Ronin Wu

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Professional Experiences

Japan Society for the Promotion of Science Postdoctoral Fellow, University of Tokyo, Japan 06/2014 – present

Postdoctoral Research Fellow, Service d'Astrophysique, CEA Saclay, France 12/2010 – 06/2014

Education

PhD – Department of Physics, New York University 2012

B.S. – Department of Physics, National Taiwan University 2001

Main Expertise

Scientific Expertise: star formation and galaxy evolution via gas and dust tracers in multiwavelengths.

Statistics Expertise: error propagation, Monte Carlo experiment, Bayesian inference.

Modelling Expertise: statistical modelling of large survey data; PDR modelling; molecular cloud line transfer modelling.

Data Analysis Expertise: image processing: sampling, resampling, convolving, etc.

Instrumental Expertise: *Spitzer*/IRAC/IRS, *Herschel* SPIRE/FTS/PACS, *Akari* IRC

Honors and Achievements

JSPS International Postdoctoral Fellowship (JSPS) Jun 2014 – present

The MacCracken Fellowship (NYU) Fall 2004–2010

Margaret and Herman Sokol Research Award (NYU) Spring 2008

The Chambliss Astronomy Achievement Student Award 01/10/2007
(Honorable Mention, American Astronomical Society)

Computing Skills

Python Statistical analysis and 3D image processing, including convolution, image addition, projection, etc, with libraries, including numpy, scipy, matplotlib, astropy, etc. 5 years experience.

IDL same as descriptions in Python, 12 years experience.

LaTeX Document preparation, including master and PhD dissertation and journal articles, etc. 12 years experience.

Operating System Proficient in Linux (Ubuntu) and Mac OSX environments; Familiar with Windows XP and Windows 7 environments.

Others Parallel Computing, HTML, bash, R, Mathematica, Fortran, MatLab.

Astronomy Softwares Proficient with HIPE, SPICE, IRSCLEAN, PAHFIT, RADEX, CLOUDY, Akari Pipeline etc.

Language Proficiency

Mandarin, English (Native or Bilingual) French, Japanese (Professional Working).

Community Services and Memberships

SPICA Science Team Member	12/2015 – present
The International Astronomical Union (IAU) Member	09/2015 – present
The Astronomical Society of Japan (ASJ) Full Member	12/2014 – present
SPICA MCS Core Science Member	08/2012 – 2014
Herschel SPIRE Associate Scientist	05/2012 – present
Herschel SPIRE Consortium Working Member	02/2011 – 05/2012

Successful Primary Investigator (PI) Proposals

– Subaru 2016A Service Program 2015
"Is the nuclear starburst of M83 causing a molecular outflow?"
(Priority B, Program ID: S16A–218S)

– JCMT Pilot Science Program 2015
"Dense molecular gas in the starburst nucleus of M83"
(7 hours, Program ID: m15ai024)

– ESA *Herschel Science Center* Guaranteed Time Key Program 2012
"Extreme Molecular Gas Conditions"
(2.7 hours, Program ID: KPGT_smadden01_1)

Observing Experience

Arecibo Observatory with L-band Wide Receiver 05/2009–06/2012

Selected Invited Colloquium

– Spatially resolved physical conditions of molecular gas: a zoom-in from circumnuclear region of M83 to Carina nebula
- 08/2015 Subaru Telescope, NAOJ, Hawaii, USA
- 10/2015 IRAP, Toulouse, France
- 01/2016 Division of Theoretical Astronomy, NAOJ, Tokyo, Japan

– Spatially resolved physical conditions in M83, revealed by the *Herschel*SPIRE FTS
- 01/2014 Ghent University, Belgium
- 04/2014 New York University, USA

– Herschel View of the Molecular Gas in Nearby Star-forming Regions 10/2012 The University of Tokyo, Japan

– The First Broad-range CO Ladders from the M83 Starburst Core 04/2012 Oxford University, UK

Teaching Experience

Physics Major and non-Major Subjects at New York University	Spring 2005 – Fall 2008
Mathematical Physics at National Taiwan University	Fall 2003

