

# HSIN-YU CHEN

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## EDUCATION

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**The University of Chicago**

*2010 - present*

Ph.D. in Astronomy and Astrophysics

Thesis advisor: Daniel E. Holz

**National Taiwan University**

*2006 - 2010*

B.S. in Physics

## REFERENCES

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Daniel Holz (The University of Chicago)

James Annis (Fermi National Accelerator Laboratory)

Marica Branchesi (Universita degli Studi di Urbino 'Carlo Bo')

Salvatore Vitale (Massachusetts Institute of Technology)

## COLLABORATIONS

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LIGO Scientific Collaboration full member since 2014.

Dark Energy Survey external collaborator since 2014.

## AWARDS AND HONORS

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**Blue Apple Award (Best Student Presentation)**

2015

25th Midwest Relativity Meeting

**Nathan Sugarman Award for Excellence in Graduate Research**

2015

Enrico Fermi Institute

**LIGO Scientific Collaboration Poster Prize**

2015

LIGO Scientific Collaboration

**Government Scholarship to Study Abroad**

2013 - 2015

The Ministry of Education, Taiwanese Government

**McCormick Fellowship**

2010 - 2012

The University of Chicago

**The 57th Intel International Science and Engineering Fair**

2006

- First Prize of The Priscilla and Bart Bok Awards in Astronomy, American Astronomical Society and the Astronomical Society of the Pacific
- Fourth Award in Space Science

## SELECTED PUBLICATIONS

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*Short Author list:*

### **Finding the One: Identifying the Host Galaxies of Gravitational-Wave Sources**

Hsin-Yu Chen, Daniel E. Holz, *arXiv:1612.01471*, 2016

### **A Search for Kilonovae in the Dark Energy Survey**

Z. Doctor, R. Kessler, H. Y. Chen, B. Farr, D. A. Finley, R. J. Foley, D. A. Goldstein, D. E. Holz, A. G. Kim, E. Morganson, et al. *arXiv:1611.08052*, submitted to *ApJ*, 2016

### **Observational Selection Effects with Ground-based Gravitational Wave Detectors**

Hsin-Yu Chen, Reed Essick, Salvatore Vitale, Daniel E. Holz, Erik Katsavounidis, *arXiv:1608.00164*, *ApJ in press*, 2016

### **The Effect of Pair-Instability Mass Loss on Black Hole Mergers**

K. Belczynski, A. Heger, W. Gladysz, A. J. Ruiter, S. Woosley, G. Wiktorowicz, H.-Y. Chen, T. Bulik, R. OShaughnessy, D. E. Holz, C. L. Fryer, and E. Berti, *Astronomy&Astrophysics* 594, A97, 2016

### **Going the Distance: Mapping Host Galaxies of LIGO Sources in Three Dimensions Using Local Cosmography and Targeted Follow-up**

L. P. Singer, H.-Y. Chen, D. E. Holz, W. M. Farr, L. R. Price, V. Raymond, S. B. Cenko, N. Gehrels, J. Cannizzo, M. M. Kasliwal, S. Nissanke, M. Coughlin, B. Farr, Alex L. Urban, S. Vitale, J. Veitch, P. Graff, C. P. L. Berry, S. Mohapatra, I. Mandel, *The Astrophysical Journal Letters*, 829, 1, L15, 2016

### **Supplement: Going the Distance: Mapping Host Galaxies of LIGO and Virgo Sources in Three Dimensions Using Local Cosmography and Targeted Follow-up (2016, ApJL, 829, L15)**

L. P. Singer, H.-Y. Chen, D. E. Holz, W. M. Farr, L. R. Price, V. Raymond, S. B. Cenko, N. Gehrels, J. Cannizzo, M. M. Kasliwal, S. Nissanke, M. Coughlin, B. Farr, Alex L. Urban, S. Vitale, J. Veitch, P. Graff, C. P. L. Berry, S. Mohapatra, I. Mandel, *The Astrophysical Journal Supplement*, 226, 1, 10, 2016

### **Facilitating Follow-up of LIGO-Virgo Events Using Rapid Sky Localization**

Hsin-Yu Chen, Daniel E. Holz, *arXiv:1509.00055*, submitted to *ApJ*, 2015

### **The Loudest Gravitational-Wave Events**

Hsin-Yu Chen, Daniel E. Holz, *arXiv:1409.0522*, submitted to *Phys.Rev. D*, 2014

### **GRB beaming and gravitational-wave observations**

Hsin-Yu Chen, Daniel E. Holz, *Physical Review Letters*, 111, 181101, 2013

### **Galactoseismology: Discovery of Vertical Waves in the Galactic Disk**

Lawrence M. Widrow, Susan Gardner, Brian Yanny, Scott Dodelson, Hsin-Yu Chen, *The Astrophysical Journal Letters*, 750, 41, 2012

