

SAO 1.2m Primary Mirror Monthly Report

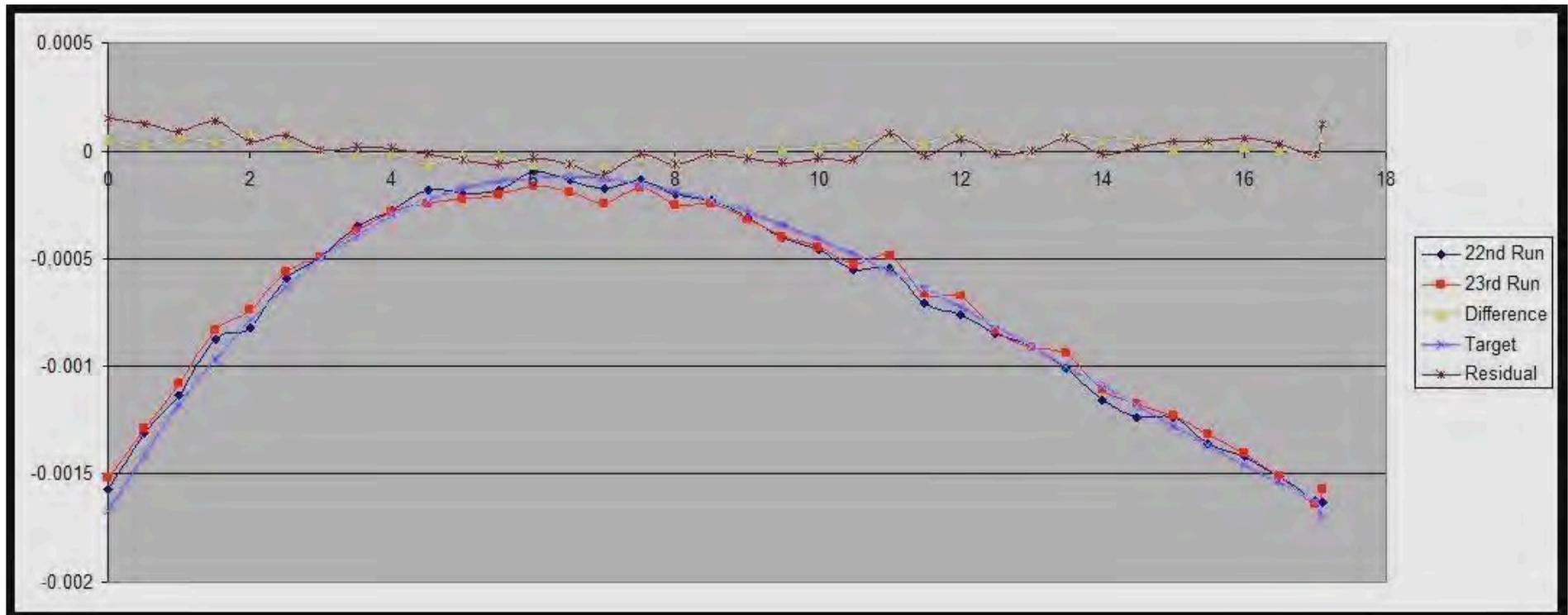
March 19, 2012

1. General Status

- The 9 micron grinding is now completed and polishing has begun.
- A laser tracker measurement was made to confirm radius and conic is acceptable at this *stage* (see page 5 & 6 for details).
- Parts are being fabricated for a SCOTS test that will be used to guide the early polishing work.
- The center hole of the cell started leaking (see page 9). Once inspected it became clear the steel center plug had rusted at the seal and was leaking. The part was yellow zinc and had rusted through at the location of the seal. The part was replaced with a powder coated surface and the cell is now working. A little more than a week was lost as a result of this failure.
- A scratch was discovered on the surface of the mirror. The scratch is within the allowable specification (2.5" long and ~200 μm wide). The origin of the scratch is unknown at this time.
- Work has begun on defining the acceptance test with a draft due in early May 2012.
- Schedule details and discussion is in section 3.

