MONTHLY STATUS REPORT
Engineering & Technical Services
March 2003

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DESCRIPTION: The Gemini Near Infrared Spectrograph is a $4.2 million long-slit spectrometer that will be mounted on the Gemini South 8-meter Telescope on Cerro Pachon, Chile. It will operate from 1 to 5 um and will offer two plate scales and a range of dispersions. The instrument is scheduled for completion early in 2003. See regular monthly reports on the web at http://www.noao.edu/ets/gnirs/.
DESCRIPTION: The MONSOON Image Acquisition System is the NOAO solution for scalable, multichannel high-speed image acquisition system. Additional information can be found at the MONSOON website [http://www.noao.edu/ets/monsoon/](http://www.noao.edu/ets/monsoon/).

The initial focus of MONSOON is to develop an IR Laboratory Test Set for the RIO ORION Project. This capability will also support the RIO VIRGO and Rockwell HAWAII 2 family of FPAs, prove the MONSOON system concept and provide the baselinesystem for NEWFIRM implementation. This test set is composed of a Linux-Based Ghz PC, 1Gb/s FiberLink, Detector Head Electronics Chassis (DHE), one Master Control Board (MCB), one Clock & Bias Board (C&BB), and two 36 Channel IR Acquisition Boards (IRACQ), along with associated software.

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<th>Dec</th>
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<th>Feb</th>
<th>Mar</th>
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<td>IR Test Set Review</td>
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<td>Monsoon CDR</td>
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**FY 03**
- Budgeted Hours: 13,000
- Budgeted Capital: $100,000
- Actual Hours: 6,965.5
- Actual Capital: $62,093

**RESOURCE ISSUES**
- Jerry Penegor continues to be heavily involved with GNIRS and NEWFIRM.
- Kaviraj Chopra, the EE Intern working on VHDL issues, is scheduled to graduate in June.
- Peter Ruckle now available for programming, but still heavily involved with GNIRS.

**RECENT ACCOMPLISHMENTS**
- Established software and hardware performance requirements to operate ALADDIN and Orion devices.
- ALADDIN & Orion requirements approved.
- Began study for Sequencer back end (i.e. Waveform definition).
- Created central repository for “Red Flagging” potential problems.
- Firmware version control and style guide has been implemented.
- All “top level” designs have been completed.
- Sequencer architectural design structure competed.
- Completed Top Level design for the CLK & Bias Board.
- Completed CLK & Bias board amplifier selections.
- Hardware on Clock boards fully completed.
- Master Control Board Fiber FPGA coding completed.
- Master Control Board Sequencer FPGA coding complete – MPU sequencer coding in final stages.
- IR Acquisition FPGA Coding completed (bus interface, memory alignment, co-adder, self-test module, etc.)
- MPU sequencer design has successfully undergone internal review.
• Interface definitions completed for CCD Prototype. Dave Dryden adapting CPLD code. CCD Prototype will look like a normal DHE from the PAN.
• Software:
  o Software simulator for the Detector Head Electronics operational.
  o Debugging tool to check hardware functionality operational.
  o GP Utility level libraries completed
  o Low Level Hardware interface libraries completed
  o PAN processes near completion and should be ready for testing in early May
  o Coding for MONSOON User Interface started with help of Peter Ruckle
  o PAN-DHE configuration
• System:
  o Verified correct MCB operation in local mode
  o Verified IR Acquisition Board to on-board access to read write memory
  o DACs successfully programmed from PAN
  o Assembler code compiler for Sequencer MPU completed

PLANS:

• Complete populating CLK & Bias boards.
• Assemble and Test MCB Rabbit Adapter Boards.
• Optimization of IR Acquisition Performance.
• Continued test of IR PCB assemblies.
• Continued Test of IR System.
• Continued Development of FPGA based logic in all 3 PCB assemblies. Focus on IR Acquisition needs.
• Operate an ALADDIN readout in the NOAO ALADDIN test dewar with Monsoon and confirm that Monsoon operation meets or exceeds prior operation within extant NOAO systems.
• Continued Development of MONSOON Software with focus on IR Test system needs.
• Continued Test of CCD Prototype System.
• Software PDR to be held in the May time frame
• Hardware CDR to be held in the August time frame.
• VHDL training scheduled for April.
• Develop/indentify/modify waveform definition language and create MPU sequencer compiler to enable efficient sequencer coding.
**DESCRIPTION:** This is a multiyear project to develop a wide field, near infrared imager designed for use at the Cassegrain focus of the Mayall 4-M telescope. A draft of the concepts for this instrument can be found at [http://www.noao.edu/ets/newfirm/newfcon.html](http://www.noao.edu/ets/newfirm/newfcon.html).

