

PATRICIO SANHUEZA

Curriculum Vitae

October 11, 2019

ALMA Project
East Asian ALMA Regional Center (EA-ARC)
National Astronomical Observatory of Japan
2-21-1 Osawa, Mitaka, Tokyo 181-8588, Japan

Phone: +81 422 34 3139
Fax: +81 422 34 3764
E-mail: patricio.sanhueza@nao.ac.jp
<http://alma-intweb.mtk.nao.ac.jp/~patricio/>

Research Interests Early stages of high-mass star formation; Infrared dark clouds; Clump fragmentation and chemistry; Disks in massive young stellar objects; Polarization observations and magnetic fields; Radio telescopes and interferometers

Positions NAOJ RESEARCH PROJECT FELLOW (ALMA) 2014 – Present
ALMA Project
East Asian ALMA Regional Center (EA-ARC)
National Astronomical Observatory of Japan (NAOJ)

Education PH.D., ASTRONOMY & ASTROPHYSICS 2014
Boston University, Advisor: James M. Jackson
Thesis Title: “Characterizing Molecular Clouds in the Earliest Phases of High-Mass Star Formation”

M.S., ASTRONOMY 2008
Universidad de Chile, Advisors: Guido Garay & Leonardo Bronfman
Thesis Title: “Molecular Outflows within the Filamentary Infrared Dark Cloud G34.43+0.24”

B.A., PHYSICS 2004
Universidad de Chile

Honors NAOJ RESEARCH PROJECT FELLOW (ALMA) 2014 – present
National Astronomical Observatory of Japan

PRESIDENTIAL FELLOW 2008 – 2009
Boston University

ASTRONOMY DEPARTMENT SCHOLAR 2005 – 2008
Universidad de Chile

FONDAP FELLOW 2005 – 2008
Universidad de Chile

PAE SCHOLAR 2002 – 2004
Universidad de Chile

Publications Total number of 57 refereed publications (1,563 citations)
First author of 5 refereed publications (207 citations)
Co-author on 51 additional refereed publications (1,356 citations)
h-index of 21
One publication submitted as PI and 3 additional as co-author

Grants	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 (~3,600 US dollars) PI: Patricio Sanhueza	2018
	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 Dr. Benjamin Wu has been hired from October to work on the ALMA large program Total amount awarded: 17,160,000 Japanese Yen (~160,000 US dollars) PI: Patricio Sanhueza	2018-2021
	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 (~2,300 US dollars) PI: Patricio Sanhueza	2016
	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. Andrés E. Guzmán from Chile to NAOJ, Mitaka, Japan Total amount awarded: 250,000 Japanese Yen (~2,300 US dollars) PI: Patricio Sanhueza	2016
	Research Experience	
NAOJ RESEARCH PROJECT FELLOW (ALMA) ALMA Project East Asian ALMA Regional Center (EA-ARC) National Astronomical Observatory of Japan	2014 – Present	
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	<p>SINGLE-DISH RADIO TELESCOPES: Mopra (~400 hours) Nobeyama (~100 hours)</p> <p>RADIO INTERFEROMETERS: ALMA (100 hours) SMA (56 hours) ATCA (40 hours) CARMA (7 hours)</p> <p>OPTICAL TELESCOPES: CTIO 0.9 m (6 nights)</p>
Successful PI Observing Proposals	<p>23. ALMA, <i>April 2019</i> (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</p> <p>22. ALMA, <i>April 2018</i> (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, Hua-bai Li, Andrea Silva, Ken'ichi Tatematsu, Xing Lu, James Jackson, Yanett Contreras, Takeshi Sakai, Benjamin Wu, Quang Nguyen Luong, Kazuya Saigo, & Toshiki Saito</p> <p>21. ALMA, <i>April 2018</i> (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</p> <p>20. ALMA, <i>April 2018</i> (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</p> <p>19. <u>ALMA LARGE PROGRAM</u>, <i>April 2017</i> (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 Lpez-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</p> <p>18. ALMA, <i>April 2017</i> (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, Hua-bai Li, Andrea Silva, Ken'ichi Tatematsu, Xing Lu, James Jackson, Yanett Contreras, Takeshi Sakai, Benjamin Wu, Quang Nguyen Luong, Kazuya Saigo, & Toshiki Saito</p>

