様式２

（2014 年 2 月改定）

滞在型研究員報告書

国立天文台滞在型研究員の方には、期間中の成果について報告をしていただくことになっております。このフォームに記入のうえ、滞在期間終了後 2 週間以内に受入責任者を通じて国立天文台総務課研究支援係へご提出ください。枠の大きさは随時変更して構いません。
なお､この報告書は研究成果の論文掲載前でも研究交流委員会の web 上に公開することがありますので、研究内容の詳細について記入していただく必要はありません。この研究の成果を学術誌等で発表するときは、その旨を謝辞に記載してください。

所　　属	Department of Physics, University of Alberta
氏　　名	Richard Sydora
受入責任者氏名	Keizo Fujimoto
滞在期間	2014 年 11 月 10 日～　2014 年 11 月 28 日

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。(Your research activities during the stay in the NAOJ)

My main research activities during the stay at NAOJ were concerned with investigation of the physical processes involved in the formation of localized electric potential structures known as double layers in magnetic reconnection and their relation to plasma wave generation and particle acceleration in space and astrophysical plasmas. A second activity was on the theoretical analysis of the instability associated with current sheet kinking during magnetic reconnection and generation of anomalous resistivity.

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。(The achievement during the stay in the NAOJ)

The main achievement during the stay included: (i) progress on the analysis of simulation data from large-scale 2D particle-in-cell code simulation of magnetic reconnection to obtain information on the formation and dynamics of the electric potential double layer in the outflow region, and (ii) carried out analytical analysis of the eigenmode equation for the shear flow instability (growth rates and fastest growing modes) associated with 3D current sheet kinking during magnetically reconnecting current sheets.

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。(Comments on the Visiting Research Fellowship, if any.)

様式 2

The Visiting Research Fellowship was very helpful in allowing for productive discussions on setting up and running programs for simulation data analysis with my collaborator, Dr. Fujimoto. It was also useful for meeting other NAOJ scientists and attending the seminars to learn about various projects. The hospitality and staff were very kind to offer any assistance.