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**GENERAL:** The NEWFIRM program is steadily progressing on top assembly definition of the instrument. At this point we are about one week behind our January plan, now set to finish most of the top-assembly configuration definition by 7 April. The PDR is still planned for early June. The KPNO 4m telescope interface definition and guider design is making good progress.

**SCHEDULE:**

A detailed plan showing all work through “Freeze Configuration” is available on request.

**ACCOMPLISHMENTS:**
- Work is proceeding on the design girth ring and dewar shells.
- The large baffle assembly has been defined and in design.
- Work is proceeding on the detector mount assembly design.
- Work has started on defining the electronics needed for detector interface and instrument control.
- The optical design is complete, optical element drawings are complete, and we will soon go out for bids.
- Systems Design Notes (SDN’s) continue to be written to specify requirements and interfaces.
- KPNO has made good progress on the 4m Telescope interface specification and guider definition.

**PLANS:**
- Complete systems, opto-mechanical, electronics, and software preliminary design efforts by April 15, 2003.
• Complete a program plan, schedule and cost estimate by May 9, 2003.
• Be prepared to present the NEWFIRM final configuration, with cost, schedule and resource requirements the week of June 2, 2003.
Electronic Design (D. Stover)

**COMMENTS**

WTTM documentation became complicated where modifications were made to the WIYN system for which little or no documentation exists in the formal system.

The GONG Camera Power Supply Chassis had to be documented from scratch, they were getting by with less than minimal documents that would have resulted in 10 assemblies, all having slight variations from the other when they are suppose to be identical.

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**COMMENTS**

Finished Items

- Monsoon remake of MCB patch board
  - NNW 053 808

Ongoing jobs

- Library standards & Libraries
  - NNX 510 000
- drawing standards written
  - NNX 510 000

**PROJECT**

- SOLIS Guider revision
  - SNP 140 040
  - More changes coming up, discovered this month (still waiting for info)
- GNIRS
  - 26 docs that I can finalize
- SOLIS
  - 66 docs that I can finalize
- GONG - Camera Power Supply upgrade
  - SNG 100 500
  - Complete documentation package for camera pwr sply box
- Capacitor library
  - NNX 510 000
  - 65% complete need to finish the rest carried in the stock room
- Resistor library
  - NNX 510 000
  - 10% complete making parts as required, stock room parts need to be included
- Documentation Wavefront
  - NNN 510 844
  - 14 docs to create 10 to redline, on hold for more modifications on MNTN
- Documentation WTTM
  - NNX 539 202
  - started creating necessary documents
- software load and manual read
  - NNW 051 900
  - Need to try to import data
- Monsoon CCD Proto Sch update
  - NNW 053 907
  - still need to update BOM

**Priority jobs / newly submitted**

- finish spread sheet with efile locations then on to investigating the jobs with the "unknown" status (still continuing, I don't have all the efile locations yet)
- started creating necessary documents
- still need to update BOM
- 66 docs that I can finalize
- Monsoon remake of MCB patch board NNW 053 808
- Documentation Wavefront
  - NNX 539 202
  - started creating necessary documents
- SOLIS
  - NNX 510 000
  - 65% complete need to finish the rest carried in the stock room
- GNIRS
  - NNX 510 000
  - Complete documentation package for camera pwr sply box
Instrument Shop (R. Repp)

Small Purchase Orders (Account Numbers, Vendors, Products Purchased, and Cost)

- NNB202-300, McMaster Carr, Nylon Threaded Rod and Nuts .......................$75.90
- NNU533-193, Perfection Powder Coating, Powder Coat ..............................$85.00
- NNU580-310, McMaster Carr, Shipping Crate Hardware ............................$46.27
- NNU580-310, Barnhill Bolt, Metric Shoulder Screws .................................$123.45
- SNP140-110, CB Oasis, Nickel Plate Covers .............................................$242.35
- SNP140-110, Precision Plating, Anodize ....................................................$55.12
- SNP140-110, Perfection Powder Coating, Paint Covers ............................$210.00
- SNP140-130, Precision Plating, Anodize ....................................................$225.00
- Total Non-Shop Expenses ....................................................................$1,063.09

In addition to these expenses, the instrument shop budget contributed money to purchase needed stock, software and supplies for all projects that are manufactured at NOAO.