-
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
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	CO-SUPERVISOR, HIDEAKI TAKEMURA, SOKENDAI - NAOJ Ph.D. student analyzing ALMA observations of the IRDC Survey I only supervise this specific project of his Ph.D.	2019 - Present
	CO-SUPERVISOR, ATSUSHI SAITO, THE UNIV. OF ELECTRO-COMMUNICATIONS Master degree student analyzing filaments inside IRDC G028.23-00.19 using EVLA and GBT observations of NH ₃	2017-2018
	CO-SUPERVISOR, SATOSHI OHASHI, THE UNIVERSITY OF TOKYO - NAOJ Ph.D. student analyzing the core mass function of an IRDC with ALMA I only supervised this specific project of his Ph.D.	2015-2017
	CO-SUPERVISOR, ATSUSHI SAITO, THE UNIVERSITY OF ELECTRO-COMMUNICATIONS Undergraduate student analyzing filaments inside IRDC G028.23-00.19 using EVLA and GBT observations of NH ₃	2016

	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	2011
	Undergraduate student calculating NH ₃ temperatures in IRDCs	
	MENTOR, JOSHUA L. MASCOOP, BOSTON UNIVERSITY	2010
	Undergraduate student doing an IR classification of the evolutionary stages of high-mass star formation.	
	MENTOR, THOMAS BRIDGES-LYMAN, BOSTON UNIVERSITY	2009
	Summer intern studying the chemistry of high-mass star-forming clumps.	
	TEACHING FELLOW, UNIVERSIDAD DE CHILE	2004
	Physics Laboratory V for Physics Majors: laboratory sections focused on radioactivity (X-rays and γ -rays).	
	TEACHING FELLOW, UNIVERSIDAD DE CHILE	2004
	Physics Laboratory II for Chemistry and Biology Majors: laboratory sections focused on electricity.	
	TEACHING FELLOW, UNIVERSIDAD DE CHILE	2003
	Physics Laboratory III for Physics Majors: laboratory sections focused on electricity and magnetism.	
Selected Talks	2019 SPRING ANNUAL ASJ MEETING	2019
	Hosei University, Tokyo, Japan	
	ALMA-IMF F2F PARIS MEETING, Invited Speaker	2018
	CNRS, LERMA, École Normale Supérieure, Observatoire de Paris, Paris, France	
	ALMA TOWN MEETING AND PROPOSAL WORKSHOP, Invited Speaker	2018
	Mitaka, Tokyo, Japan	
	2016 ALMA POSTDOCTORAL SYMPOSIUM	2016
	Renaissance Indian Wells Resort & Spa in Indian Wells, CA, USA	
	STAR FORMATION WORKSHOP 2015: FROM CLOUDS TO CORES, NATIONAL ASTRONOMICAL OBSERVATORY OF JAPAN, Invited Speaker	2015
	Mitaka, Tokyo, Japan	
	ALMA & THEORY WORKSHOP, NATIONAL ASTRONOMICAL OBSERVATORY OF JAPAN	2015
	Mitaka, Tokyo, Japan	

	FIRST ALMA POSTDOC SYMPOSIUM, NATIONAL ASTRONOMICAL OBSERVATORY OF JAPAN Mitaka, Tokyo, Japan	2014
	ALMA-J SEMINAR, NATIONAL ASTRONOMICAL OBSERVATORY OF JAPAN 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
Posters	ALMA-IMF: ALMA TRANSFORMS OUR VIEW OF THE ORIGIN OF STELLAR MASSES II Patricio Sanhueza , Benjamin Wu <i>2019 Spring Annual ASJ Meeting</i> , Hosei University, Tokyo, Japan	2019
	A COMPREHENSIVE STUDY OF HIGH-MASS STAR-FORMING REGIONS Patricio Sanhueza , Ya-Wen Tan, Vivien Chen, Patrick Koch, Benamin Wu, Fumitaka Nakamura, Fernando Olguin, Andrea Silva, Ken'ichi Tatematsu, Xing Lu, Kazuya Saigo, Takeshi Sakai, Hua-bai Li, Satoshi Ohashi, & Tie E. Miura <i>East-Asia ALMA Science Workshop 2018</i> , Osaka, Japan	2018
	ALMA-IMF: ALMA TRANSFORMS OUR VIEW OF THE ORIGIN OF STELLAR MASSES I Patricio Sanhueza , Fumitaka Nakamura <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 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, Quang Nguyen-Luong, & Henrik Beuther <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 Patricio Sanhueza , Fumitaka Nakamura, Ken'ichi Tatematsu, Qizhou Zhang, Vivien Chen, Yanett Contreras, Rie Miura, Satoshi Ohashi, Takeshi Sakai, & Andrea Silva <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 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, Quang Nguyen-Luong, & Henrik Beuther <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	2017