*Selected Collaboration Papers (with significant contributions):*

**Upper limits on the rates of binary neutron star and neutron-star-black-hole mergers from Advanced LIGO's first observing run**

LIGO Scientific Collaboration and Virgo Collaboration, *The Astrophysical Journal Letters*, 832, 2, L21, 2016

**Localization and broadband follow-up of the gravitational-wave transient GW150914**

LIGO Scientific Collaboration and Virgo Collaboration, *The Astrophysical Journal Letters*, 826, 1, L13, 2016

**A DECam Search for an Optical Counterpart to the LIGO Gravitational Wave Event GW151226**

Dark Energy Survey Collaboration, *The Astrophysical Journal Letters*, 826, 2, L29, 2016

**A Dark Energy Camera Search for Missing Supergiants in the LMC After the Advanced LIGO Gravitational Wave Event GW150914**

Dark Energy Survey Collaboration, *The Astrophysical Journal Letters*, 823, 2, L34, 2016

**A Dark Energy Camera Search for an Optical Counterpart to the First Advanced LIGO Gravitational Wave Event GW150914**

Dark Energy Survey Collaboration, *The Astrophysical Journal Letters*, 823, 2, L33, 2016

## OBSERVATION PROPOSALS

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### **VLA Follow-Up of DECam Optical Counterparts to ALV Gravitational Wave Events**

Awarded 12 hours at Priority A in 2017A, CoI

### **Gemini Confirmation of Optical Counterparts to LIGO/Virgo Sources Found with DECam**

Awarded 6.8 hours in 2016B, CoI

### **DECam Follow-Up of Advanced LIGO/Virgo Science Run 2 (2016B)**

Awarded 5 nights in 2016B, CoI

### **VLA Follow-Up of the First Advanced LIGO Gravitational Wave Detection**

Awarded 6 hours at Priority A in 2016A, CoI

### **DECam Follow-Up of the First Advanced LIGO/Virgo Gravitational Wave Detection (2015B)**

Awarded 3 nights in 2015B, CoI

## TEACHING EXPERIENCE

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TA, *Natural Hazards*, 2013

TA, *Evolution of the Universe*, 2012

TA, *Stellar Astronomy/Astrophysics*, 2010 & 2012

TA, *The Origin of Universe & How We Know*, 2011

## TALKS

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### **Multi-Messenger Astronomy with Advanced LIGO-Virgo**

- Rising Stars in Physics: An Academic Career Workshop for Women, October 2016

### **Optimizing the Use of 3D Information for Electromagnetic Follow-up of Advanced LIGO-Virgo Events**

- Gravitational Wave Physics and Astronomy Workshop, June 2016
- APS April Meeting, 2016

### **Observation of Gravitational Waves from a Binary Black Hole**

- The University of Chicago Physical Science Division Pizza Science Discussion, May 2016
- The Optical Society of Chicago Seminar, April 2016

### **Optimizing EM Follow-up of LIGO-Virgo Events**

- Max Planck Institute for Gravitational Physics Seminar, March 2016
- Caltech LIGO Lab Seminar, February 2016
- MIT LIGO Lab GRITTS Seminar, November 2015
- 25th Midwest Relativity Meeting, October 2015

### **Compact Binary Merger Rate, Detection, and Followup**

- AAS 227th Meeting, January 2016
- Academia Sinica Institute of Astronomy and Astrophysics Special Seminar, July 2015

- Caltech Astronomy Tea Talk, May 2015

### **Optimizing Low Latency LIGO-Virgo Localizations**

- 11th Edoardo Amaldi Conference on Gravitational Waves, June 2015
- APS April Meeting, 2015

### **Facilitating Follow-up of EM Counterparts to GW Events**

- Gravitational Wave Physics and Astronomy Workshop, June 2015
- Hot-Wiring the Transient Universe, May 2015

### **Groundwork for Optical Detection of GW Sources**

- Dark Energy Survey Chicagoland Meeting, February 2015

### **Preparing for Direct Gravitational Wave Detections**

- Dark Energy Survey Chicagoland Meeting, December 2014
- Kavli Institute for the Physics and Mathematics of the Universe lunch talk, April 2014
- Academia Sinica Institute of Astronomy and Astrophysics lunch talk, March 2014

### **The Loudest Gravitational Wave Events**

- Santa Fe Cosmology Workshop, July 2014
- Sant Cugat Forum on Astrophysics - Gravitational Wave Astrophysics, April 2014
- APS April Meeting, 2014
- 23<sup>rd</sup> Midwest Relativity Meeting, October 2013

### **GRB Beaming and Gravitational-Wave Observations**

- APS April Meeting, 2013
- 22<sup>nd</sup> Midwest Relativity Meeting, September 2012