Instrument Shop Spreadsheet (page 2) at a Glance:

- 455 estimated hours of work in progress
- 412 hours in shop queue
- 480 hours of potential future projects for instrument shop

Projects Completed by Instrument Shop March 2003

- Dewar Stand for 36" Telescope for KPNO (Harris)
- Spreader Bar for Flamingos (Harris)
- Turret Rebuild for GONG (Harris)
- Rework of three Lens Slides for GONG (Harris)
- Installation of six Air Probe Monitoring Assemblies in Gemini North (Hauth)
- Support Plates for Air Pads for Shipping GNIRS (Stein)
- Fabricate Fixture to Leak Test Small and Large Air Pads for Shipping GNIRS (Stein)
- Paint Skid for GNIRS Crate (Stein)
- Wire Harness Support for GNIRS (Stein)
- Misc. Monsoon Electronic Panels (Stein)
- Ongoing and extensive design and fab effort for NSO FTS (Rath)
- OWIFS Bench Handling Fixture (Stein)
- Warm Up Controller Shipping Brackets (Stein)
## Instrument Shop (cont.)

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<td></td>
<td></td>
<td>455</td>
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</table>

### Instrument Shop Queue

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>ESTIMATED HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANY IRMOS SPIDER ADAPTER</td>
<td>20</td>
</tr>
<tr>
<td>SKETCH OVERHAUL MONSOON CARD CAGE MODIFICATION</td>
<td>16</td>
</tr>
<tr>
<td>N/A FIBER MOUNTS SOLIS FDP</td>
<td>40</td>
</tr>
<tr>
<td>N/A FIBER GUIDES/SOLIS SOLIS FDP</td>
<td>80</td>
</tr>
<tr>
<td>N/A WALL LINING SOLIS FDP</td>
<td>40</td>
</tr>
<tr>
<td>N/A AIR DUCT SOLIS FDP</td>
<td>40</td>
</tr>
<tr>
<td>N/A GONG PLASTIC MIRROR COVERS</td>
<td>8</td>
</tr>
<tr>
<td>N/A GONG BAY AND CAMERA PANEL MODS</td>
<td>8</td>
</tr>
<tr>
<td>N/A EARTHQUAKE PROTECTION ASSEMBLIES</td>
<td>80</td>
</tr>
<tr>
<td>N/A TURRET COVER MECHANISM GONG</td>
<td>80</td>
</tr>
<tr>
<td>TOTAL QUEUE HOURS: 4/1/03</td>
<td>412</td>
</tr>
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</table>

### Anticipated Upcoming Projects

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>ESTIMATED HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANY/DEVELOP/REDISEIGN AND BUILD SUNSPOTTER SCOPES</td>
<td>160</td>
</tr>
<tr>
<td>MANY/DEVELOP/HYDRA UPGRADE WIYN</td>
<td>320</td>
</tr>
</tbody>
</table>

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*ETS Projects & Departments*  
March 2003
Infrared R&D Program (K. M. Merrill)

- The revised Statement of Work for Orion project was completed and is under review at Raytheon. Receipt of final funding from the USNO has been acknowledged and the Orion Project is now funded to scheduled completion.

- Al Fowler and Bill Ball have almost finished the modifications required to use the "Gold Standard" Go-Fish lab electronics to test Orion arrays in the Orion lab dewar using Wildfire. Cleanup of assorted electronic and software issues should be completed in early April so that testing can begin by mid-month.

- Al Fowler and Michael Merrill attended the CDR at Raytheon for the Orion II readout, Arne Hedden and Fred Vrba, our partners at USNO were also in attendance. Approval to proceed was granted pending final check of the submitted design. The re-design will be more tolerant to the type of production faults seen to date, thereby improving the device yield. First devices are anticipated for testing by mid-year.
Optical Coating Laboratory (G. Poczulp)

SOLIS FDP Specific
S-NT400-320
The visible, IR, and guide arm lenses were assembled into their respective mounts and the mounted elements were installed into the instrument.

