

PATRICIO SANHUEZA
Curriculum Vitae

April 13, 2025

Department of Astronomy
School of Science

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The University of Tokyo
7-3-1 Hongo, Bunkyo, Tokyo 113-0033, Japan

Research Interests Early stages of high-mass star formation; Infrared dark clouds; Clump fragmentation and chemistry; Binary formation; Polarization observations and magnetic fields; Infall streamers; Accretion disks; Radio telescopes and interferometers

Positions

ASSOCIATE PROFESSOR Department of Astronomy The University of Tokyo	2025 – Present
RESEARCH STAFF Department of Earth and Planetary Sciences Institute of Science Tokyo	2024 – 2025
PROJECT ASSISTANT PROFESSOR ALMA Project, East Asian ALMA Regional Center (EA-ARC) National Astronomical Observatory of Japan (NAOJ)	2019 – 2024
ASSISTANT PROFESSOR Department of Astronomical Science SOKENDAI (The Graduate University for Advanced Studies)	2020 – 2024
NAOJ RESEARCH PROJECT FELLOW (ALMA) ALMA Project, East Asian ALMA Regional Center (EA-ARC) National Astronomical Observatory of Japan (NAOJ)	2014 – 2019

Education

PH.D., ASTRONOMY Boston University (USA), Advisor: James M. Jackson Thesis Title: “Characterizing Molecular Clouds in the Earliest Phases of High-Mass Star Formation”	2014
M.SC., ASTRONOMY Universidad de Chile (Chile), Advisors: Guido Garay & Leonardo Bronfman Thesis Title: “Molecular Outflows within the Filamentary Infrared Dark Cloud G34.43+0.24”	2008
B.SC., PHYSICS Universidad de Chile (Chile)	2004

Publications Total number of 167 refereed publications (5,370 citations)
1st author of 7 refereed publications (774 citations)
2nd author of 27 refereed publications (734 citations, including 8 student papers)
Co-author on 122 additional refereed publications (3,574 citations)
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Paternity Leave	FIRST CHILD	2017/11 – 2018/01
	SECOND CHILD	2024/02 – 2024/03
Grants	MAGMAR: MAGNETIC FIELDS IN MASSIVE STAR-FORMING REGIONS KAKENHI: <i>Grant-in-Aid for Scientific Research (B)</i> Competitive, peer-reviewed funding granted by the Japan Society for the Promotion of Science (JSPS) to provide financial support to all scientific research <u>Dr. Junhao Liu has been hired</u> to work on the program Total amount awarded: 18,590,000 Japanese Yen PI: Patricio Sanhueza	2023-2026
	STUDYING MAGNETIZED BINARY STAR FORMATION WITH ALMA KAKENHI: <i>Grant-in-Aid for Scientific Research (B)</i> Competitive, peer-reviewed funding granted by the Japan Society for the Promotion of Science (JSPS) to provide financial support to all scientific research <u>Dr. Piyali Saha has been hired</u> as postdoc to work with Patricio Sanhueza Total amount awarded: 17,420,000 Japanese Yen PIs: Chat Hull & Patricio Sanhueza (Sanhueza is making the full administration of the project)	2022-2025
	ALMA-IMF: ALMA TRANSFORMS THE VIEW OF THE ORIGIN OF STELLAR MASSES KAKENHI: <i>Grant-in-Aid for Scientific Research (B)</i> Competitive, peer-reviewed funding granted by the Japan Society for the Promotion of Science (JSPS) to provide financial support to all scientific research <u>Dr. Benjamin Wu was hired</u> during 2018-2020 to work on the ALMA large program Total amount awarded: 17,160,000 Japanese Yen PI: Patricio Sanhueza	2018-2021
	HIGH-MASS STAR FORMATION WITH ALMA <i>NAOJ Visiting Joint Research</i> Competitive, peer-reviewed funding to cost the trip and 1 month stay of Dr. Paulo Cortes from Chile to NAOJ, Mitaka, Japan Total amount awarded: 420,000 Japanese Yen PI: Patricio Sanhueza	2022
	ALMA LARGE PROGRAM. ALMA-IMF: ALMA TRANSFORMS OUR VIEW OF THE ORIGIN OF STELLAR MASSES <i>NAOJ Visiting Joint Research</i> Competitive, peer-reviewed funding to cost the trip and 1 month stay of Dr. Hong-Li Liu from Chile to NAOJ, Mitaka, Japan Total amount awarded: 380,000 Japanese Yen PI: Patricio Sanhueza	2018
	A SURVEY OF PRESTELLAR, HIGH-MASS CLUSTER-FORMING CLUMPS: CONSTRAINING MODELS OF HIGH-MASS STAR FORMATION <i>NAOJ Visiting Fellows Program</i> Competitive, peer-reviewed funding to cost the trip and 2 weeks stay of Dr. Yanett Contreras from Netherlands to NAOJ, Mitaka, Japan Total amount awarded: 250,000 Japanese Yen PI: Patricio Sanhueza	2016
	A SURVEY OF PRESTELLAR, HIGH-MASS CLUSTER-FORMING CLUMPS: CONSTRAINING MODELS OF HIGH-MASS STAR FORMATION	2016

NAOJ Visiting Fellows Program

Competitive, peer-reviewed funding to cost the trip and 2 weeks stay of
Dr. Andrés E. Guzmán from Chile to NAOJ, Mitaka, Japan

