



## MW-Gaia STSM

### Preparation for SCIP observations with the WEAVE multiobject

Dr. Maria Monguió from Universitat de Barcelona spent 13 days (19-22/11/2019) at the UCL (London) thanks to a GP1 STSM grant to collaborate with Prof. Janet Drew. The main purpose of the visit was to prepare the publication of the IGAPS survey, both in terms of the catalogue tables and the paper publication. IGAPS is a photometric catalogue of the northern Galactic plane developed with the Isaac Newton Telescope, that includes the five filters  $i$ ,  $H\alpha$ ,  $r$ ,  $g$ ,  $U_{RGO}$ . It contains almost 300 million sources covering  $|b| < 5$  and  $30 < l < 215$  deg.

This catalogue is also being used for target selection for the forthcoming WEAVE survey. The grantee Dr. Monguio and the host Prof. Drew are respectively the Survey Working Group representative and the Science Team Lead of the Stellar Circumstellar and Interstellar Physics (SCIP) sub-survey of WEAVE, so they are responsible to coordinate and prepare the observations for SCIP. Work on the SCIP coordination and the input catalogue preparation was also in the plan for this short visit, having in mind that WEAVE first light was expected by mid-2020.

Most of the work was dedicated to the draft of the paper for the IGAPS catalogue. Discussions revolved around the contents of the different sections of the paper, as well as the different figures to be included. A preliminary draft existed before the visit, but with a clear lack of content in some of the sections, including abstract, introduction and conclusions, and a clear disproportion of the number of figures in some of the sections. Several telecons were developed during the week with a third collaborator (R.Greimel) who also actively contributed to the content for the paper.

During the discussions and generation of new plots, small issues were identified in a couple of columns of the catalogue that requested an intervention by re-processing few bits and pieces of the catalogue.

Another job done during the visit was to identify the co-authors of the paper. Since the observations for this survey have been developed for up to 15 years, and several quality check tasks have been developed during this time, it was not a straightforward job to identify a list of potential authors.

Tasks related with the SCIP survey within WEAVE were also developed during these two weeks, like the participation in several telecons related with the Survey Working Group and the Quality Assurance Group. They also prepared a detailed plan of the duties to be dealt with during the following few months before first light. That includes the fits catalogue preparation with the input targets list to be potentially observed. Format and columns for this have been agreed with WEAVE central and a clearer timeline for that was reached within SCIP team. BA stars' selection was ready and a full list elaborated, although it might need updating using the final version of the IGAPS catalogue. OB selection is underway, and better communication with the collaborators who are dealing with this task might be required.

Also, organisation related with the Survey Working group itself was discussed, with the identification of a new member of the team that will help with these tasks. Other SCIP topics discussed were: a) contributed software and how to interact with the main pipeline manager to get their own software to compute physical parameters for stars into the main pipeline, b) application for the science verification, and how to distribute the job within SCIP (deadline for proposals submission is December 15), c) Possible meetings to be held during the following year to prepare all the team for survey start.

### **Main achievements**

- ✓ The following article was published after the STSM, and was possible in part thanks to the STSM: <https://arxiv.org/abs/2002.05157> A&A 638, A18 (2020)
- ✓ The full catalogue with almost 300 million rows and 174 columns now exists and has been made available to a few collaborators willing to play with it. It will be made world available through CDS once the paper is accepted.
- ✓ A clear plan for the following months regarding SCIP tasks was defined, including:
  - Preparation of the codes to create the fits catalogues with the appropriate formats and requested columns.
  - Collection and merging of the different target types among the different members of the survey.
  - Writing the Science Verification proposals.
  - A new Survey Working Group member for SCIP was identified to help with all this tasks.
  - A survey readiness review meeting to be held in Oxford the following January, where J.Drew, and possibly M.Monguio will be assisting.
- ✓ Some other issues and working points were identified and were to be dealt with in the future, such as:
  - Clear plan on how to contact WEAVE physical parameters pipeline manager in order to include SCIP codes in the main pipeline to improve results for their targets.
  - Organisation of future meetings during 2020 to get together the larger SCIP collaboration so everyone is ready for survey start.

Future collaborations planned were related with:

- ✓ Publication of the images related with the IGAPS catalogue.
- ✓ Science exploitation of the IGAPS catalogue.
- ✓ Preparation of the SCIP observations.
- ✓ Data selection from the catalogue for multifiber spectrographs.
- ✓ Comparison of the catalogue with the southern part of the survey.