

ESF – Short Visit Grant

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For visit to Cambridge, Institute of Astronomy, UK

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Outcomes: During my stay at the IoA Cambridge, I was actively working on the integration of SkyMapper photometry into the Gaia-ESO Survey. The SkyMapper photometry will now supply targets to the Gaia-ESO Survey in a particularly pivotal region of the colour-magnitude diagram. This portion of the colour-magnitude diagram is between  $g \sim 18-18.5$  where the proportion of stars from the halo main-sequence turn-off start to rise to appreciable levels. This is a newly added capability to the Gaia-ESO Survey. To date the survey has been based solely on the VISTA IR photometry. Although of excellent quality, the VISTA photometry does not reach this region of the colour-magnitude diagram with sufficient photometric accuracy.

SkyMapper and the Gaia-ESO survey will collaborate in further ways:

1. SkyMapper selected extremely metal-poor stars will form targets for the UVES parallel observations in the Gaia-ESO Survey in the bulge and halo programs.
2. SkyMapper blue horizontal branch stars will be supplied to Gaia-ESO for targeting to  $g \sim 19$
3. SkyMapper K-giant stars will be supplied to Gaia-ESO for targeting to  $g \sim 18$
4. SkyMapper extremely metal-poor stars will be supplied to Gaia-ESO for targeting to  $g \sim 18$ .
5. Calibration fields will be common to both programs.

The above additional targets will enhance the scientific potential of the Gaia-ESO survey.

During my time at IoA I have benefited greatly from the positive collegial atmosphere. I was able to present a talk on SkyMapper, multi-object spectrographs in Australia and collaborative plans to the IoA staff.