Full List of Refereed Publications

1. T. M. Hughes, M. Baes, M. R. P. Schirm, T. J. Parkin, **Ronin Wu**, I. De Looze, C. D. Wilson, S. Viaene, G. J. Bendo, A. Boselli, D. Cormier, E. Ibar, O. . Karczewski, N. Lu, L. Spinoglio
   The spatially-resolved correlation between [NII] 205 μm line emission and the 24 m continuum in nearby galaxies
   A&A accepted for publication, 01/2016
   arXiv: 1601.01317

2. S. Hony, D. A. Gouliermis, F. Galliano, M. Galametz, D. Cormier, C.-H. R. Chen, S. Dib, A. Hughes, R. S. Klessen, J. Roman-Duval, L. Smith, J.-P. Bernard, C. Bot, L. Carlson, K. Gordon, R. Indebetouw, V. Lebouteiller, M.-Y. Lee, S. C. Madden, M. Meixner, J. Oliveira, M. Rubio, M. Sauvage, and **Ronin Wu**
   Star-formation rates from young-star counts and the structure of the ISM across the NGC346/N66 complex in the SMC
   MNRAS, 448, 1847, 04/2015
   DOI: 10.1093/mnras/stv107

3. **Ronin Wu**; S. C. Madden; F. Galliano; C. D. Wilson; J. Kamenetzky; M.-Y. Lee; M. Schirm; S. Hony; V. Lebouteiller; L. Spinoglio; D. Cormier; J. Glenn; P. R. Maloney; M. Pereira-Santaella; A. Rémy-Ruyer; M. Baes; A. Boselli; F. Bournaud; I. De Looze; T. M. Hughes; P. Panuzzo; and N. Rangwala
   Spatially resolved physical conditions of molecular gas and potential star formation tracers in M83, revealed by the Herschel SPIRE FTS
   A&A, 575, 88, 03/2015
   DOI: 10.1051/0004-6361/201423847

4. B. M. Swinyard, E. T. Polehampton, R. Hopwood, I. Valtchanov, N. Lu, T. Fulton, D. Benielli, P. Imhof, N. Marchili, J.-P. Baluteau, G. J. Bendo, M. Ferlet, M. J. Griffin, T. L. Lim, G. Makiwa, D. A. Naylor, G. S. Orton, A. Papageorgiou, C. P. Pearson, B. Schulz, S. D. Sidher, L. D. Spencer, M. H. D. van der Wiel, **Ronin Wu**
   Calibration of the Herschel SPIRE Fourier Transform Spectrometer
   MNRAS, 440, 3658, 06/2014
   DOI: 10.1093/mnras/stu409

5. D. Cormier, S. C. Madden, V. Lebouteiller, S. Hony, S. Aalto, F. Costagliola, A. Hughes, A. Rmy-Ruyer, N. Abel, E. Bayet, F. Bigiel, J. M. Cannon, R. J. Cumming, M. Galametz, F. Galliano, S. Viti, **Ronin Wu**
   The molecular gas reservoir of 6 low-metallicity galaxies from the Herschel Dwarf Galaxy Survey: A ground-based follow-up survey of CO(1-0), CO(2-1), and CO(3-2)
   A&A, 564, 121, 04/2014
   DOI: 10.1051/0004-6361/201322096

6. Schirm, Maximilien R. P.; Wilson, Christine D.; Parkin, Tara J.; Kamenetzky, Julia; Glenn, Jason; Rangwala, Naseem; Spinoglio, Luigi; Pereira-Santaella, Miguel; Baes, Maarten; Barlow, Michael J.; Clements, Dave L.; Cooray, Asantha; De Looze, Ilse; Karczewski, Oskar Ł.; Madden, Suzanne C.; Rémy-Ruyer, Aurélie; **Wu, Ronin**
   Herschel SPIRE-FTS Observations of Excited CO and [CI] in the Antennae (NGC 4038/39): Warm and Cold Molecular Gas
   ApJ, 781, 101, 02/2014
   DOI:10.1088/0004-637X/781/2/101