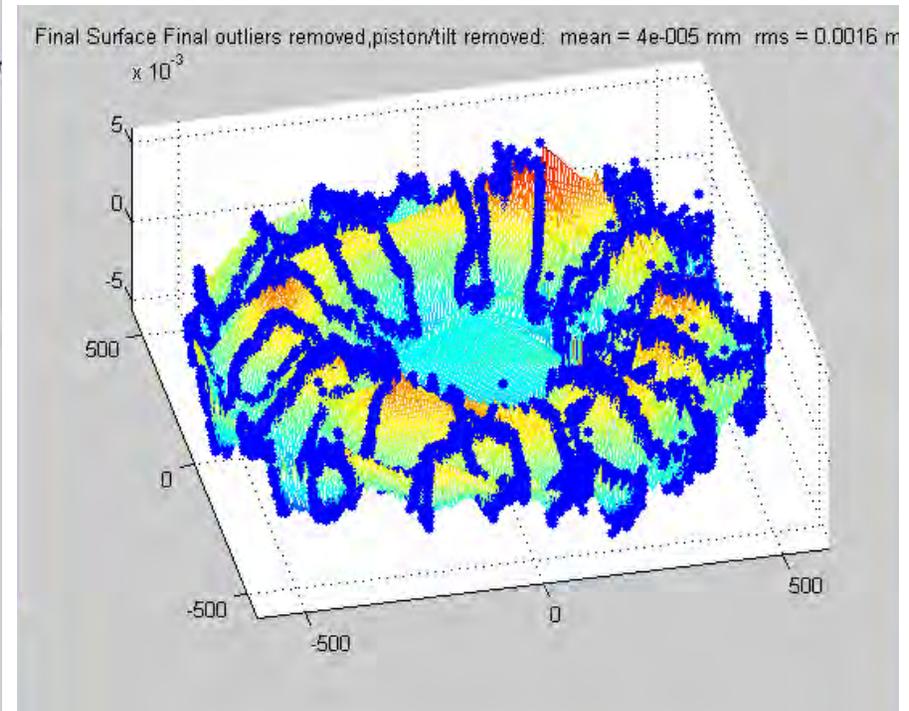
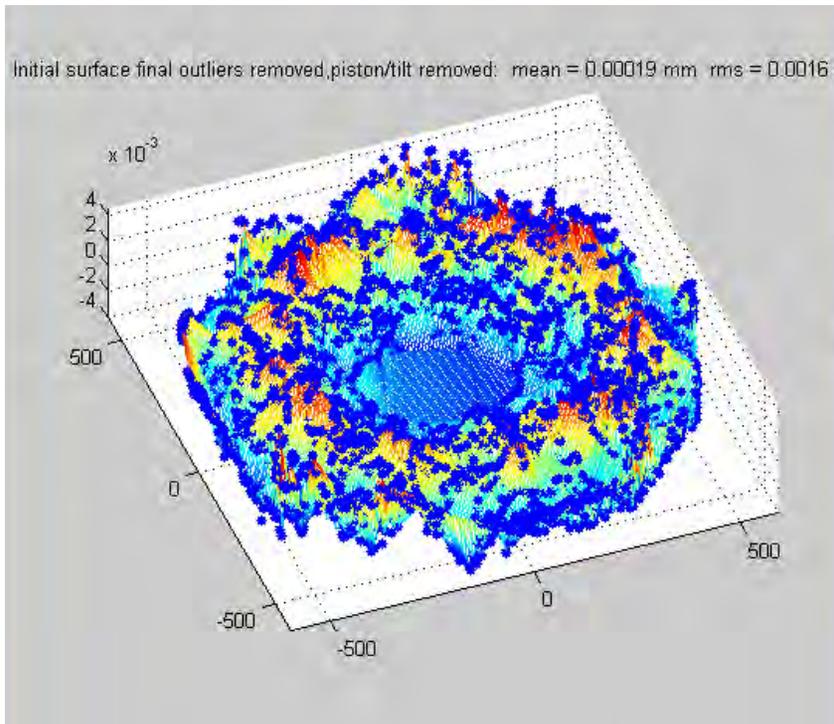
1. General Status

- Latest results are in the chart below.
- Last grinding run has occurred and the results are shown below.



