

Samaporn (Kaew) Tinyanont

Department of Astronomy, California Institute of Technology
1200 E California Blvd, MC 249-17, Pasadena, CA 91125

+1 (857) 253-1406

Email: st@astro.caltech.edu

Webpage: astro.caltech.edu/~st

Education

California Institute of Technology, Pasadena CA, 2015-present

Ph.D. in Astrophysics, Expected Spring 2020

Thesis title: Insights into Stellar Explosions from Infrared Light

Advisors: Prof. Dimitri Mawet and Prof. Mansi Kasliwal

M.S. in Astrophysics, June 2016

Harvey Mudd College, Claremont CA, 2011-2015

B.S. with high distinction and departmental honors in Physics with a concentration on Astronomy, 2015

Appointments

Research assistant, California Institute of Technology	2015-current
Teaching assistant, California Institute of Technology	2015-2016
Summer research assistant, Carnegie Observatories	2013, 2014
Teaching assistant, Harvey Mudd College and Pomona College	2012-2014

Conference Oral Presentations

SPIE Optics+Photonics, San Diego, CA, 2019: Achieving a spectropolarimetric precision of 0.1% with WIRC+Pol

Fifty-one Erg, North Carolina State University, Raleigh, NC, 2019: First silicate dust detection in an interacting SN 2014C

American Astronomical Society winter meeting, Seattle, WA, 2019: WIRC+Pol: Low-resolution near-infrared linear spectropolarimeter

Brown dwarf to exoplanet connection, University of Delaware, Newark, DE, 2017: WIRC+Pol: Low-resolution near-infrared linear spectropolarimeter

The Dynamic Infrared Sky, Caltech, Pasadena, CA, 2017: Circumstellar interaction of core-collapse supernovae in the mid-infrared

Telescope Time Awarded

NASA InfraRed Telescope Facility (IRTF)

- 2019A, PI: 0.5 nights
MIRSI, Ground-based mid-infrared observations of SN 2014C

Gemini Observatory

- April 2018, Fast Turnaround, PI: 3 hours
Ground-based 3-5 μm (L'-M' bands) imaging of SN 2014C with NIRC2 and L' band spectroscopy with GNIRS.

Hale 200-inch Telescope, Palomar Observatory

- 2018B, 2019A, and 2019B, PI: 5 target of opportunity observations each semester
WIRC+Pol: spectropolarimetry of bright and nearby core-collapse supernova
- 2017B and 2018A, PI: 2 and 4 nights
WIRC+Pol, TripleSpec: Late time spectroscopy of interacting supernova SN 2014C and spectroscopy and spectropolarimetry of bright and nearby potentially dust forming SN 2017eaw.

Professional Activities

Executive secretary for a NASA review panel, 2019

Abstract sorting for AAS winter meeting, January 2019

Proposal reviewer, Gemini fast turnaround program, April 2018

Observing Experience

W.M. Keck Observatory (10-meter)

Near-IR spectroscopy on NIRC2 and MOSFIRE (5 nights)

Palomar Observatory (Hale 200-inch)

Near-IR spectropolarimetry with WIRC+Pol (+50 nights)

Near-IR imaging with WIRC (+20 nights)

Near-IR spectroscopy with TripleSpec (10 nights)

Adaptive optics imaging with PHARO (1 night)

Optical imaging with LFC (1 night)

Apache Point Observatory (ARC 3.5-meter)

Optical spectroscopy with DIS (2 nights)

Technical Experience

Optical and infrared imaging, spectroscopy, and spectropolarimetry

Microscopic imaging to inspect parts for WIRC+Pol

Imaging detector characterization

Software and programming language: IDL, Python, SQL

Outreach Activities

Public lecture entitled "Brown dwarfs: too small a star, too massive a planet" as part of Caltech Astronomy's public lecture and stargazing series. Recording available at

<https://echo360.org/section/5cc4ec39-30a7-4a70-985c-20cfd5283fcc/home>

Leading telescope volunteer at a number of other public events organized by the outreach group at Caltech Astronomy Department.

Publications list

First-author Refereed Publications

Supernova 2014C: Ongoing Interaction with Extended Circumstellar Material with Silicate Dust, **Samaporn Tinyanont**; Ryan Lau; Mansi Kasliwal, et al., 2019, arXiv:1909.06403, submitted to The Astrophysical Journal.

Supernova 2017eaw: Molecule and Dust Formation from Infrared Observations, **Samaporn Tinyanont**; Mansi Kasliwal; Kelsie Krafton; et al., 2019, The Astrophysical Journal, 973, 127.

WIRC+Pol: A Low-Resolution Near-Infrared Spectropolarimeter, **Samaporn Tinyanont**; Dimitri Mawet; Maxwell Millar-Blanchaer; Ricky Nilsson; et al., 2019, Publications of the Astronomical Society of the Pacific, 131, 025001.

A Systematic Study of Mid-Infrared Emission from Core-Collapse Supernovae with SPIRITS, **Samaporn Tinyanont**; Mansi M. Kasliwal; Ori D. Fox; Ryan Lau; et al., 2016, The Astrophysical Journal, 833, 231.

Refereed Publications with Significant Contribution

SPIRITS: Uncovering Unusual Infrared Transients with Spitzer, Mansi Kasliwal; et al., including Samaporn Tinyanont, 2017, The Astrophysical Journal, 839, 88.

I catalogued archival observations from *Spitzer Space Telescope* to be used as reference images for image subtraction for the SPitzer InfraRed Intensive Transient Survey (SPIRITS). I observed and identified molecular hydrogen emission lines in SPIRITS14ajc, indicative of an eruption or explosion in a molecular cloud.

Conference Proceedings

Achieving a Spectropolarimetric Precision Better than 0.1% in the Near-Infrared with WIRC+Pol, **Samaporn Tinyanont**; Maxwell Millar-Blanchaer; Nemanja Jovanovic; Dimitri Mawet; et al., 2019, Proceedings of the SPIE, Vol 11132, 1113209.

WIRC+Pol: Low-Resolution Near-Infrared Spectropolarimeter, **Samaporn Tinyanont**; Maxwell Millar-Blanchaer; Ricky Nilsson; Dimitri Mawet; et al., Proceedings of the SPIE, Vol 10702, 107023J.

Software Product

WIRC+Pol Data Reduction Pipeline, python-based and publicly available at github.com/WIRC-Pol/wirc_drp

Other Refereed Publications

Discovery of an Intermediate-luminosity Red Transient in M51 and Its Likely Dust-obscured, Infrared-variable Progenitor, Jacob Jencson, et al., including **S. Tinyanont**, 2019, The Astrophysical Journal Letters, 880, 2.

The fast, luminous ultraviolet transient AT2018cow: extreme supernova, or disruption of a star by an intermediate-mass black hole?, Daniel Perley, et al., including **S. Tinyanont**, 2019, Monthly Notices of the Royal Astronomical Society, 484, 1.

Spitzer observations of SN 2014J and properties of mid-IR emission in Type Ia supernovae, Joel Johansson, et al., including **S. Tinyanont**, 2017, Monthly Notices of the Royal Astronomical Society, 466, 3.

SPIRITS 15c and SPIRITS 14buu: Two Obscured Supernovae in the Nearby Star-forming Galaxy IC 2163, Jacob Jencson, et al., including **S. Tinyanont**, 2017, The Astrophysical Journal, 837, 2

An Excess of Mid-infrared Emission from the Type Iax SN 2014dt Ori D. Fox, et al., including **S. Tinyanont**, 2016, The Astrophysical Journal Letters, 816, 1.