Total amount awarded: 250,000 Japanese Yen, PI: Patricio Sanhueza

Honors	PRESIDENTIAL FELLOW Boston University	2008 – 2009
	ASTRONOMY DEPARTMENT SCHOLAR Universidad de Chile	2005 – 2008
	FONDAP FELLOW Universidad de Chile	2005 – 2008
	PAE SCHOLAR Universidad de Chile	2002 – 2004
Research Experience	GRADUATE STUDENT RESEARCH ASSISTANT, BOSTON UNIVERSITY Supervisor: Professor James M. Jackson “Chemistry and Fragmentation of Infrared Dark Cloud Clumps”	2009 – 2014
	GRADUATE STUDENT RESEARCH ASSISTANT, UNIVERSIDAD DE CHILE Supervisor: Professor Guido Garay & Leonardo Bronfman “Molecular Outflows within the Filamentary Infrared Dark Cloud G34.43+0.2”	2006 – 2008
	GRADUATE STUDENT RESEARCH ASSISTANT, UNIVERSIDAD DE CHILE Supervisor: Professor Rene Mendez “Study of Galactic Structure and Local Stellar Populations”	2005 – 2006
	UNDERGRADUATE STUDENT RESEARCH ASSISTANT, UNIVERSIDAD DE CHILE Supervisor: Professor Roberto Morales & anthropologist Eugenio Aspillaga “Spectral Analysis of Human Bones using GIXE (Gamma-ray Induced X-ray Emission) and PIXE (Proton Induced X-ray Emission) Methods”	2003 – 2004
Observing Experience	SINGLE-DISH RADIO TELESCOPES: Mopra (~400 hours) Nobeyama (~100 hours)	
	RADIO INTERFEROMETERS: ALMA (100 hours) SMA (56 hours) ATCA (40 hours) CARMA (7 hours)	
	OPTICAL TELESCOPES: CTIO 0.9 m (6 nights)	
Successful PI Observing Proposals	31. ALMA, <i>April 2024</i> (14.4 HOURS FOR ALMA; 64.1 HOURS FOR ACA) DUST TEMPERATURES IN 70 μm DARK IRDCs Patricio Sanhueza & Andres Guzman	

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30. ALMA, *April 2024* (40 HOURS FOR ALMA)
 UNCOVERING THE ROLE OF THE MAGNETIC FIELD IN STREAMERS
Patricio Sanhueza, PAULO CORTES, KAHU MORII, JOSEP GIRART, FERNANDO OLGUIN, PIYALI SAHA, JUNHAO LIU, QIU YI LUO, & KEI TANAKA
29. ALMA, *May 2023* (14.4 HOURS FOR ALMA; 64.1 HOURS FOR ACA)
 DUST TEMPERATURES IN 70 μm DARK IRDCs
Patricio Sanhueza & Andres Guzman
28. **ALMA Large Program**, *May 2023* (81.3 HOURS FOR ALMA; 313.1 HOURS FOR ACA; 647.6 HOURS FOR TP)
 UNVEILING THE INITIAL CONDITIONS OF HIGH-MASS STAR-FORMATION (ALMA-UNIC)
PIs: Elena Redaelli (EU), Stefano Bovino (CL), **Patricio Sanhueza (EA)**, Vivien Chen (EA), Rachel Friesen (NA)
CO-Is: Thushara Pillai, Alessandro Lupi, Dario Colombo, Laura Gomez, Shuo Kong, Fernando Olguin, Jaime Pineda, David Rebolledo, Dominik Schleicher, Friedrich Wyrowski, Qizhou Zhang, Fumitaka Nakamura, Shanghuo Li, Giovanni Sabatini, Kaho Morii, Tommaso Grassi, Andrea Giannetti, Manuel Merello, Paulo Cortes, Daniele Galli, Marco Padovani, Farideh Sadat Tabatabaei, Yu Cheng, & Paola Caselli
27. ALMA, *April 2022* (40 HOURS FOR ALMA)
 THE FORMATION OF HIGH-MASS BINARIES AND THEIR ACCRETION DISKS
Patricio Sanhueza, Fernando Olguin, Adam Ginsburg, Yoko Oya, Masao Saito, Shanghuo Li, Xing Lu, Andrea Silva, Kaho Morii, Fumitaka Nakamura, Takeshi Sakai, Kousuke Ishihara, Andres Guzman, & Yu Cheng
26. ALMA, *April 2022* (14.4 HOURS FOR ALMA; 64.1 HOURS FOR ACA)
 DUST TEMPERATURES IN 70 μm DARK IRDCs
Patricio Sanhueza & Andres Guzman
25. ALMA, *April 2021* (15.2 HOURS FOR ALMA)
 MAGNETIC FIELDS IN HIGH-MASS STAR FORMATION
Patricio Sanhueza, Fumitaka Nakamura, Josep Girart, Ian Stephens, Patrick Koch, Ya-Wen Tang, Vivian Chen, Paulo Cortes, Benoit Commercon, Patrick Hennebelle, Qizhou Zhang, Huabai Li, Andrea Silva, Ken'ichi Tatematsu, Xing Lu, James Jackson, Yanett Contreras, Takeshi Sakai, & Benjamin Wu
24. ALMA, *September 2019* (25.8 HOURS FOR ACA)
 DUST TEMPERATURES IN THE ASHES
Patricio Sanhueza & Andres Guzman
23. ALMA, *April 2019* (16.3 HOURS FOR ALMA)
 THE FORMATION OF HIGH-MASS BINARY SYSTEMS BY CORE/DISK FRAGMENTATION
Patricio Sanhueza, Fumitaka Nakamura, Vivien Chen, James Jackson, Qizhou Zhang, Ken Tatematsu, Yanett Contreras, Andrea Silva, Takeshi Sakai, Satoshi Ohashi, Xing Lu, Rie Miura, Kazuya Saigo, & Quang Nguyen Luong
22. ALMA, *April 2018* (15.2 HOURS FOR ALMA)
 MAGNETIC FIELDS IN HIGH-MASS STAR FORMATION
Patricio Sanhueza, Fumitaka Nakamura, Josep Girart, Ian Stephens, Patrick Koch, Ya-Wen Tang, Vivian Chen, Paulo Cortes, Benoit Commercon, Patrick Hennebelle, Qizhou Zhang, Huabai Li, Andrea Silva, Ken'ichi Tatematsu, Xing Lu, James Jackson, Yanett Contreras, Takeshi Sakai, Benjamin Wu, Quang Nguyen Luong, Kazuya Saigo, & Toshiki Saito
21. ALMA, *April 2018* (13.1 HOURS FOR ALMA; 96.6 HOURS FOR ACA)
 A SURVEY OF PRESTELLAR, HIGH-MASS CLUMP CANDIDATES:

