

国立天文台滞在型研究員報告書
Activity Report for the NAOJ Visiting Fellows Program

所 属 (Institution)	Universidad de Chile
氏 名 (Name)	Andres E. Guzman
研究課題名 (Research subject)	Star Formation
滞在期間 (Period of stay)	年 月 日 ～ 年 月 日 2016 11 24 2016 12 11
受入責任者氏名 (NAOJ host researcher)	Patricio Sanhueza

1. 滞在型研究員として国立天文台滞在中に行った活動について簡単にお書きください。
(Summarize your activities during the stay using the NAOJ Visiting Fellows Program.)

I stayed at NAOJ to work in the ALMA project “A survey of prestellar, high-mass cluster-forming clumps: constraining models of high-mass star formation” (2015.1.01539.S; PI: Sanhueza). I made the initial version of the automatic data reduction script for the 7 and 12 m array for all molecular lines (later improved and finalized by Yanett Contreras, also an NAOJ visiting fellow). Later I focused in the combination of the dust continuum images obtained by combining the 12 and 7m (provided by ALMA) and single-dish observations (not provided by ALMA). ALMA total power observations do not include continuum. Thus, we used ATLASGAL observations, after scaling the dust continuum emission from 850 to 1300 μm . Because part of my scientific background is the study of outflows, I spent a large amount of time identifying molecular outflows. The IRDCs in this study supposed to be prestellar, but sometimes some of the embedded cores had weak (hard to identify) molecular outflows associated, indicating active star formation.

2. 今回滞在型研究員として得られた成果について簡単にお書きください。
(Summarize your research products from the stay.)

様式 2 (Form 2)

The science products correspond to cleaned images for the dust continuum emission combining 12 and 7 m arrays from ALMA and single-dish observations from ATLASGAL. I also made channel maps and integrated intensity maps of the wing emission of ^{12}CO (2-1) for molecular outflow identification. After having these products, every person in the team can start doing scientific analysis. Proposals for ALMA Cycle 5 were also drafted.

3. この制度について何か御意見がありましたら、お書きください。

(Please provide any comments about this program.)

The program is very beneficial to foster international collaborations and I am very grateful to have been awarded. This opportunity to come to Japan gave me a change to talk with Japanese scientists about my research and create new collaborations (at NAOJ and out side NAOJ).