

Activity Report of the NAOJ Visiting Scholar Program

Host Project/Division: Chile Observatory Name of Host Scientist: Espada, Daniel

Name of Visiting Scholar: Simon Verley

Title: Visiting Professor

(Choose the appropriate one)

Period: from 18/04/27 to 18/06/18

I. Report from the visiting scholar

[i] Achievement during the period of stay (in comparison with the initial plan)

(Collaborative Research)

As planned we worked on the analysis of the star formation and molecular gas properties of the molecular disk of Centarus A, using recently obtained ALMA data and archival Spitzer data. The analysis is proceeding well and the draft that Daniel is preparing is well underway.

Some of the pipelines needed for this work have been developed, during that stay, for a project related to the star formation laws in early stage mergers that Daniel is leading (NGC3110 and NGC232). The paper was recently accepted by ApJ. We presented this work in the international conference 'The laws of Star Formation: From the Cosmic Dawn to the Present Universe' in Cambridge, UK, 2 – 6 July 2018.

(Education)

I volunteered to give a course on 'Python for Astrophysics' in SOKENDAI. The classes were very successful, with more than 30 students attending the six classes.

(Others)

While the stay I enjoyed interactions with other members of the EA-ARC, including students, postdocs and other professors in Chile Observatory.

[ii] Any comments on this program

I thank NAOJ for the support to allow me to visit NAOJ. This kind of program is good to facilitate collaborations between our two institutions.

[iii] List of publications and presentations by the visiting scholar in collaboration with NAOJ staff or graduate students

Only those related to the work done during the stay.

Publications:

- Molecular gas and star formation properties in early stage mergers: SMA CO(2-1) observations of the LIRGs NGC3110 and NGC232. D. Espada, S. Martin, S. Verley, A. Pettitt, et al. Accepted in ApJ, Sept 2018
- Star formation law along the dust lane of Centaurus A, D. Espada, S. Verley, R. E. Miura, et al. to be submitted to ApJ by Dec 2018

Presentations in conferences:

- Effects of early stages of tidal interactions on the SF law in the NGC 3110 galaxy. Poster contribution in the international conference 'The laws of Star Formation: From the Cosmic Dawn to the Present Universe' in Cambridge, UK, 2 – 6 July 2018
- Molecular gas and star formation properties in early stage mergers: SMA CO(2-1) observations of the LIRGs NGC3110 and NGC232 Oral contribution in ASJ meeting at Hyogo, 19 ~21 Sept 2018
- Star formation law along the dust lane of Centaurus A. Oral/poster contribution in ASJ meeting at Hyogo, 19 ~21 Sept 2018

II. Report from the host scientist

[iv] Any comments on this program

I concur with Simon and I deeply thank NAOJ for the opportunity to have Simon to visit us here in NAOJ. In a relatively short amount of time we had very good progress in our collaborative research because we could interact face to face. I think that the contribution Simon did for SOKENDAI and NAOJ was extraordinary and the many scientific and technical discussions he maintained with other staff and students was very valuable in my opinion.

* If it is necessary, two extra pages can be used. The page limit of the entire document is five pages.

* This report will be posted on the website of the Research Coordination Committee, NAOJ except [v].

【Request】

After a year following the completion of the research, we will send you a request to submit a list of papers and other results that have been produced by this research collaboration. We appreciate your cooperation.