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（2014 年 2 月改定）

滞在型研究員報告書

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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	中国科学院中国国家天文台
氏　　名	GAO Yu　（高　裕）
受入責任者氏名	桜井　隆
滞在期間	2015 年　1 月 7 日～ 2015 年 2 月 5 日

You can expand the frames below.

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 activities during your stay (travels, seminars, etc.)

During the visiting period of NAOJ, I mainly performed the research on data obtained with the Solar Flare Telescope.
I have also given the following seminar talks:
January 13, a seminar at Kyoto University, for solar research group: Observation of Magnetic Twist and Subsurface Kinetic Helicity in Solar Active Regions.
January 30, NAOJ, Solar and Space Plasma Seminar: Observation of Magnetic Twist and Subsurface Kinetic Helicity in Solar Active Regions.

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。
Research outcomes from this visit

From more than 240,000 magnetograms obtained with the Solar Flare Telescope of NAOJ, I selected about 40,000 magnetograms without obvious filter-band shift. Then I performed two items of research:
1. I computed the magnetic twist α and current helicity density, as well as the proposed R_{jz}, which reflects the ratio of currents whose sign violates the hemispheric helicity sign rule to the total currents in areas of certain magnetic polarity. The results show that both quantities of twist have clear weak hemispheric helicity sign rule. However, the butterfly diagrams have different patterns with those found with the data obtained at the Huairou Solar Observing Station. The reason and more detailed analyses await further investigation.

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2. I computed the averaged x, y, z-components of vector magnetic field, too. The results shown in the form of butterfly diagram indicate the consistent sign preference with those found at the Huairou Solar Observing Station.

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。

Any comments/opinions about this short-term visitor program

I appreciate this opportunity, and would very much like to pursue another possibility of visit to continue my research started here.