11. M. Wages, et al. (inc. **D. M. Miles**), "Flight camera package design, calibration and performance for the Water Recovery X-ray Rocket mission", *Proc. SPIE 11118* UV, X-Ray, and Gamma-Ray Space Instrumentation for Astronomy XXI, 111180D (2019).
10. P. Kaaret, et al. (inc. **D. M. Miles**), "First Results from HaloSat - A CubeSat to Study the Hot Galactic Halo", *Proc. of AIAA/USU* Conference on Small Satellites, Upcoming Missions, Year in Review I, SSC19-III-05 (2019).
9. **D. M. Miles**, et al., "Grating design for the Water Recovery X-ray Rocket", *Proc. SPIE 10699* Space Telescopes and Instrumentation 2018: Ultraviolet to Gamma Ray, 106996K (2018).
8. A. Zajczyk, et al. (inc. **D. M. Miles**), "HaloSat: a search for missing baryons with a CubeSat", *Proc. of AIAA/USU* Conference on Small Satellites, Upcoming Missions, Year in Review, SSC18-WKIX-01 (2018).

7. **D. M. Miles**, et al., "An Introduction to the Water Recovery X-ray Rocket", *Proc. SPIE 10397* UV, X-Ray, and Gamma-Ray Space Instrumentation for Astronomy XX, 103970R (2017).
6. J. E. Hill, et al. (inc. **D. M. Miles**), "The x-ray polarimeter instrument on board the Polarimeter for Relativistic Astrophysical X-ray Sources (PRAXyS) mission", *Proc. SPIE 9905* Space Telescopes and Instrumentation 2016: Ultraviolet to Gamma Ray, 99051B (2016).
5. **D. M. Miles**, et al., "Diffraction efficiency of radially-profiled off-plane reflection gratings", *Proc. SPIE 9603* Optics for EUV, X-ray and Gamma-Ray Astronomy VII, 960316 (2015).
4. H. Marlowe, R. L. McEntaffer, C. DeRoo, **D. M. Miles**, et al., "Polarization sensitivity testing of off-plane reflection gratings", *Proc. SPIE 9603* Optics for EUV, X-ray and Gamma-Ray Astronomy VII, 960318 (2015).
3. T. J. Peterson, et al. (inc. **D. M. Miles**), "Off-plane x-ray reflection grating fabrication", *Proc. SPIE 9603* Optics for EUV, X-ray and Gamma-Ray Astronomy VII, 960317 (2015).
2. T. Rogers, T. Schultz, J. McCoy, **D. Miles**, et al., "First results from the OGRESS sounding rocket payload", *Proc. SPIE 9601* UV, X-ray and Gamma-Ray Space Instrumentation for Astronomy XIX, 960104 (2015).
1. J. H. Tutt, et al. (inc. **D. M. Miles**), "Developments in the EM-CCD camera for OGRE", *Proc. SPIE 9154* High Energy, Optical, and Infrared Detectors for Astronomy VI, 91540E (2014).