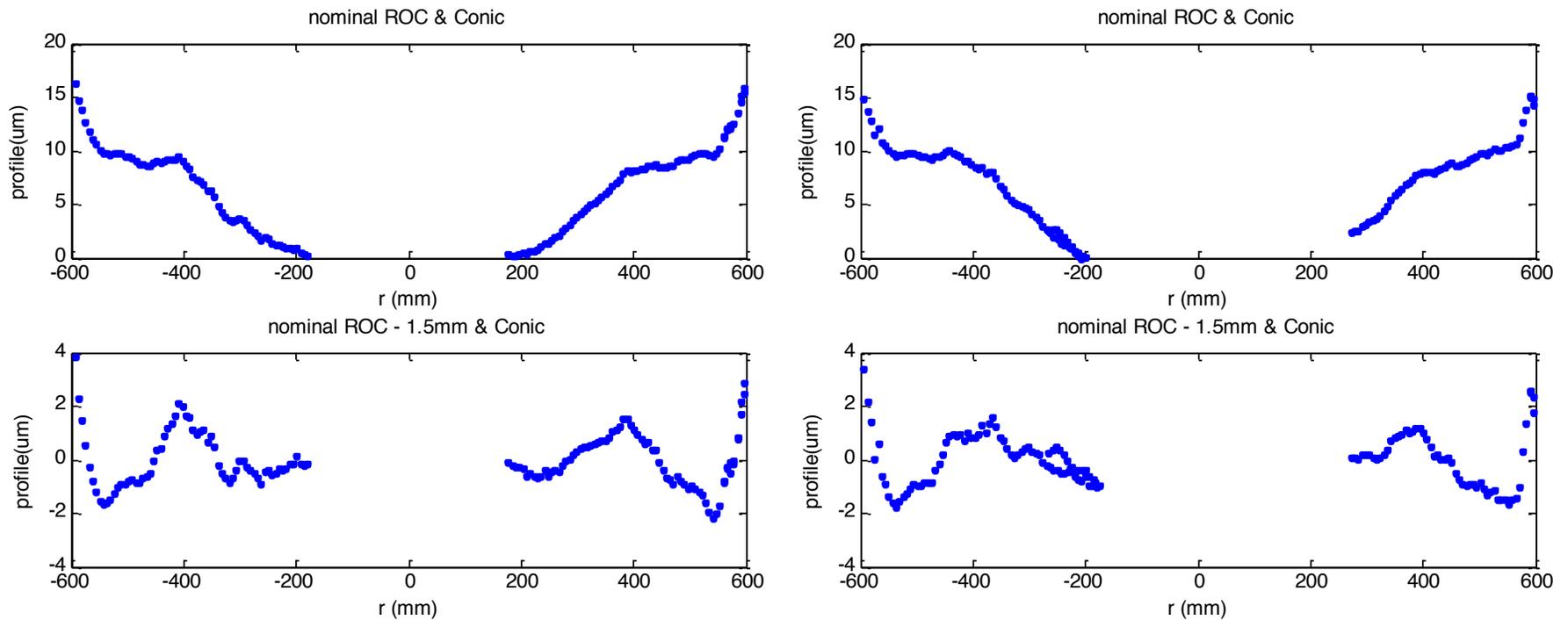
1. General Status

Laser Tracker Test (nominal conic and RoC)



1. General Status

*X and Y scan with
Nominal ROC(4590.87mm) & Conic(-1.040231)*



2. Pictures

Photographs I.



SAO 1.2m primary mirror after a polishing run on April 17, 2012.

2. Pictures

Photographs II.



New polishing lap being put on the mirror to be pressed-out prior to the first polishing run.

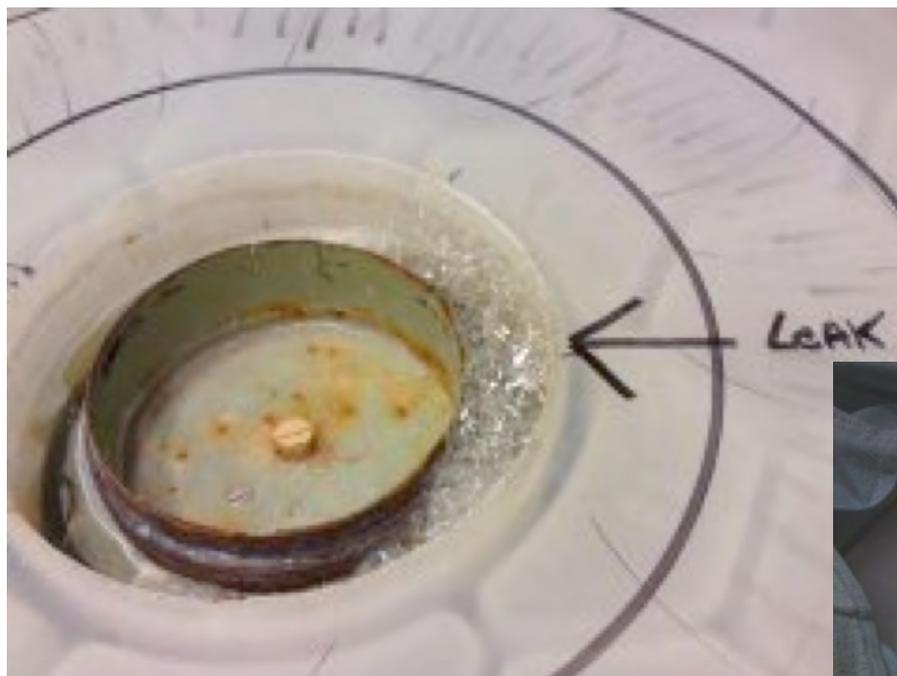
2. Pictures

Photographs III.



Polishing tool on mirror after the first polishing run.

2. Pictures Photographs IV.



The center hole seal leak due to corrosion. The part was replaced, powder coated and installed.

3. Schedule

- Progress is moving slower than planned and resources are being added to mitigate schedule slippage. A polishing technician (*John Davis*) was added in late April 2012.
- The aspheric grinding at 9 μ m grit was completed in April 2012. This task is more than a month behind schedule with a delay due to the center section corrosion issue and a week lost to sick time.
- The next step is then to polish the mirror out on the Draper that will extend into early May 2012.
- The final figuring and acceptance is also expected to take one month to complete. This task is planned to be completed in late June 2012.
- Steward Observatory and the College of Optical Science are doing what they can to apply additional resources to minimize the schedule impact.
- Due to delays and slower progress than planned the current complete date will have to be extended until June 29, 2012. A request will be made for a schedule extension.