7. Barbara Catinella, David Schiminovich, Luca Cortese, Silvia Fabello, Cameron B. Hummels, Sean M. Moran, Jenna J. Lemonias, Andrew P. Cooper, **Ronin Wu**, Timothy M. Heckman, Jing Wang
   The GALEX Arecibo SDSS Survey VIII *Final Data Release – The Effect of Group Environment on the Gas Content of Massive Galaxies*
   MNRAS, 436, 34, 11/2013
   DOI:10.1093/mnras/stt1417

8. **Wu, Ronin**; Polehampton, E. P.; Etxaluze, M.; Makiwa, G.; Naylor, D. A.; Salji, C.; Swinyard, B. M.; Ferlet, M.; van der Wiel, M. H. D.; Smith, A. J.; Fulton, T.; Griffin, M. J.; Baluteau, J.-P.; Benielli, D.; Hopwood, R.; Imhof, P.; Lim, T.; Lu, N.; Panuzzo, P.; Pearson, C.;Sidher, S.; Valtchanov, I.
   Observing Extended Sources with the Herschel SPIRE Fourier Transform Spectrometer
   A&A, 556, 116, 08/2013.
   DOI: 10.1051/0004-6361/201321837

9. M. Etxaluze, J. R. Goicoechea, J. Cernicharo, E. T. Polehampton, A. Noriega-Crespo, S. Molinari, B. M. Swinyard, **Ronin Wu**, and J. Bally
Herschel observations of gas and dust in the Sagittarius B2 molecular cloud
A&A, 556, 137, 08/2013.
DOI: 10.1051/0004-6361/201321258

10. A Rémy-Ruyer, S.C. Madden, F. Galliano, S. Hony, M. Sauvage, G.J. Bendo, H. Roussel, M. Pohlen, M.W.L. Smith, M. Galametz, D. Cormier, V. Lebouteiller, **Ronin Wu**, M. Baes, M.J. Barlow, M. Boquien, A. Boselli, L. Ciesla, I. De Looze, O.Ł. Karczewski.
Revealing the cold dust in low metallicity environments. I. Photometry analysis of the Dwarf Galaxy Survey with Herschel
A&A, 557, 95, 09/2013.
DOI: 10.1051/0004-6361/201321602

11. S. C. Madden, A. Remy Ruyer, M. Galametz, D. Cormier, V. Lebouteiller, F. Galliano, S. Hony, G. J. Bendo, M. W. L. Smith, M. Pohlen, H. Roussel, M. Sauvage, **Ronin Wu**, E. Sturm, A. Poglitsch, A. Contursi, V. Doublier, M. Baes, M. J. Barlow, A. Boselli, M. Boquien, L. R. Carlson, L. Ciesla, A. Cooray, L. Cortese, I. De Looze, J. A. Irwin, K. Isaak, J. Kamenetzky, O.L. Karczewski, N. Lu, J. A. MacHattie, B. O Halloran, T. J. Parkin, N. Rangwala, M. R. P. Schirm, B. Schulz, L. Spinoglio, M. Vaccari, C. D. Wilson, H. Wozniak
An Overview of the Dwarf Galaxy Survey
PASP, 125, 600, 06/2013.
DOI: 10.1086/671138

12. Lebouteiller, V; Cormier, D.; Madden, S. C.; Galliano, F.; Indebetouw, R.; Abel, N.;Sauvage, M.; Hony, S.; Contursi, A.; Poglitsch, A.; Remy, A.; Sturm, E.; **Wu, Ronin**
Physical conditions in the gas phases of the giant HII region LMC-N11 unveiled by Herschel I. Diffuse [CII] and [OIII] emission in LMC-N11B
A&A, 548, 91L, 12/2012
DOI: 10.1051/0004-6361/201218859

