
PUBLIC SURVEY STATUS REPORT (92nd OPC MEETING)

This report should be returned to the Observing Programmes Office of the European Southern Observatory (opo@eso.org).

PROPOSAL ESO No.: 177.A-3011

TITLE: VST ATLAS

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1. Are any changes proposed with respect to the Survey Management Plan in P92 (e.g., in strategy, field coordinates, exposure time and/or other settings)? If yes, please provide a clear and detailed justification.

The VST ATLAS now has covered the equivalent of $\sim 2300 \text{ deg}^2$ in *ugriz* so far between mid-August, 2011 and April, 2013 in Periods 87,88,89, 90 and 91 (see status maps at <http://astro.dur.ac.uk/Cosmology/vstatlas/>). Over these ~ 19 months, this rate therefore corresponds to $\sim 730 \text{ deg}^2$ per 6-month Period. Since we are aiming to cover $>4000 \text{ deg}^2$, this means that we need to extend the project into ESO Period 95 for *ugr* band data. CASU are pretty much up-to-date in their reduction (v1.0) of the ATLAS data. We note that we are currently completing Phase 3 for ATLAS DR1 covering data from August 2011 to September 2012.

Table 1 shows the current status of the ATLAS survey. The total number of tiles to cover the targeted ATLAS area is 5078 (x5 bands). The Table shows how many of these have been completed by passband. It can be seen that *i* and *z* which are done in gray time have the highest completeness followed by *r* then *g* then *u*. Most of the scheduled areas in *ugriz* are complete in the SGC. In the NGC *i* and *z* is more complete in the scheduled areas than *u* and *g*.

| Table 1 | | | | |
|----------|-------------------|------------|-------------|-------------|
| Band | Completed | Failed | Scheduled | Unscheduled |
| u | 1780 (496) | 210 | 1299 | 1789 |
| g | 2021 (490) | 65 | 1204 | 1789 |
| r | 2298 (539) | 132 | 859 | 1789 |
| i | 2635 (620) | 185 | 1201 | 1057 |
| z | 2651 (594) | 227 | 1143 | 1057 |

Table 1. Total number of VST ATLAS pointings/tiles so far completed up to October 2012. Scheduled means OB submitted and Unscheduled means OB to be submitted. Numbers in brackets are pointings completed in past 6 months.

We note that in P90 and P91 we were advised to only submit OBs covering 73 and 181 tiles respectively since ESO wanted to clear the backlog that had built up at VST for ATLAS and for the other public surveys. This inevitably means that the survey will extend beyond its scheduled finish in P91, as noted in the last status report, and that data will be required in P92 beyond what was envisaged in the revised SMP (see below).

In terms of estimating the time taken to complete the survey, *i* and *z* are going at a rate of about 140 tiles in each band a month and so should take in total 36 months to complete or another 11 months beyond the end of P91. The full $\sim 4500\text{deg}^2$ (of which 4200deg^2 has been approved by the PSP) *iz* survey should therefore be completed by the end of Period 93. The *ugr* survey is going at a rate of ~ 110 per band per month and so will take 48 months in total or another 23 months beyond the end of P91 at the current rate. At that rate the survey will be completed by mid-P95. One possibility to speed up the *ugr* survey is to allow more *r*-band tiles to be done in gray time once the *iz* survey is completed in which case the survey might still be completed by the end of P94.

The observing plan for P92 therefore assumes the same split of filters and hours as indicated in the SMP for previous similar Periods (eg P90).

2. Observing Plan for Period 92.

Specify which part of the Survey Management Plan (SMP) the survey will focus on in P92 in the 1st column and provide the corresponding details in the table below. In particular please highlight any changes with respect to the SMP for P92, and provide a full justification for these changes in Section 1 above.

| SMP Period | Field name/ mean RA | Filter | Time (h) | Seeing | Moon | Transpar ency | Comments / strategy (e.g., no. of epochs) |
|-------------|------------------------|--------|----------|--------|-----------------|--------------------------|---|
| P92 Oct-Dec | SGC RA \sim 2h | ugr | 115 | <1.4 | dark | clear + some phot. | Extra to revised SMP because of VST backlog/delay |
| P92 Oct-Dec | SGC RA \sim 2h | iz | 72 | <1.4 | gray/ bright | clear + some phot. | Extra to revised SMP because of VST backlog/delay |
| P92 Jan-Mar | NGC RA \sim 11h | ugr | 90 | <1.4 | dark | clear + some phot. | Extra to revised SMP because of VST backlog/delay |
| P92 Jan-Mar | NGC RA \sim 11h | iz | 54 | <1.4 | gray/ bright | clear + some phot. | Extra to revised SMP because of VST backlog/delay |