CHIEN-TING CHEN

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Profile

I am an observational astrophysicist who study supermassive black holes and their host galaxies.

Appointments and experience

Postdoctoral Scholar, the Pennsylvania State University — 2015—present
Working with Professor W. Niel Brandt, the NuSTAR science working group, the Chandra Deep Field South Collaboration, and the SERVS / X-SERVS Collaboration on multiple projects related to active galactic nuclei and galaxy evolution. My responsibility includes leading my own research projects and advising graduate students in PSU, grant proposal preparation, and teaching courses.

Neukom Graduate Fellow Dartmouth College — 2014–2015
Graduate Research Assistant, Dartmouth College — 2013–2014
Worked with Professor Ryan Hickox, primarily on studying the evolution of active galactic nuclei and their host galaxies via multiwavelength data analysis.

Dartmouth Teaching Fellow, Dartmouth College — 2009–2013
In addition to conducting research with Professors Ryan Hickox and Brian Chaboyer, I was responsible for running the public observing program at Dartmouth. I was also a teaching assistant for multiple undergraduate and graduate courses.

Research Assistant, National Tsing Hua University — 2005–2007
Worked with Professor Mike J. Cai on studying general relativistic solutions of gravitational collapse and related phenomena in astrophysics. I also taught undergraduate general physics labs.

Education

Dartmouth College, Hanover NH — Ph. D. in Physics and Astronomy, 2015
National Tsing-Hua University, Hsinchu, Taiwan — M.S. in Astronomy and B.S. in Physics, 2001—2007

Awards & Grants

Awards

- Neukom Graduate Fellowship for Computational Science
- Dartmouth Teaching Fellowship
- NASA Group Achievement Award
  (NuSTAR science working group – extragalactic surveys)
- Neukom Prize for Outstanding Graduate Research in Computational Science, 2015
- Graduate Research Award, Dartmouth College, 2015 (Physics and Astronomy)

Research proposals and grants

- NASA Space Grant Graduate Research Award (New Hampshire)
- PI / Lead co-I on following projects:
  (1) XMM-Newton Cycle 17 Multi-year Heritage Program (PI: W.N. Brant): "Completing and Ensuring Major Impact from the XMM-SERVS Survey".
  (2) NuSTAR Cycle 4: "OBSCURED LOW-MASS AGNs WITH NuSTAR AND Spitzer IRS" (PI: C. Chen)
- Co-I on the following awarded projects:
  (1) XMM-Newton cycle 15 (PI: W. N. Brandt): "Going Beyond COSMOS with the XMM-SERVS Survey of W-CDF-S, XMM-LSS, and ELAIS-S1 "
  (2) Hobby-Eberly Telescope LRS2 Shared-risk proposal (PI: J. Trump): "Spatially Resolving the Fossil Record of Black Hole Seeds"
  (3) Chandra cycle 18 (PI: R. Hickox): "The Chandra Deep Wide-Field Survey: Completing the new generation of Chandra extragalactic surveys"
  (4) XMM-Newton cycle 16 (PI: M. Brightman): "X-ray spectral properties of super-Eddington SDSS quasars"
  (5) Chandra cycle 19 archival proposal (PI: G. Yang): "Where do Monsters Grow?"

Publication

First-author publications:

1. **Chen, Chien-Ting**; Hickox, Ryan; Alberts, Stacey et al., ApJ, 773, 3, 2013
   "A Correlation between Star Formation Rate and Average Black Hole Accretion in Star-forming Galaxies"
2. **Chen, Chien-Ting** and Hickox, Ryan, IAU Symposium No. 304, 2013
   "A correlation between star formation rate and average black hole accretion rate in star forming galaxies"
3. **Chen, Chien-Ting**; Hickox, Ryan; Alberts, Stacey et al., ApJ, 802, 50, 2015
   "A connection between obscuration and star formation in luminous quasars"
4. **Chen, Chien-Ting**; Hickox, Ryan; Goulding, Andy et al., ApJ, 837, 145, 2017
   "The X-Ray and Mid-infrared Luminosities in Luminous Type 1 Quasars"
5. **Chen, Chien-Ting**; Brandt, W. Niel; Reines, Amy et al., ApJ, 837, 48, 2017
   "Hard X-Ray-selected AGNs in Low-mass Galaxies from the NuSTAR Serendipitous Survey"
6. **Chen, Chien-Ting**; Brandt, W. Niel.; Luo, Bin et al., MNRAS accepted, 2018
   "The X-SERVS Survey: New XMM-Newton Source Catalog for the XMM-LSS field"

Publications as a major contributor (2nd — 4th author)

1. Hickox, Ryan; Mullaney, James; Alexander, Dave, **Chen, Chien-Ting** et al., ApJ 782, 9, 2014
   "Black hole variability and the star formation-active galactic nucleus connection: do all star-forming galaxies host an active galactic nucleus?"

