Peter Ferguson

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EDUCATION

Ph.D. in Astronomy   Anticipated May 2022
Texas A&M University
Advisors: Louis Strigari & Jennifer Marshall

Masters in Astronomy   May 2019
Texas A&M University

B.S. in Astrophysics   May 2013
Haverford College

WORK EXPERIENCE

URA Fellowship, Fermilab   Aug 2020 – December 2020
Project titled: Discovering new stellar streams in the DELVE survey Research Focus: Helped create, calibrate and observe for the DECam photometric survey DELVE. Then using this dataset to explore Milky Way stellar streams.

Research Assistant: Astronomy, Texas A&M University   Aug 2015 – Present
Research Focus: Exploring and Characterizing Milky Way substructures (dwarf galaxies, stellar streams) using statistical methods such as Bayesian Hierarcical Modeling

Research Assistant: Instrumentation, Texas A&M University   Sept 2016 – Present
Research Focus: Leading the development and deployment of TCal a Traveling Calibration system that will be used to characterize the photometric transmission as a function of wavelength for telescope/imaging systems that expect to devote significant time to survey followup.

Teaching Assistant — Lab Coordinator, Texas A&M University   Fall 2017 – Spring 2019
Coordinate Lab section for Astronomy 111: Overview of Modern Astronomy

Teaching Assistant — Lab Instructor, Texas A&M University   Fall 2016 – Fall 2017
Astronomy 111: Overview of Modern Astronomy

Research Assistant, Gemini Observatory, Hilo HI   Dec 2014 – May 2015
Kristin Chiboucas

Research Assistant, Haverford College   April 2012 – Dec 2013
Stephen Boughn

PUBLICATIONS

First Author:
- **Ferguson, P.**, Strigari, L.,
  "Exploring the 3D structure of the Sagittarius sSph using RR-Lyrae," MNRAS, Volume 495, Issue 4, 4124-4134 pp, (2020), 10.1093/mnras/staa1404

- **Ferguson, Peter.**,D. L. DePoy, L. Schmidt et. al.,
  "*Development of TCal: a mobile spectrophotometric calibration unit for astronomical imaging systems,*"(2018), Proceedings of the SPIE, Volume 10702, id. 107023A 8 pp., DOI: 10.1117/12.2313752

Contributing Author:
- Cerny, W., Pace, A.B., Drlica-Wagner, A., **Ferguson, P.S.**, et. al.,
  "*Discovery of an Ultra-Faint Stellar System near the Magellanic Clouds with the DECam Local Volume Exploration (DELVE) Survey*", Submitted to AAS Journals fall 2020, *arXiv:2009.08550*
- Hansen, T., Riley, A.H., Strigari, L.E., Marshall, J.L., **Ferguson, P. S.**, et. al.,
  "*A Chemo-dynamical Link between the Gjöll Stream and NGC 3201*" ApJ, Volume 901, Issue 1, article id. 23, 24 pp, (2020), DOI 10.3847/1538-4357/ababa5
- Hansen, T. T., Marshall, J.L., ..., **Ferguson, P. S.** et. al.,
  "*Chemical Analysis of the Ultrafaint Dwarf Galaxy Grus II. Signature of High-mass Stellar Nucleosynthesis*" ApJ, Volume 897, Issue 2, article id. 183, 183 pp, (2020), DOI 10.3847/1538-4357/ab9643
- Mau, S.; Cerny, W. Pace, A. B.,...,**Ferguson, P. S.** et. al.,
  "*Two Ultra-Faint Milky Way Stellar Systems Discovered in Early Data from the DECam Local Volume Exploration Survey*", ApJ, Volume 890, Issue 2, id.136, 12 pp. (2020), DOI 10.3847/1538-4357/ab6c67
- Stringer, K. M. Long, J. P. Macri,L.,...,**Ferguson, Peter.** et. al.,
  " *Identification of RR Lyrae Stars in Multiband, Sparsely Sampled Data from the Dark Energy Survey Using Template Fitting and Random Forest Classification*", Volume 158, Issue 1, article id. 16, 26 pp. (2019)., DOI: 10.3847/1538-3881/ab1f46
- Shipp, N., Drlica-Wagner, A., Balbinot, E., **Ferguson, P.**, Erkal, D., Li, T. S. et. al.,
  "*Stellar Streams Discovered in the Dark Energy Survey,*"ApJ, Volume 862, Issue 2, article id. 114, 24 pp. (2018)., DOI: 10.3847/1538-4357/aacdab

PRESENTATIONS

- DECam Local Volume Exploration (DELVE) Survey Collaboration Meeting   23 July. 2020
  Talk: *Stellar Streams in DELVE*
  Remote due to COVID
- Dark Energy Survey(DES) Collaboration Meeting   13 May. 202
  Talk: *Milky Way working group update*
  Remote due to COVID
- RRL/Cep 2019   17 October. 2019
  Talk: *"Exploring the 3D structure of the Sagittarius dSph core using RR Lyrae"*
  Cloudcroft, NM
- Workshop on Astronomy & Statistics   19 April. 2019
  Talk: *"Constraining the 3D structure of the Sagittarius dwarf galaxy using RR-Lyrae and simple hierarchical Bayesian modeling"*
  Texas A&M University, College Station, TX
- Workshop: Near-Field Cosmology with the Dark Energy Survey's DR1 and Beyond 27-29 June. 2018
  Talk: *RR-Lyrae in the Dark Energy Survey*
  Kavali Institute for Cosmological Physics, Univesity of Chicago, Chicago, IL
- SPIE Astronomical Telescopes + Instrumentation   10-15 June. 2018
  Talk: *TCal: a mobile spectrophotometric calibration unit for astronomical imaging systems*
  Austin, Austin, TX

Interests/Skills

Science Interests: Galactic Archaeology, Tidal Streams, Variable Stars, Statistics, Instrumentation

Experienced in: Data Reduction, Bayesian Hierarchical Modeling, Data Analysis

Languages: Python, R, IRAF, IDL, C++, LabView, SQL/ADQL,Linux/Bash, SLURM