



STSM Scientific Report Template

Applicant and home institution : Stefano Bagnulo, Armagh Observatory, UK

Visited scientist and host institution : Gian Paolo Tozzi, INAF – Osservatorio Astrofisico di Firenze, Italy

Dates of STSM : 16 March to 17 April (the STSM was interrupted during the week after Easter to allow SB to attend a meeting in Vienna and a meeting in London).

Explain briefly below how your STSM matched one of these key-points :

1. strengthen current collaborative projects
2. establish new collaborations
3. obtain necessary knowledge for the application of new techniques
4. use host infrastructures that are not available at the home institute.

Collaboration between GP Tozzi and S. Bagnulo has been strengthened thanks to the common work on two papers, and to the preparation and submission of a proposal for telescope time (see Section below). If the proposal is successful, new observations will provide further material for the collaborative work in the forthcoming year or two.

SB and GP Tozzi have been interacting via skype with PhD student Aaron Stinson (Armagh Observatory) to discuss some issues about background subtraction of extended objects. This discussion has led to an improvement in the data reduction methodology applied by our group to polarimetric imaging data.

SB has also organized a 1 day meeting in Arcetri with A. Cellino (INAF Torino), A. Dell'Oro (INAF Firenze), and A. Christou (Armagh Observatory) to discuss the details of a three-years project to study a special category of asteroids, called "Martian Trojans").

Describe below the activities carried out during the STSM and the main results obtained.

SB and GPT have prepared and submitted a proposal for telescope time requesting two half nights in visitor mode and 4h in service mode with FORS2 at the ESO VLT to carry out imaging polarimetry of comet 67P, the target of the ESA mission Rosetta (proposal ID 096.C-0855, PI=Bagnulo). The aim of this project is to obtain observations that will allow us to study the distribution of gas and dust in the regions of the coma that will not be accessible by Rosetta.

SB and GPT have worked on two papers, that are about to be submitted to A&A. One paper is on imaging and spectropolarimetry of comet 9P (Tozzi, Bagnulo, Stinson, Boehnhardt), and one on imaging polarimetry of 67P, 74P, and 152P (Stinson, Bagnulo Tozzi, Boehnhardt, Muinonen, & Jones).