CONSTRAINING MODELS OF HIGH-MASS STAR FORMATION

Patricio Sanhueza, Fumitaka Nakamura, James Jackson, Yanett Contreras, Qizhou Zhang, Takeshi Sakai, Andres Guzman, Satoshi Ohashi, Quang Nguyen Luong, Andrea Silva, Henrik Beuther, Rie Miura, Xing Lu, Ken'ichi Tatematsu, & Kazuya Saigo

20. ALMA, *April 2018* (16.3 HOURS FOR ALMA)

THE FORMATION OF HIGH-MASS BINARY SYSTEMS BY CORE/DISK FRAGMENTATION

Patricio Sanhueza, Fumitaka Nakamura, Vivien Chen, James Jackson, Qizhou Zhang, Ken Tatematsu, Yanett Contreras, Andrea Silva, Takeshi Sakai, Satoshi Ohashi, Xing Lu, Rie Miura, Kazuya Saigo, & Quang Nguyen Luong

19. **ALMA Large Program**, *April 2017* (63.5 HOURS FOR ALMA; 296.8 HOURS FOR ACA)
ALMA-IMF: ALMA TRANSFORMS OUR VIEW OF THE ORIGIN OF STELLAR MASSES

PIs: Frederique Motte (EU), Adam Ginsburg (NA), **Patricio Sanhueza (EA)**, Fabien Louvet (CL)

CO-Is: Sylvain Bontemps, Timea Csengeri, Fabrice Herpin, Jordan Molet, Andres Guzman, John Bally, Cara Battersby, Brian Svoboda, James Di Francesco, Roberto Galvan-Madrid, Leonardo Bronfman, Quang Nguyen Luong, Fumitaka Nakamura, Thomas Nony, Ana López-Sepulcre, Bilal Ladjelate, Kenneth Marsh, Antoine Gusdorf, Patrick Hennebelle, Jonathan Braine, Satoshi Ohashi, Ken'ichi Tatematsu, Takeshi Sakai, Xing Lu, Vivien Chen, Nicolas Reyes, Ricardo Finger, Karl Menten, Erik Rosolowsky, & Gilberto Gomez

18. ALMA, *April 2017* (15 HOURS FOR ALMA)

MAGNETIC FIELDS IN HIGH-MASS STAR FORMATION

Patricio Sanhueza, Fumitaka Nakamura, Josep Girart, Ian Stephens, Patrick Koch, Ya-Wen Tang, Vivian Chen, Paulo Cortes, Benoit Commercon, Patrick Hennebelle, Qizhou Zhang, Huabai Li, Andrea Silva, Ken'ichi Tatematsu, Xing Lu, James Jackson, Yanett Contreras, Takeshi Sakai, Benjamin Wu, Quang Nguyen Luong, Kazuya Saigo, & Toshiki Saito

17. ALMA, *April 2017* (12.1 HOURS FOR ALMA; 102.8 HOURS FOR ACA)

A SURVEY OF PRESTELLAR, HIGH-MASS CLUMP CANDIDATES:

CONSTRAINING MODELS OF HIGH-MASS STAR FORMATION

Patricio Sanhueza, Fumitaka Nakamura, James Jackson, Yanett Contreras, Qizhou Zhang, Takeshi Sakai, Andres Guzman, Satoshi Ohashi, Quang Nguyen Luong, Andrea Silva, Henrik Beuther, Rie Miura, Xing Lu, Ken'ichi Tatematsu, & Kazuya Saigo

16. ALMA, *April 2017* (14.8 HOURS FOR ALMA)

THE FORMATION OF HIGH-MASS BINARY SYSTEMS BY CORE/DISK FRAGMENTATION

Patricio Sanhueza, Fumitaka Nakamura, Vivien Chen, James Jackson, Qizhou Zhang, Ken Tatematsu, Yanett Contreras, Andrea Silva, Takeshi Sakai, Satoshi Ohashi, Xing Lu, Rie Miura, Kazuya Saigo, & Quang Nguyen Luong

15. ALMA, *April 2016* (6 HOURS FOR ALMA)

REVEALING THE IMPORTANCE OF MAGNETIC FIELDS IN THE EARLIEST STAGES OF THE FORMATION OF HIGH-MASS STARS

Patricio Sanhueza, Fumitaka Nakamura, James Jackson, Qizhou Zhang, Robert Brauer, Sebastian Wolf, Josep Girart, Ken Tatematsu, Koji Sugitani, Ian Stephens, Sadia Hoq, Takeshi Sakai, Satoshi Ohashi, Andres Guzman, Ke Wang, Yanett Contreras, & Quang Nguyen Luong

