

Chris Stoughton
Fermi National Accelerator Laboratory
Senior Scientist

Biographical Sketch: Chris Stoughton obtained his PhD in particle physics from Columbia University in 1986. His thesis, under the direction of Wonyong Lee, reported the results of a search for neutrino oscillations with Brookhaven National Laboratory's E776. His postdoctoral work at Fermilab studied the hadroproduction of charm, with Jeffrey Appel. In 1991 he became a founding member of Fermilab's Experimental Astrophysics Group, working on the Sloan Digital Sky Survey, where he developed and managed the data processing operations and investigated star clusters and quasars. He did initial simulation work for the Dark Energy Survey. He then worked to build and operate laser interferometers for The Fermilab Holometer. He collaborates with Ben Mazin's group at UCSB developing software for their Microwave Kinetic Inductance Detectors. His current work includes the Fermilab $g - 2$ experiment to measure the anomalous magnetic moment of the muon and developing electronics and software for Cosmic Microwave Background experiments.

He is actively engaged in outreach, served as the Fermilab/UC quarknet mentor and as a part-time computer science instructor at a secondary school. He currently teaches Astronomy, part time, at a post-secondary institution.

Selected References:

Adam Schreckenberger et al., "New Fast Kicker Results from the Muon $g-2$ E-989 Experiment at Fermilab", Conference: 9th International Particle Accelerator Conference, Vancouver, BC Canada (2018)

A. Chou et al., "Interferometric Constraints on Quantum Geometrical Shear Noise Correlations", Class. Quantum Grav. 34 165005 (2017)

A. Chou et al., "The Holometer: An Instrument to Probe Planckian Quantum Geometry", Class. Quantum Grav. 34 065005 (2017)

A. Chou et al., "MHz Gravitational Wave Constraints with Decameter Michelson Interferometers", Phys. Rev. D 95, 063002 (2017)

A. Chou et al., "First measurements of high frequency cross-spectra from a pair of large Michelson interferometers", Phys.Rev.Lett. 117 (2016) no.11, 111102 (2017)

P. Szypryt et al., "Direct Detection of SDSS J0926+3624 Orbital Expansion with ARCONS", MNRAS 439(3) (2013)

M. J. Strader et al., "Excess Optical Enhancement Observed with ARCONS for Early Crab Giant Pulses", Astrophys. J. Lett. 779, L12 (2013)

B. A. Mazin et al., "ARCONS: A 2024 Pixel Optical through Near-IR Cryogenic Imaging Spectrophotometer", PASP 125:1348-1361 (2013)

R. Ali Vanderveld et al., "Lossy compression of weak lensing data", PASP 123 (2011) 996-1003 (2011)

J. Rhodes et al., "The effects of charge transfer inefficiency (CTI) on galaxy shape measurements", PASP 122:439-450 (2010)

Beth A. Reid et al., "Cosmological Constraints from the Clustering of the Sloan Digital Sky Survey DR7 Luminous Red Galaxies", MNRAS 404:60-85 (2010)

- Joseph J. Mohr, "The Dark Energy Survey Data Management System", Proceedings of SPIE 7016 (2008)
- Gordon T. Richards et al., "The SDSS Quasar Survey: Quasar Luminosity Function from Data Release Three", AJ accepted (2006).
- J. Adelman-McCarthy et al. [SDSS Collaboration], "The Fourth Data Release of the Sloan Digital Sky Survey", ApJS, **162**, 38 (2006)
- Dark Energy Survey Collaboration, "The Dark Energy Survey", astro-ph/0510346 (2005), White Paper submitted to the Dark Energy Task Force
- Sebastian Jester et al., "The Sloan Digital Sky Survey View of the Palomar-Green Bright Quasar Survey", AJ **130**, 873 (2005)
- Cristin J. Rider et al., "A Survey of Open Clusters in the u'g'r'i'z' Filter System I: Results for NGC 2548 (M48)", AJ **127**, 2210 (2004)
- Robert Sparks, Chris Stoughton, and M. J. Raddick, "Using Sloan Digital Sky Survey Data in the Classroom", ASPC **319**, 394 (2004)
- Robert H. Becker et al., "Evidence for Reionization at $z \sim 6$ Detection of a Gunn-Peterson Trough in a $z=6.28$ Quasar", AJ **122**, 6 (2001)
- Chris Stoughton et al., "Sloan Digital Sky Survey: Early Data Release", AJ **123**, 485 (2002)
- Bing Chen, Chris Stoughton et al., "Stellar Population Studies with the SDSS I: The Vertical Distribution of Stars in the Milky Way", ApJ **553**, 184 (2001)
- Daniel E. Vanden Berk, Chris Stoughton et al., "QSOS and Absorption-Line Systems Surrounding the Hubble Deep Field", ApJ **119**, 2571 (2000)
- E. F. Borra et al., "Spectroscopy of Quasar Candidates Found With Slitless Spectroscopy II: Six Northern Fields", AJ **111** 1456 (1996)
- G. A. Alves et al., "Atomic Mass Dependence of $D^{+/-}$ and D^0, \bar{D}^0 Production in 250 GeV $\pi^{+/-}$ -Nucleon Interactions", PRL **70** 722 (1993)
- Chris Stoughton, Don J. Summers, "Using Multiple RISC CPUs in Parallel to Study Charm Quarks", CompPh **6**, 371, (1992)
- B. Blumenfeld et al., "Search for $\nu_\mu \rightarrow \nu_e$ Oscillations", PRL **62**, 2237, (1989)