

# Xing Lu

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## Ph.D Candidate, expected to graduate in March 2016

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## Research Interests

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Sub-pc scale physical conditions in high-mass star forming regions, kinematics and evolution of filaments, star formation in the Galactic Center molecular clouds.

## Education

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- Sep. 2010–Present      Ph.D Candidate Astronomy, School of Astronomy & Space Science, Nanjing University  
Advisors: Qizhou Zhang and Qiusheng Gu  
Research: Dense cores in star forming regions; high-mass star formation in Infrared Dark Clouds; star formation in the Galactic Center clouds.  
Curriculum: Radiation Processes in Astrophysics, Stellar Formation and Evolution, Magnetohydrodynamics, Introduction to General Relativity, Radio Astronomy, Physics of Neutron Stars.
- Sep. 2006–Jun. 2010    B. S. Physics, Kuang Yaming Honor School, Nanjing University  
GPA: 4.37/5.00      Major GPA: 4.45/5.00

## Professional Experience

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- Mar. 2012–Aug. 2015    Predoctoral Fellow at Harvard-Smithsonian Center for Astrophysics (Advisor: Qizhou Zhang).
- May 2011–Present      Administrator and contributor of *Astroleaks*, an on-line platform for academic discussion and experience-sharing.
- Sep. 2011–Jan. 2012    Teaching Assistant for Undergraduate Course *Observational Astronomy* at Nanjing University (Professor: Junzhi Wang).
- Mar. 2010–Jun. 2010    Undergraduate Research Participant at Nanjing University (Advisor: Yang Chen), data reduction and analysis of the CO(1–0) observations taken with the KOSMA telescope toward the supernova remnant W41.
- Sep. 2009–Feb. 2010    Associate Editor of the journal *College Natural Science*, a nationwide students' self-managed publication.

## Programming Skills

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Mastered in Python and IDL programming languages. Created *three Python applications* for data analysis and visualization. Skillful in Mathematica and Javascript.

## Publications in Refereed Journals

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1. *Initial Fragmentation in the Infrared Dark Cloud G28.53-0.25*, **Lu**, X., Zhang, Q., Wang, K., & Gu, Q. 2015, *ApJ*, **805**, 171
2. *Fragmentation of Molecular Clumps and Formation of Protocluster*, Zhang, Q., Wang, K., **Lu**, X., & Jiménez-Serra, I. 2015, *ApJ*, **804**, 141

3. *VLA Observations of Ammonia in High-mass Star Formation Regions*, **Lu**, X., Zhang, Q., Liu, H. B., Wang, J., & Gu, Q. 2014, **ApJ**, **790**, 84

### Papers in Preparation

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1. *Deeply Embedded Protostellar Population in the 20 km s<sup>-1</sup> Cloud in the Central Molecular Zone*, **Lu**, X. et al., completed and ready to be submitted to ApJ Letters by Sept. 30, 2015.
2. *Gas Kinematics, Thermology, and Star Formation Potential of the 20 km s<sup>-1</sup> Cloud*, **Lu**, X. et al., in preparation.

### Conference Contributions

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1. *SMA and VLA Observations of Dense Cores at Different Evolutionary Phases in Filamentary IRDCs*, **Lu**, X. & Zhang, Q. 2014, **Workshop on Dense Cores: Origin, Evolution, and Collapse, AAS Topical Conference Series**.
2. *Molecular Spectral Lines in Filamentary Infrared Dark Clouds*, **Lu**, X., Zhang, Q., & Liu, H. B. 2014, **69th International Symposium on Molecular Spectroscopy**.
3. *Gas Kinematics in Filamentary Infrared Dark Clouds*, **Lu**, X., Zhang, Q., & Liu, H. B. 2014, **American Astronomical Society, AAS Meeting #224**.
4. *SMA Observations towards Massive Clouds in the Central Molecular Zone*, **Lu**, X., Zhang, Q., Kauffmann, J., & Pillai, T. 2013, **International Astronomical Union Symposium 303: The Galactic Center: Feeding and feedback in a normal galactic nucleus**.

### Successful PI Observation Proposals

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- 2014 IRAM 30m, *Filamentary Structure, Infall Convergent Flow and Massive Star Formation*  
 2014 SMA, *Massive Star Formation in Progress in Filamentary Clouds*  
 2013 SMA, *Sgr B2: A Star-forming Cloud in the Central Molecular Zone*  
 2013 SMA, *Gas Kinematics in Filamentary Infrared Dark Clouds*  
 2013 SMA, *High-mass Clouds in the Central Molecular Zone*  
 2012 SMA, *Gas Kinematics and Condensations in Filamentary Infrared Dark Clouds*

### Participated Large Scale Proposals

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- 2014–2015 SMA, PIs: C. Battersby & E. Keto, *The SMA Legacy Survey of the Central Molecular Zone*

### Observing Experience

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- 2014 SMA, on-site observing, Mauna Kea, HI, USA  
 2014 CSO, remote observing, Cambridge, MA, USA  
 2012 CARMA, on-site observing, Big Pine, CA, USA (during CARMA summer school)  
 2012 SMA, on-site observing, Mauna Kea, HI, USA  
 2012 DLH 13.7m telescope, on-site observing, Delingha, Qinghai, China

### Honors

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- 2015 Nanjing University Excellent Ph.D Candidates Advanced Innovation Program, Plan A  
 2012 Submillimeter Array (SMA) Pre-doctoral Fellowship  
 2011 Nanjing University Zhengzhiwei Enterprise Scholarship  
 2009 Nanjing University Social Activity Scholarship, Second Prize  
 2008 Nanjing University People's Scholarship, Second Prize  
 2007 Nanjing University People's Scholarship, Second Prize