14. ALMA, *April 2016* (5.7 HOURS FOR ALMA; 48.4 HOURS FOR ACA)

A SURVEY OF PRESTELLAR, HIGH-MASS CLUSTER-FORMING CLUMPS:

CONSTRAINING MODELS OF HIGH-MASS STAR FORMATION

Patricio Sanhueza, Ken'ichi Tatematsu, Fumitaka Nakamura, James Jackson, Yanett Contreras, Qizhou Zhang, Andres Guzman, Tie Liu, Takeshi Sakai, Guido Garay, Masao Saito, & Satoshi Ohashi

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13. ALMA, *April 2016* (13.5 HOURS FOR ALMA)
 THE FORMATION OF HIGH-MASS BINARY SYSTEMS BY CORE/DISK FRAGMENTATION
Patricio Sanhueza, Fumitaka Nakamura, James Jackson, Qizhou Zhang, Vivien Chen, Ken Tatematsu, Rie Miura, Satoshi Ohashi, Yanett Contreras, Sadia Hoq, Takeshi Sakai, & Andrea Silva

 12. ALMA, *April 2016* (1.8 HOURS FOR ALMA; 8.9 HOURS FOR ACA)
 INVESTIGATING A YOUNG, EXTREME HIGH-MASS STAR-FORMING REGION
Patricio Sanhueza, Ian Stephens, James Jackson, Taylor Hogge, Jill Rathborne, Yanett Contreras, Kathleen Kraemer, Satoshi Ohashi, & Ken Tatematsu

 11. ALMA, *May 2015* (4.5 HOURS FOR ALMA; 18 HOURS FOR ACA)
 A SURVEY OF PRESTELLAR, HIGH-MASS CLUSTER-FORMING CLUMPS:
 CONSTRAINING MODELS OF HIGH-MASS STAR FORMATION
Patricio Sanhueza, Ken'ichi Tatematsu, Fumitaka Nakamura, James Jackson, Yanett Contreras, Qizhou Zhang, Andres Guzman, Tie Liu, Takeshi Sakai, Guido Garay, Masao Saito, & Satoshi Ohashi

 10. NOBEYAMA, *December 2014* (28 HOURS)
 DETERMINING THE ACCRETION RATES AND INFALL TIMES IN FILAMENTS
 HOSTING HIGH-MASS, PRESTELLAR CLUMPS
Patricio Sanhueza, Fumitaka Nakamura, Takeshi Sakai, Ken'ichi Tatematsu, Kazuya Saigo, Aya Higuchi, Satoshi Ohashi, Andres Guzman, & Quang Nguyen-Luong

 9. NOBEYAMA, *December 2014* (16 HOURS)
 ESTIMATING THE MAGNETIC FIELD STRENGTH IN A HIGH-MASS, PRESTELLAR CLUMP
 BY USING A NEW METHOD ASSUMING AMBIPOLAR DIFFUSION
Patricio Sanhueza, Fumitaka Nakamura, Ken'ichi Tatematsu, Hiroko Shinnaga, Takeshi Sakai, Kazuya Saigo, & Josep Girart

 8. ATCA, *December 2013* (24 HOURS)
 TESTING MODELS OF HIGH-MASS STAR FORMATION IN PRESTELLAR
 HIGH-MASS CLUSTER-FORMING CLUMPS
Patricio Sanhueza, James Jackson, Yanett Contreras, Andres Guzman, & Jill Rathborne

 7. EVLA, *August 2013* (24 HOURS)
 FRAGMENTATION OF HIGH-MASS CLUMPS THROUGH DIFFERENT
 EVOLUTIONARY STAGES IN THE SNAKE
Patricio Sanhueza, James Jackson, Ke Wang, Andres Guzman, & Qizhou Zhang

 6. SMA, *August 2013* (16 HOURS)
 FRAGMENTATION OF HIGH-MASS CLUMPS THROUGH DIFFERENT
 EVOLUTIONARY STAGES IN THE SNAKE
Patricio Sanhueza, Andres Guzman, Qizhou Zhang, Ke Wang, Xing Lu & James Jackson

 5. SMA, *February 2013* (8 HOURS)
 REVEALING THE INITIAL CONDITIONS OF HIGH-MASS STAR FORMATION:
 THE INTRIGUING CASE OF IRDC G028.23-00.19
Patricio Sanhueza, James M. Jackson, & Qizhou Zhang

 4. ATCA, *December 2012* (24 HOURS)
 USING NH₃ TO MEASURE FRAGMENTATION IN PRESTELLAR CLUMPS
Patricio Sanhueza, James M. Jackson, James Green, & Jonathan Foster

 3. CARMA, *December 2011* (43 HOURS)
 CHEMISTRY IN THE INFRARED DARK CLOUD G028.53

Patricio Sanhueza, James M. Jackson, Thushara Pillai, John Carpenter, Jonathan Foster, & Qizhou Zhang

2. EVLA, *August 2011* (10 HOURS)

CHARACTERIZING THE EARLIEST STAGES OF MASSIVE STAR FORMATION AND TESTING MODELS

Patricio Sanhueza, James M. Jackson, Qizhou Zhang, Jonathan Foster, & Ke Wang

1. CARMA, *May 2011* (9 HOURS)

CHEMICAL CLOCKS IN INFRARED DARK CLOUDS

Patricio Sanhueza, James M. Jackson, Thushara Pillai, John Carpenter, Jonathan Foster, Qizhou Zhang, & Andrea Silva

