

Activity Report of the NAOJ Visiting Scholar Program

Host Project/Division: _____ Name of Host Scientist: Nobunari Kashikawa

Name of Visiting Scholar: Roderik Overzier

Title: Visiting Research Fellow

(Choose the appropriate one)

Period: from 16/04/01 to 16/04/30

I. Report from the visiting scholar

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

(Collaborative Research)

During this visit, we responded to the final referee report of the paper since published as Toshikawa et al. (2016, ApJ, 826, 114). Work was also started on several studies that are based on early data from the HyperprimeCam Strategic Program. These studies have recently been submitted to PASJ as part of the first data release papers (specifically, Uchiyama et al. and Toshikawa et al., PASJ, submitted). We also constructed a detailed analysis plan for the next years of HSC-SSP protocluster research.

Further work included several improvements made to our methods of comparing observations from the Subaru telescope with predictions from cosmological simulations (Overzier et al., in preparation). The improvements consist of more accurate simulated images and catalogs based on a comparison of our simulation routines with the actual HSC images from the Wide and Deep surveys, as well as a large database of simulated galaxy spectra that are currently being used to prepare for the Subaru/Prime Focus Spectrograph Galaxy Evolution Survey.

(Education)

(Others)

We organized the first NAOJ workshop on protoclusters, bringing together a large portion of the Japanese community interested in this topic. The 2-day workshop took place on 18-19 April, 2016, and consisted of 22 contributed talks and discussion. More details including talks and photographs can be found on the meeting website (http://optik2.mtk.nao.ac.jp/~toshijun/protocluster_ws/program.html). It is our intention to repeat this workshop in 2017 or 2018 following the large amount of data and studies on this topic coming out of the HSC-SSP.

[ii] Any comments on this program

[iii] List of publications and presentations by the visiting scholar in collaboration with NAOJ staff or graduate students
<p>1. Toshikawa, J., Kashikawa, N., Overzier, R. et al.: A Systematic Survey of Protoclusters at $z \sim 3-6$ in the CFHTLS Deep Fields, 2016, ApJ, 826, 114</p> <p>2. Overzier, R.: The realm of the galaxy protoclusters: A review, 2016, A&A Review, 24, 14</p> <p>3. Uchiyama, H., Toshikawa, J., Kashikawa, N., Overzier, R. et al.: Luminous Quasars Do Not Live in the Most Overdense Regions of Galaxies at $z \lesssim 4$, PASJ, submitted</p> <p>4. Toshikawa, J., et al.: Systematic Protocluster Search at $z \lesssim 4$ based on the HSC Subaru Strategic Program, PASJ, to be submitted</p>

II. 以下の項目について、受入教員が記入してください。

Report from the host scientist

<p>[iv] 本制度に対する意見、要望など Any comments on this program</p>

2016 年の 4 月に来訪してもらいましたが、本制度による研究費のお知らせが来たのは彼の帰国後でした。

[v] 研究費の使途（内訳およびその使用目的を簡単に記してください。少額のものは、〇〇関係実験消耗品などとまとめてください）

List of expenditures of the research fund (Fill in amount and purpose of use for each expenses briefly. Put together small amount of items into one item like "Supplies for experiment of ...".)

* 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].