ARRA Infrastructure Improvements at the National Optical Astronomy Observatory

Quarterly Scientific Report (1)

for

August 1, 2012 – October 31, 2012

Prepared for:
National Science Foundation
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Pursuant to Cooperative Agreement No. AST-0132798, Article VII
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 through the first quarter (August 2012 through October 2012) of that one-year extension.

TUCSON INFRASTRUCTURE

Renovate computer room electrical, cooling and fire detection/suppression systems:
The various system renovations have been completed and minor efforts are ongoing as necessary to fine tune the operations.

Replace 15-year-old building energy management and control system:
The installation and implementation of the various interfaces has been completed. Now that the full system is operational, staff will be working during this reporting year to adjust and calibrate the various building systems as appropriate to respond to the four seasons and their demands on the heating and cooling systems.

KPNO MOUNTAIN INFRASTRUCTURE

KPNO water system renovation:
The primary water treatment processing system was completed, and operation of the plant was ongoing during this quarter with the advent of the rainy season. Adjustments continue with the various treatment processes to ensure compliance with EPA testing requirements.

Kitt Peak instrument handling facility:
Following a competitive architectural/engineering firm bid process, Advantech Facility Design, Inc. was awarded the contract to prepare renovation drawings for the instrument handling facility. NOAO staff worked with the firm during this quarter on the development of the construction documents. The plans will be provided for final review in the coming quarter. It is also anticipated that contractor bids will be pursued in the coming quarter.

CTIO MOUNTAIN INFRASTRUCTURE

Pachón water system renovation:
The portion of this work to fully renovate the piping system ~4.5 km from the well to Cerro Tololo was completed and is in use. The replacement of underground piping from the Cerro Pachón utility yard to the dining/hotel area is in progress and should be completed by the end of December 2012.

Dormitories repair & renovations:
This project is substantially completed. Three dormitory buildings with a total of 39 rooms and a dining facility have been renovated. The contractor, Veracruz Ltda., is completing the final punch list preparatory to closing the contract.
Blanco 4-m mirror coating chamber:  
The hardware has been purchased. The work on the coating chamber is being delayed until the next mirror recoating cycle.

LA SERENA INFRASTRUCTURE

Machine shop modification & refurbishment:  
The implementation of this project is being delayed until the final budget of the other ARRA project work in Chile is determined. Escalation in the cost of those projects, due primarily to Chilean peso to US dollar exchange rate, will likely be covered by some or all of the value assigned to this project, which is considered to be less critical in nature. A decision on the disposition of this work will be made in early 2013.

La Serena compound water system renovation:  
Materials have been purchased for the tank and chlorinization system upgrades. Work is expected to start in January 2013.

La Serena meeting rooms renovation:  
Work is in progress to convert an underused area of the CTIO La Serena library into a staff interaction space and a multipurpose meeting/dining area. Completion of the project is anticipated by the end of December 2012.

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

SUMMARY OF FIRST QUARTER EXPENDITURES
The table below provides a summary of the award accounts, showing cumulative expenditures to date (31 October 2012) 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>
</thead>
<tbody>
<tr>
<td>CTIO El Totoral Facilities</td>
<td>2,098,000</td>
<td>1,767,170</td>
<td>242,801</td>
<td>2,009,970</td>
<td>88,030</td>
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<td>AURA F&amp;A</td>
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<td>9,020</td>
<td>121,655</td>
<td>(67,361)</td>
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<td><strong>Totals</strong></td>
<td><strong>5,600,000</strong></td>
<td><strong>990,376</strong></td>
<td><strong>292,630</strong></td>
<td><strong>4,621,133</strong></td>
<td><strong>978,867</strong></td>
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