Teaching & Mentoring Experience

SUPERVISOR, QIUYI LUO, SHANGHAI ASTRONOMICAL OBSERVATORY (SHAO)	
VISITING NAOJ AS OVERSEAS INTERN	2024 - 2025
Ph.D. student studying the formation of binaries in high-mass star-forming regions using ALMA observations	
SUPERVISOR, KOUSUKE ISHIHARA, SOKENDAI - NAOJ	2020 - 2025
Ph.D. student analyzing ALMA observations of hot cores (DIHCA Survey)	
CO-SUPERVISOR, KAHU MORII, UNIVERSITY OF TOKYO - NAOJ	2020 - 2025
Ph.D. student analyzing ALMA observations of the ASHES Survey	
CO-SUPERVISOR, HIDEAKI TAKEMURA, SOKENDAI - NAOJ	2019 - 2020
Ph.D. student analyzing ALMA observations of the IRDC Survey	
I only supervise this specific project of his Ph.D.	
CO-SUPERVISOR, ATSUSHI SAITO, THE UNIV. OF ELECTRO-COMMUNICATIONS	2017-2018
Master degree student analyzing filaments inside IRDC G028.23-00.19 using EVLA and GBT observations of NH ₃	
CO-SUPERVISOR, SATOSHI OHASHI, THE UNIVERSITY OF TOKYO - NAOJ	2015-2017
Ph.D. student analyzing the core mass function of an IRDC with ALMA	
I only supervised this specific project of his Ph.D.	
CO-SUPERVISOR, ATSUSHI SAITO, THE UNIVERSITY OF ELECTRO-COMMUNICATIONS	2016
Undergraduate student analyzing filaments inside IRDC G028.23-00.19 using EVLA and GBT observations of NH ₃	
CO-SUPERVISOR, KOKI MURAKAMI, NATIONAL ASTRONOMICAL OBSERVATORY OF JAPAN	2016
Undergraduate Summer student that worked on ALMA data measuring core masses and evaluating their dynamical state	
MENTOR, FRANCESCA SCHIAVELLO, BOSTON UNIVERSITY	2013
Undergraduate student looking for infall profiles in HCO ⁺ using the MALT90 Survey.	
MENTOR, JOHN HARTINGER, BOSTON UNIVERSITY	2013
Undergraduate student using <i>Herschel</i> dust temperatures to test <i>Spitzer</i> IR evolutionary classification.	
TEACHING FELLOW, BOSTON UNIVERSITY	2012
Astronomy 105: led discussion sections focused on how to discover extrasolar planets.	

	MENTOR, SADIA HOQ, BOSTON UNIVERSITY Undergraduate student calculating NH ₃ temperatures in IRDCs	2011
	MENTOR, JOSHUA L. MASCOOP, BOSTON UNIVERSITY Undergraduate student doing an IR classification of the evolutionary stages of high-mass star formation.	2010
	MENTOR, THOMAS BRIDGES-LYMAN, BOSTON UNIVERSITY Summer intern studying the chemistry of high-mass star-forming clumps.	2009
	TEACHING FELLOW, UNIVERSIDAD DE CHILE Physics Laboratory V for Physics Majors: laboratory sections focused on radioactivity (X-rays and γ -rays).	2004
	TEACHING FELLOW, UNIVERSIDAD DE CHILE Physics Laboratory II for Chemistry and Biology Majors: laboratory sections focused on electricity.	2004
	TEACHING FELLOW, UNIVERSIDAD DE CHILE Physics Laboratory III for Physics Majors: laboratory sections focused on electricity and magnetism.	2003
Selected Talks	EPS SEMINAR, INSTITUTE OF SCIENCE TOKYO Invited Speaker Tokyo, Japan	2024
	EAST ALMA SCIENCE WORKSHOP, SEOUL NATIONAL UNIVERSITY Contributed Talk Seoul, Korea	2024
	MAGNETIC FIELDS FROM CLOUDS TO STARS CONFERENCE, NAOJ Contributed Talk Mitaka, Tokyo, Japan	2024
	STELLAR ORIGINS: NAOJ & TOKYO TECH STAR FORMATION WORKSHOP, NAOJ & TOKYO INSTITUTE OF TECHNOLOGY Invited Speaker Mitaka, Tokyo, Japan	2023
	STAR FORMATION MINI-WORKSHOP, NAOJ Invited Speaker Mitaka, Tokyo, Japan	2023
	STAR FORMATION WORKSHOP, FROM CLOUDS TO CORES, NAOJ Invited Speaker Mitaka, Tokyo, Japan	2023
	EAST ASIAN ALMA SCIENCE WORKSHOP, ACADEMIA SINICA, INSTITUTE OF ASTRONOMY AND ASTROPHYSICS (ASIAA) Invited Speaker Taipei, Taiwan	2023
	ALMA-DoS SEMINAR, NATIONAL ASTRONOMICAL OBSERVATORY OF JAPAN Invited Speaker Mitaka, Tokyo, Japan	2022