13. Cormier, D.; Lebouteiller, V.; Madden, S. C.; Abel, N.; Hony, S.; Galliano, F.; Baes, M.; Barlow, M. J.; Cooray, A.; De Looze, I.; Galametz, M.; Karczewski, O. L.; Parkin, T. J.; Remy, A.; Sauvage, M.; Spinoglio, L.; Wilson, C. D.; **Wu, Ronin**
The nature of the interstellar medium of the starburst low-metallicity galaxy Haro11: a multi-phase model of the infrared emission
A&A, 548, 20, 12/2012
DOI: 10.1051/0004-6361/201219818

14. Barbara Catinella, David Schiminovich, Guinevere Kauffmann, Silvia Fabello, Cameron Hummels, Jenna Lemonias, Sean M. Moran, **Ronin Wu**, Andrew P. Cooper, Jing Wang
The GALEX Arecibo SDSS Survey VI *Second data release and updated gas fraction scaling relations*
A&A, 544, 65, 08/2012
DOI:10.1111/j.1365-2966.2010.17210.x

15. Kamenetzky, J.; Glenn, J.; Rangwala, N.; Maloney, P.; Bradford, M.; Wilson, C. D.; Bendo, G. J.; Baes, M.; Boselli, A.; Cooray, A.; Isaak, K. G.; Lebouteiller, V.; Madden, S.; Panuzzo, P.; Schirm, M. R. P.; Spinoglio, L.; **Wu,Ronin**
Herschel-SPIRE Imaging Spectroscopy of Molecular Gas in M82
ApJ, 753, 70, 07/2012
DOI: 10.1088/0004-637X/753/1/70

16. Barbara Catinella, Guinevere Kauffmann, David Schiminovich, Jenna Lemonias, Cecilia Scannapieco, Jing Wang, Silvia Fabello, Cameron Hummels, Sean M. Moran, **Ronin Wu**, Andrew Cooper, Riccardo Giovanelli, Martha P. Haynes, Timothy M. Heckman, Amélie Saintonge
The GALEX Arecibo SDSS Survey IV *– Baryonic mass-velocity-size relations of massive galaxies*
MNRAS, 420, 1959, 03/2012
DOI:10.1111/j.1365-2966.2011.20012.x

17. Moran, Sean M.; Heckman, Timothy M.; Kauffmann, Guinevere; Dav, Romeel; Catinella, Barbara; Brinchmann, Jarle; Wang, Jing; Schiminovich, David; Saintonge, Amélie; Gracia-Carpio, Javier; Tacconi, Linda; Giovanelli, Riccardo; Haynes, Martha; Fabello, Silvia; Hummels, Cameron; Lemonias, Jenna; **Wu, Ronin**
The GALEX Arecibo SDSS Survey V *– The Relation between the HI Content of Galaxies and Metal Enrichment*

at Their Outskirts
ApJ, 745, 66, 01/2012
DOI:10.1088/0004-637X/745/1/66

18. **Ronin Wu**, David W. Hogg and John Moustakas
The Aromatic Features in Very Faint Dwarf Galaxies
ApJ, 730, 111, 04/2011
DOI:10.1088/0004-637X/730/2/111

19. David Schiminovich, Barbara Catinella, Guinevere Kauffmann, Silvia Fabello, Jing Wang, Cameron Hummels, Jenna Lemonias, Sean M. Moran, **Ronin Wu**, Riccardo Giovanelli, Martha P. Haynes, Timothy M. Heckman and GASS Team
The GALEX Arecibo SDSS Survey II *– The star formation efficiency of massive galaxies*
MNRAS, 408, 919, 10/2010
DOI:10.1111/j.1365-2966.2010.17210.x

20. Barbara Catinella, David Schiminovich, Guinevere Kauffmann, Silvia Fabello, Jing Wang, Cameron Hummels, Jenna Lemonias, Sean M. Moran, **Ronin Wu**, Riccardo Giovanelli, Martha P. Haynes, Timothy M. Heckman and GASS Team
The GALEX Arecibo SDSS Survey I *– Gas Fraction Scaling Relations of Massive Galaxies and First Data Release*
MNRAS, 403, 687, 04/2010
DOI:10.1111/j.1365-2966.2009.16180.x

References

– Prof. Takashi Onaka (Current research host)
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