2. Hainline, Kevin; Hickox, Ryan; **Chen, Chien-Ting** et al., ApJ, 823, 42, 2016
   "A Tale of Two Narrow-line Regions: Ionization, Kinematics, and Spectral Energy Distributions for a Local Pair of Merging Obscured Active Galaxies"

3. Yang, Guang; **Chen, Chien-Ting**; Vito, Fabio et al., ApJ, 842, 72, 2017
   "Black-Hole Growth is Mainly Linked to Host-Galaxy Stellar Mass rather than Star Formation Rate"

4. Yang, Guang; Brandt, W. Niel; Vito, Fabio, **Chen, Chien-Ting** et al., MNRAS accepted (2017)
   "Linking black-hole growth with host galaxies: The accretion-stellar mass relation and its cosmic evolution"

Publications as a contributor:

1. Vito, F. et al., MNRAS, 474, 4528, 2018,
   ``Heavy X-ray obscuration in the most luminous galaxies discovered by WISE"

2. Zappacosta et al., ApJ accepted (arXiv:1801.04280)
   ``The NuSTAR Extragalactic Surveys: X-ray Spectroscopic Analysis of the Bright Hard-band Selected Sample"

3. Lansbury, G.; Baloković, M.; Brightman, M. et al., ApJ, 846, 20, 2017
   "The NuSTAR Serendipitous Survey: Hunting for the Most Extreme Obscured AGN at> 10 keV"

4. Lansbury, G.; Stern, D.; Aird, J. et al., 2016. ApJ, 836, 99, 2017
   "The NuSTAR Serendipitous Survey: The 40 month catalog and the properties of the distant high energy X-ray source population"

5. Ricci, C.; Assef, R.; Stern, D. et al., ApJ, 835, 105, 2017
   "NuSTAR observations of WISE J1036+0449, a Galaxy at z~ 1 obscured by hot dust"

6. Brightman, M.; Masini, A.; Ballantyne, D. et al., ApJ, 826, 93, 2016
   "A Growth-rate Indicator for Compton-thick Active Galactic Nuclei"

7. Lamassa, S.; Ricarte, A.; Glikman, E. et al., ApJ 820, 70, 2016
   "Peering Through the Dust: NuSTAR Observations of Two FIRST-2MASS Red Quasars"

8. Peterson, B.; Grier, C.; Horne, K. et al. ApJ 795, 149, 2014
   "Reverberation Mapping of the Seyfert 1 Galaxy NGC 7469"

9. Milisavljevic, D.; Soderberg, A., Margutti, R. et al. ApJ 770, 38, 2013
   "SN 2012au: A Golden Link between Superluminous Supernovae and Their Lower-luminosity Counterparts"

10. Grier C.; Peterson, B.; Horne, K. et al. ApJ 764, 47, 2013
    "The Structure of the Broad-line Region in Active Galactic Nuclei. I. Reconstructed Velocity-delay Maps"

11. Grier, C.; Peterson, B.; Pogge, R. et al. ApJ 744, 4, 2012
    "A Reverberation Lag for the High-ionization Component of the Broad-line Region in the Narrow-line Seyfert 1 Mrk 335"

Teaching Experience

1. *Research advisor*
   Co-advisor for PSU graduate students.

2. *Lecturer at PSU, Dartmouth College, and NTHU*
   Substitute / guest lecturer for courses at graduate and undergraduate levels.
   Graduate level courses taught include: i) high energy astrophysics, ii) interstellar medium.
   Undergraduate level courses taught include: i) general physics (for engineering majors), ii) introductory astronomy (both science and non-science majors), iii) high energy astrophysics.

3. *Teaching Assistant*
   Courses taught include: 1. General Physics I, II (science-major, pre-med, and engineering major) 2. Introductory astronomy I, II (both science and non-science majors).

Public Outreach

1. Public observing @ Dartmouth College (2010—2013, for general public)

2. Public lectures @ Dartmouth College (2012, for elementary school science clubs)

3. Public lectures @ State College, PA (2016, for preschoolers)

4. Public lecture @ Carnegie Science Center, Pittsburgh (2017, for general public)

5. Guest lecture @ PSU (Penn State Inservice Workshops in Astronomy, for high school teachers)

Professional presentations

I have presented my research in > 10 conferences, colloquiums, and seminars, including the following selected presentations:

1. 2018: Invited *highlight* talk at the 42nd COSPAR Assembly ``The connection between obscuration and star formation" (scheduled)

2. 2017: Invited talk at the 16th HEAD meeting special session ``AGNs in dwarf galaxies". Title: Hard X-Ray-selected AGNs in Low-mass Galaxies from the NuSTAR Serendipitous Survey

3. 2015: AAS Dissertation presentation, title: AGN accretion, obscuration and star formation in luminous galaxies.

4. 2014: Contributed talk at IAU Symposium 304 ``Multiwavelength AGN surveys and studies". Title: A correlation between star formation rate and average black hole accretion rate in star forming galaxies.

Collaboration

Member of the NuSTAR science working group (Obscured AGN / Extragalactic Survey / AGN physics)

Member of the XMM-SERVS and SERVS collaborations

Member of the Chandra Deep Wide Field Survey (XBootes) collaboration

Professional service

1. Member of the LOC, the Black hole Feedback Workshop, Dartmouth College

2. Referee, ApJ and MNRAS since 2014

3. Astronomy journal club organizer, Dartmouth College

4. Member of NuSTAR Guest Observer program TAC

References

1. Professor Ryan Hickox, Dartmouth College
   Ryan.C.Hickox@dartmouth.edu, +1-603-646-2962
   Professor Hickox was my Ph.D. thesis advisor

2. Professor William Niel Brandt, the Pennsylvania State University
   wnbrandt@gmail.com, +1-814-865-3509
   Professor Brandt is my postdoc advisor

3. Professor Dave Alexander, Durham University
   d.m.alexander@durham.ac.uk, +44-191-3343594
   Professor Alexander is a close collaborator