EA ALMA DEVELOPMENT WORKSHOP 2022 Lead final discussion session Mitaka, Tokyo, Japan	2022
TALK SERIES ON ALMA OPERATIONS: HELPDESK Mitaka, Tokyo, Japan	2022
TALK SERIES ON ALMA OPERATIONS: THE ALMA ARCHIVE Mitaka, Tokyo, Japan	2021
HIGH-MASS STAR FORMATION AND OBSERVATIONAL TIPS Mitaka, Tokyo, Japan	2021
HIGH-MASS STAR FORMATION AND OBSERVATIONAL TIPS Invited Speaker Mitaka, Tokyo, Japan	2020
ALMA-IMF F2F PARIS MEETING, CNRS, LERMA, ÉCOLE NORMALE SUPÉRIEURE, OBSERVATOIRE DE PARIS Paris, France	2020
TIPS FOR ALMA PROPOSALS, ALMA USERS MEETING, NATIONAL ASTRONOMICAL OBSERVATORY OF JAPAN Invited Speaker Mitaka, Tokyo, Japan	2020
EAST ASIAN ALMA SCIENCE WORKSHOP, ACADEMIA SINICA, INSTITUTE OF ASTRONOMY AND ASTROPHYSICS (ASIAA) Invited Speaker Taipei, Taiwan	2020
ALMA-J SEMINAR, NATIONAL ASTRONOMICAL OBSERVATORY OF JAPAN Invited Speaker Mitaka, Tokyo, Japan	2020
ARC SCIENCE MEETING Mitaka, Tokyo, Japan	2019
STAR FORMATION SEMINAR AT THE UNIVERSIDAD DE BARCELONA Invited Speaker Barcelona, Spain	2019
2019 SPRING ANNUAL ASJ MEETING Hosei University, Tokyo, Japan	2019
ARC SCIENCE MEETING Mitaka, Tokyo, Japan	2018
ALMA-IMF F2F PARIS MEETING, CNRS, LERMA, ÉCOLE NORMALE SUPÉRIEURE, OBSERVATOIRE DE PARIS Invited Speaker Paris, France	2018
ALMA TOWN MEETING AND PROPOSAL WORKSHOP Invited Speaker Mitaka, Tokyo, Japan	2018

2016 ALMA POSTDOCTORAL SYMPOSIUM Renaissance Indian Wells Resort & Spa in Indian Wells, CA, USA	2016
STAR FORMATION WORKSHOP 2015: FROM CLOUDS TO CORES, NATIONAL ASTRONOMICAL OBSERVATORY OF JAPAN Invited Speaker Mitaka, Tokyo, Japan	2015
ALMA & THEORY WORKSHOP, NATIONAL ASTRONOMICAL OBSERVATORY OF JAPAN Mitaka, Tokyo, Japan	2015
FIRST ALMA POSTDOC SYMPOSIUM, NATIONAL ASTRONOMICAL OBSERVATORY OF JAPAN Mitaka, Tokyo, Japan	2014
ALMA-J SEMINAR, NATIONAL ASTRONOMICAL OBSERVATORY OF JAPAN Invited Speaker Mitaka, Tokyo, Japan	2014
CFA STAR FORMATION LUNCH TALK, HARVARD UNIVERSITY Cambridge, MA, USA	2013
CARMA SUMMER SCHOOL Big Pine, CA, USA	2011
SECOND ASTE WORKSHOP: SUB-MILLIMETER ASTRONOMY IN CHILE DURING THE PRE-ALMA ERA, UNIVERSIDAD DE CHILE Santiago, Chile	2007
PI Posters	
THE MAGNETIC FIELD AT THE ONSET OF HIGH-MASS STAR FORMATION <i>EPS Annual Meeting</i> , Tokyo, Japan	2025
MAGNETIC FIELDS IN MASSIVE STAR-FORMING REGIONS <i>Protostars & Planets VII</i> , Kyoto, Japan	2023
ALMA-IMF: ALMA TRANSFORMS OUR VIEW OF THE ORIGIN OF STELLAR MASSES II <i>2019 Spring Annual ASJ Meeting</i> , Hosei University, Tokyo, Japan	2019
A COMPREHENSIVE STUDY OF HIGH-MASS STAR-FORMING REGIONS <i>East-Asia ALMA Science Workshop 2018</i> , Osaka, Japan	2018
ALMA-IMF: ALMA TRANSFORMS OUR VIEW OF THE ORIGIN OF STELLAR MASSES I <i>2018 Autumn Annual ASJ Meeting</i> , University of Hyogo, Japan	2018
A SURVEY OF PRESTELLAR, HIGH-MASS CLUSTER-FORMING CLUMPS: CONSTRAINING MODELS OF HIGH-MASS STAR FORMATION <i>Francesco's Legacy, Star Formation in Space and Time</i> , Florence, Italy	2017
THE FORMATION OF HIGH-MASS BINARY SYSTEMS BY CORE/DISK FRAGMENTATION: VERY EARLY RESULTS <i>Francesco's Legacy, Star Formation in Space and Time</i> , Florence, Italy	2017
A SURVEY OF PRESTELLAR, HIGH-MASS CLUSTER-FORMING CLUMPS: CONSTRAINING MODELS OF HIGH-MASS STAR FORMATION <i>East-Asian ALMA Science Workshop 2016</i> , Hsinchu, Taiwan	2017