-
- Patricio Sanhueza**, Fumitaka Nakamura, Ken'ichi Tatematsu, Qizhou Zhang, Vivien Chen, Yanett Contreras, Rie Miura, Satoshi Ohashi, Takeshi Sakai, & Andrea Silva
East-Asian ALMA Science Workshop 2016, Hsinchu, Taiwan
- EARLY RESULTS: A SURVEY OF PRESTELLAR, HIGH-MASS CLUSTER-FORMING CLUMPS: CONSTRAINING MODELS OF HIGH-MASS STAR FORMATION 2016
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, Quang Nguyen-Luong, & Henrik Beuther
Half a Decade of ALMA: Cosmic Dawns Transformed, Indian Wells, CA, USA
- EARLY RESULTS: A SURVEY OF PRESTELLAR, HIGH-MASS CLUSTER-FORMING CLUMPS: CONSTRAINING MODELS OF HIGH-MASS STAR FORMATION 2016
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, Quang Nguyen-Luong, & Henrik Beuther
Star Formation in Different Environments, Quy Nhon, Vietnam
- A MASSIVE, PRESTELLAR CLUMP HOSTING NO HIGH-MASS, PRESTELLAR CORES 2015
Patricio Sanhueza, James M. Jackson, Qizhou Zhang, Jonathan B. Foster, & Andres Guzman
East-Asia ALMA Science Workshop 2015, Osaka, Japan
- A MASSIVE, PRESTELLAR CLUMP HOSTING NO HIGH-MASS, PRESTELLAR CORES 2015
Patricio Sanhueza, James M. Jackson, Qizhou Zhang, Jonathan B. Foster, & Andres Guzman
The Soul of High-Mass Star Formation, Puerto Varas, Chile
- A MASSIVE, PRESTELLAR CLUMP HOSTING NO HIGH-MASS, PRESTELLAR CORES 2014
Patricio Sanhueza, James M. Jackson, Qizhou Zhang, Jonathan B. Foster, & Andres Guzman
Revolution in Astronomy with ALMA – The 3rd Year –, Tokyo, Japan
- CHEMISTRY AND THE “PRESTELLAR” NATURE OF THE INFRARED DARK CLOUD (IRDC) G028.23-00.19 2012
Patricio Sanhueza, James M. Jackson, & Jonathan Foster
New Trends in Radio Astronomy in the ALMA Era, The 30th Anniversary of the Nobeyama Radio Observatory, Hakone, Japan
- CHEMISTRY IN INFRARED DARK CLOUDS CLUMPS: A MOLECULAR LINE SURVEY AT 3 MM 2011
Patricio Sanhueza, James M. Jackson, & Jonathan Foster
American Astronomical Society, Boston, MA, USA
- MULTI-LINE STUDY OF INFRARED DARK CLOUDS 2010
Patricio Sanhueza, James M. Jackson, & Jonathan Foster
Great Barriers in High Mass Star Formation, Townsville, Australia
- Conferences Attended** 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
Additional Work	STAR FORMATION WEAKLY MEETING ORGANIZER, Mitaka, Japan	2018–Present
	ALMA NAOJ SEMINAR ORGANIZER, Mitaka, Japan	2014–Present
	ALMA DATA QUALITY ASSURANCE (QA2), Mitaka, Japan	2014–Present
	TECHNICAL ASSISTANT FOR ALMA TIME ALLOCATION COMMITTEE	2014–2017
Media Coverage	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 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)

References PROFESSOR JAMES M. JACKSON
Associate Director for Research
Stratospheric Observatory for Infrared Astronomy (SOFIA)
NASA Ames Research Center
University Space Research Association (USRA)
Moffett Field, CA, 94035, USA
jjackson@usra.edu

PROFESSOR FUMITAKA NAKAMURA
Division of Science
National Astronomical Observatory of Japan (NAOJ)
2-21-1 Osawa, ALMA-J, Mitaka, Tokyo 181-8588, Japan
fumitaka.nakamura@nao.ac.jp

DR. QIZHOU ZHANG
Smithsonian Center for Astrophysics
Harvard University
60 Garden Street, Cambridge, MA 02138, USA
qzhang@cfa.harvard.edu

PROFESSOR TAKESHI SAKAI
Department of Engineering Science
Graduate School of Informatics and Engineering
The University of Electro-Communications
1-5-1 Chofugaoka, Chofu, Tokyo 182-8585, Japan
takeshi.sakai@uec.ac.jp

PROFESSOR KEN'ICHI TATEMATSU
Director of Nobeyama Observatory
National Astronomical Observatory of Japan (NAOJ)
2-21-1 Osawa, ALMA-J, Mitaka, Tokyo 181-8588, Japan
k.tatematsu@nao.ac.jp

PROFESSOR GUIDO GARAY
Departamento de Astronomia
Universidad de Chile

Camino El Observatorio 1515, Las Condes, Santiago, Chile
guido@das.uchile.cl