ARRA Infrastructure Improvements at the National Optical Astronomy Observatory

Quarterly Scientific Report (3) for 1 February 2013 – 30 April 2013

Prepared for: National Science Foundation

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ACTIVITIES AND FINDINGS

A one-year extension of SPO-16 AST-0947035 to 31 July 2013 was granted by the NSF to enable completion of the work on projects such as the Kitt Peak instrument handling facility, the repair and renovations to the CTIO mountain dormitories, and several involving the La Serena infrastructure. This report covers the activity related to those projects during the third quarter (February 2013 through April 2013) of that one-year extension.

TUCSON INFRASTRUCTURE

Renovate computer room electrical, cooling and fire detection/suppression systems:
This project is complete.

Replace 15-year-old building energy management and control system:
This project is complete.

KPNO MOUNTAIN INFRASTRUCTURE

KPNO water system renovation:
This project is complete.

Kitt Peak instrument handling facility:
The renovation efforts for this project began at the end of the FY13 second quarter with targeted demolition of various components. The contractor then began work on improvements needed to meet the requirements of the new facility (see Figure 1). The interior pits and trenches were filled with concrete, and construction began on the planned interior instrument testing control room space. Other efforts involved construction of a new loading dock and preparations for installation of large roll-up doors through which to move instruments (see Figure 2). Revisions to the electrical system are being made that involve running utility lines to the planned test stations.

Figure 1: Framing for the new instrument control office area with an overhead storage area. (Image credit: Concord General Contracting.)

Figure 2: The newly completed loading dock for the Kitt Peak instrument handling facility. The red structural framing is for installation of overhead doors needed for movement of instruments into and out of the building. (Image credit: Concord General Contracting.)
NOAO staff worked to identify the required facility testing equipment; purchasing of the equipment should begin in the next quarter. It is anticipated that the majority of the contracted renovation efforts will be close to completion near the end of the FY13 fourth quarter.

CTIO MOUNTAIN INFRASTRUCTURE

Pachón water system renovation:
This project is complete.

Dormitories repair & renovations:
This project is complete.

Blanco 4-m mirror coating chamber:
This project is substantially complete. A portion of the work had been deferred until the next mirror recoating cycle, which will not take place until after the deadline for expenditure of ARRA funds. Consequently, the NSF is being requested to allow expenditure of those dedicated funds to cover scope on another of the defined CTIO ARRA projects.

LA SERENA INFRASTRUCTURE

Machine shop modification & refurbishment:
The feasibility and need for this project has been reconsidered due to a projected cost that exceeds the allocated budget and potential availability of commercial anodizing facilities. The NSF is being requested to allow the use of these allocated funds to cover cost overruns on other CTIO and La Serena ARRA projects, due to construction inflation and low Chilean Peso/US Dollar exchange rate.

La Serena compound water system renovation:
This project progressed during this report period. The deep-well pump was replaced (see Figure 3). Materials were purchased and work was scheduled for replacement of tanks as well as refurbishment of chlorination and filtration equipment.

La Serena meeting rooms renovation:
This project is nearing completion. The remaining work is primarily the installation of an outdoor patio, which is being bid out for construction.

Repair and renewal of security fencing for La Serena compound gate:
This project is complete.

Figure 3: New deep-well pump, prior to installation, for La Serena water system. (Image credit: Jeff Barr/NOAO/AURA/NSF.)
SUMMARY OF THIRD QUARTER EXPENDITURES

The table below provides a summary of the award accounts, showing cumulative expenditures to date (30 April 2013) and the total funds remaining.

<table>
<thead>
<tr>
<th>Award Account</th>
<th>Award Amount</th>
<th>Prior Expenses</th>
<th>Expenses This Quarter</th>
<th>Total Expenses</th>
<th>Funds Available</th>
</tr>
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<tbody>
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<td>2,137,269</td>
<td>22,825</td>
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<td>(62,094)</td>
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<td>Totals</td>
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<td>4,804,141</td>
<td>795,859</td>
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