	THE FORMATION OF HIGH-MASS BINARY SYSTEMS BY CORE/DISK FRAGMENTATION: VERY EARLY RESULTS <i>East-Asian ALMA Science Workshop 2016</i> , Hsinchu, Taiwan	2017
	EARLY RESULTS: A SURVEY OF PRESTELLAR, HIGH-MASS CLUSTER-FORMING CLUMPS: CONSTRAINING MODELS OF HIGH-MASS STAR FORMATION <i>Half a Decade of ALMA: Cosmic Dawns Transformed</i> , Indian Wells, CA, USA	2016
	EARLY RESULTS: A SURVEY OF PRESTELLAR, HIGH-MASS CLUSTER-FORMING CLUMPS: CONSTRAINING MODELS OF HIGH-MASS STAR FORMATION <i>Star Formation in Different Environments</i> , Quy Nhon, Vietnam	2016
	A MASSIVE, PRESTELLAR CLUMP HOSTING NO HIGH-MASS, PRESTELLAR CORES <i>East-Asia ALMA Science Workshop 2015</i> , Osaka, Japan	2015
	A MASSIVE, PRESTELLAR CLUMP HOSTING NO HIGH-MASS, PRESTELLAR CORES <i>The Soul of High-Mass Star Formation</i> , Puerto Varas, Chile	2015
	A MASSIVE, PRESTELLAR CLUMP HOSTING NO HIGH-MASS, PRESTELLAR CORES <i>Revolution in Astronomy with ALMA – The 3rd Year –</i> , Tokyo, Japan	2014
	CHEMISTRY AND THE “PRESTELLAR” NATURE OF THE INFRARED DARK CLOUD (IRDC) G028.23-00.19 <i>New Trends in Radio Astronomy in the ALMA Era, The 30th Anniversary of the Nobeyama Radio Observatory</i> , Hakone, Japan	2012
	CHEMISTRY IN INFRARED DARK CLOUDS CLUMPS: A MOLECULAR LINE SURVEY AT 3 MM <i>American Astronomical Society</i> , Boston, MA, USA	2011
	MULTI-LINE STUDY OF INFRARED DARK CLOUDS <i>Great Barriers in High Mass Star Formation</i> , Townsville, Australia	2010
Conferences Attended	EPS Annual Meeting, Institute of Science Tokyo, Tokyo, Japan	2025
	ALMA-ATOMS/QUARKS Workshop, Shanghai Astronomical Observatory (SHAO), Shanghai, China	2024
	Astromaterial Science in the ngVLA Era, Tokyo Institute of Technology, Tokyo, Japan	2024
	East ALMA Science Workshop, Contributed Talk, Seoul, Korea	2024
	Early Phase and Initial Conditions of Galactic Massive Star Formation (EPIC2024), Beijing, China	2024
	Astrochemistry Mini-Workshop, Tokyo, Japan	2024
	Astrochemistry get-together workshop ep.2, Tokyo, Japan	2024
	Magnetic Fields from Clouds to Stars Conference, Contributed Talk, Tokyo, Japan	2024
	Stellar Origins: NAOJ & Tokyo Tech Star Formation Workshop, Invited Speaker , Tokyo, Japan	2023
	Star Formation Mini-Workshop, Invited Speaker , Tokyo, Japan	2023
	ALMA-IMF Workshop, Paris, France	2023
	Star Formation Workshop, From Clouds to Cores, Invited Speaker , Tokyo, Japan	2023
	Protostars & Planets VII, Kyoto, Japan	2023
	East Asian ALMA Science Workshop, Invited Speaker , Taipei, Taiwan	2023
	Molecules in Extreme Environments: Near and Far, Tokyo, Japan	2022

	ALMA-IMF Continuum Workshop, Paris, France	2022
	ALMA-IMF Line Analysis Workshop, Paris, France	2022
	East Asian ALMA Science Workshop 2022, Mitaka, Tokyo, Japan	2022
	EA ALMA Development Workshop 2022, Mitaka, Tokyo, Japan	2022
	ALMA Data Reduction Tutorial, Mitaka, Tokyo, Japan	2021
	ALMA-IMF f2f Paris Meeting, CNRS, LERMA, École Normale Supérieure, Observatoire de Paris, Paris, France	2021
	ALMA Data Reduction Tutorial , Invited Speaker , Mitaka, Tokyo, Japan	2020
	ALMA-IMF f2f Paris Meeting, CNRS, LERMA, École Normale Supérieure, Observatoire de Paris, Paris, France	2020
	ALMA Users Meeting, National Astronomical Observatory of Japan, Invited Speaker , Mitaka, Tokyo, Japan	2020
	East Asian ALMA Science Workshop, Academia Sinica, Institute of Astronomy and Astrophysics (ASIAA), Invited Speaker , Taipei, Taiwan	2020
	2019 Spring Annual ASJ Meeting, Hosei University, Tokyo, Japan	2019
	ALMA-IMF f2f Paris Meeting, Invited Speaker , Paris, France	2018
	ALMA Town Meeting and Proposal Workshop, Invited Speaker , Tokyo, Japan	2018
	Francesco's Legacy, Star Formation in Space and Time, Florence, Italy	2017
	East-Asian ALMA Science Workshop 2016, Hsinchu, Taiwan	2017
	Half a Decade of ALMA: Cosmic Dawns Transformed, Indian Wells, CA, USA	2016
	Star Formation in Different Environments, Quy Nhon, Vietnam	2016
	East-Asia ALMA Science Workshop 2015, Osaka, Japan	2015
	Star Formation Workshop 2015: from Clouds to Cores, Invited Speaker , Tokyo, Japan	2015
	The Soul of High-Mass Star Formation, Puerto Varas, Chile	2015
	ALMA & Theory Workshop, Tokyo, Japan	2015
	First ALMA Postdoc Symposium, Tokyo, Japan	2014
	Revolution in Astronomy with ALMA – The 3 rd Year –, Tokyo, Japan	2014
	ALMA/ASTE/Mopra Users Meeting, Tokyo, Japan	2014
	The Submillimeter Array: First Decade of Discovery, Boston, MA, USA	2014
	New Trends in Radio Astronomy in the ALMA Era, The 30 th Anniversary of the Nobeyama Radio Observatory, Hakone, Japan	2012
	American Astronomical Society, Boston, MA, USA	2011
	Great Barriers in High Mass Star Formation, Townsville, Australia	2010
	Second ASTE Wordkshop: Sub-millimeter Astronomy in Chile during the Pre-ALMA Era, Santiago, Chile	2007
	4 th Chilean Advanced School of Astrophysics	
	Interferometry in the Epoch of ALMA and VLTI, Santiago, Chile	2006
	11 th Latin American Regional IAU Meeting, Pucon, Chile	2005
Formal Training	CARMA SUMMER SCHOOL, Big Pine, CA	2011
	IRAM 30 M SUMMER SCHOOL, Sierra Nevada, Spain	2007
	SCHOOL FOR TEACHING FELLOWS, Santiago, Chile	2004
Organized Conferences	SOC (CO-CHAIR) OF MAGNETIC FIELDS FROM CLOUDS TO STARS, INTERNATIONAL CONFERENCE (~150 PARTICIPANTS)	2024
	SOC (CO-CHAIR) OF STAR FORMATION WORKSHOP, FROM CLOUDS TO CORES (~40 PARTICIPANTS)	2023
	SOC OF THE EA ALMA DEVELOPMENT WORKSHOP (~40 PARTICIPANTS)	2022

Additional Work	INTERNAL REFEREE FOR THE ALMA-IMF LARGE PROGRAM	2022
	COMMITTEE MEMBER OF THE SECOND YEAR REVIEW OF THE ADDITIONAL REPRESENTATIVE IMAGES FOR LEGACY (ARI-L) IN THE ALMA ARCHIVE	2021
	EA ALMA HELP DESK COGNIZANT LEAD, Mitaka, Japan	2021–2024
	COMMITTEE MEMBER OF THE FIRST YEAR REVIEW OF THE ADDITIONAL REPRESENTATIVE IMAGES FOR LEGACY (ARI-L) IN THE ALMA ARCHIVE	2020
	EA ARCHIVE COGNIZANT LEAD, Mitaka, Japan	2019–2023
	EA DEPUTY ALMA HELP DESK COGNIZANT LEAD, Mitaka, Japan	2019–2021
	STAR FORMATION WEEKLY MEETING ORGANIZER, Mitaka, Japan	2018–2020
	ALMA NAOJ SEMINAR ORGANIZER, Mitaka, Japan	2015–2020
	ALMA DATA QUALITY ASSURANCE (QA2), Mitaka, Japan	2014–2024
	TECHNICAL ASSISTANT FOR ALMA TIME ALLOCATION COMMITTEE	2014–2017
Media Coverage	Universe Today (Li, Sanhueza et al. 2024, Nature Astronomy publication)	2024
	MPIA Press Release (Li, Sanhueza et al. 2024, Nature Astronomy publication)	2024
	ALMA Press Release (Morii, Sanhueza et al. 2023, ApJ publication)	2023
	NASA Blogs Press Release (Stephens et al. 2022, ApJL publication)	2022
	AAS NOVA Press Release (Morii, Sanhueza et al. 2021, ApJ publication)	2021
	AAS NOVA Press Release (Sanhueza et al. 2021, ApJL publication)	2021
	NAOJ Press Release (Sanhueza et al. 2021, ApJL publication)	2021
	AAS NOVA Press Release (Zapata et al. 2020, ApJL publication)	2021
	Nature Astronomy Research Highlight (Zapata et al. 2020, ApJL publication)	2020
	ALMA Press Release (Higuchi et al. 2015, ApJL publication)	2015
	ALMA Press Release (Guzman et al. 2014, ApJ publication)	2014
	ALMA NAOJ Press Release (Sakai et al. 2013, ApJL publication)	2013
Research Visits	INSTITUTE OF SPACE SCIENCES, BARCELONA, SPAIN	2019
	Visit to Prof. Josep Miquel Girart	
	ALLEGRO ARC NODE, LEIDEN OBSERVATORY, LEIDEN UNIVERSITY, LEIDEN, THE NETHERLANDS	2017
	Visit to Dr. Yanett Contreras	
	PLANET AND STAR FORMATION DEPARTMENT, MAX-PLANCK-INSTITUTE FOR ASTRONOMY (MPIA), HEIDELBERG, GERMANY	2016
	Visit to Professor Henrik Beuther	
	SMITHSONIAN CENTER FOR ASTROPHYSICS, HARVARD UNIVERSITY, CAMBRIDGE, USA	2015
	Visit to Dr. Qizhou Zhang	
	DEPARTMENT OF ASTRONOMY, BOSTON UNIVERSITY, BOSTON, USA	2015
	Visit to Professor James M. Jackson	
	DEPARTAMENTO DE ASTRONOMÍA, UNIVERSIDAD DE CHILE, SANTIAGO, CHILE	2015
	Visit to Professor Guido Garay	

**Peer
Reviewing**

Referee of The Astrophysical Journal (ApJ)
Referee of Astronomy & Astrophysics (A&A)
Referee of Monthly Notices of the Royal Astronomical Society (MNRAS)
Referee of Publications of the Astronomical Society of Japan (PASJ)
Referee of the Atacama Large Millimeter/sub-millimeter Array (ALMA)
Referee of the James Clark Maxwell Telescope (JCMT)
Referee of the Five-hundred-meter Aperture Spherical radio Telescope (FAST)

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