SOML High Bay Lease
Work by SOML staff continued in the 4m high bay area with the installation of the swing arm profilometer. Mechanical upgrades on the stressed lap continued to allow increased polishing friction loads. Aspheric generation of the secondary blank is underway at the Mirror Lab and the start of polishing still appears to be several weeks away.

WIYN 0.9m Filter Set
WWZ-300-000
The WIYN 0.9m B, V, and R filter substrates were cemented and beveled. Unfortunately, the Harris R filter was damaged during the beveling operation and the result was a series of gouges (area ~0.25 in.²) localized to one corner. It appears that the damaged area is outside the area used by the current detector and a replacement will be fabricated when the full size detector is installed. The filter set was delivered to B. Ditsler for edge painting and sealing.

NEWFIRM Filter Inspection
N-NW135-984
A set of five NEWFIRM filters received from Barr Associates was inspected optically using the ZYGO interferometer and the results were passed along to L. Ming for further analysis. Thickness, wedge, and diameter were also measured.

McMath-Pierce Solar Telescope Shutdown
N-NK510-715
The last of eight mirrors scheduled for the McMath-Pierce Solar Telescope aluminizing shutdown was completed in early March. As with all of the other mirrors, the reflectivity and scatter was measured after removal from the telescope and after aluminization using the Minolta CM-2002 reflectometer. The table that follows details the coating chamber pressures, the final coating thickness, and reflectivity at 400nm for the mirror.

<table>
<thead>
<tr>
<th>Date</th>
<th>Mirror</th>
<th>Initial Pressure (torr)</th>
<th>Initial Thickness</th>
<th>Final Pressure (torr)</th>
<th>Final Thickness</th>
<th>Reflectivity at 400 nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/3/03</td>
<td>McMPW2</td>
<td>6.2e-06</td>
<td>756 Å</td>
<td>6.1e-06</td>
<td>1039 Å</td>
<td>91.6 %</td>
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## Optics Lab & Optical Shop (G. Poczulp)

### Upcoming Coating Lab Projects

<table>
<thead>
<tr>
<th>Chamber</th>
<th>Coating</th>
<th>Contact</th>
<th>Recd</th>
<th>Need Date</th>
<th>Estimated Duration</th>
<th>Planned Completion</th>
<th>Delivery Date</th>
<th>Account #</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLIS Cover Slides</td>
<td>Al</td>
<td>D. Jaksha</td>
<td>1/22/2002</td>
<td>3 days</td>
<td></td>
<td></td>
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<tr>
<td>Three Lenses</td>
<td>MgF2</td>
<td>A. Potter</td>
<td></td>
<td>2 days</td>
<td></td>
<td></td>
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<tr>
<td>WIYN 0.9m Primary</td>
<td>Al</td>
<td>H. Schweiker</td>
<td>4/9/2003</td>
<td>3 days</td>
<td>4/11/2003</td>
<td>TD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MDM 1.3m Primary</td>
<td>Al</td>
<td>J. Halpern</td>
<td>5/12/2003</td>
<td>5 days</td>
<td>5/16/2003</td>
<td>Z-ZKP00-044</td>
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<td></td>
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<tr>
<td>Sloan 2.5m Primary</td>
<td>Al</td>
<td>M. Klaene</td>
<td></td>
<td>3 days</td>
<td></td>
<td></td>
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### Completed Coating Lab Projects

<table>
<thead>
<tr>
<th>Chamber</th>
<th>Coating</th>
<th>Contact</th>
<th>Recd</th>
<th>Need Date</th>
<th>Actual Duration</th>
<th>Actual Completion</th>
<th>Delivery Date</th>
<th>Account #</th>
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</table>

### Upcoming Optical Shop Projects

<table>
<thead>
<tr>
<th>Contact</th>
<th>Recd</th>
<th>Planned Start</th>
<th>Estimated Duration</th>
<th>Planned Completion</th>
<th>Delivery Date</th>
<th>Account #</th>
</tr>
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<tbody>
<tr>
<td>MDM 0.5m Secondary</td>
<td>B. Barr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TBD</td>
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<tr>
<td>Thin VPH Grating Polishing Rework</td>
<td>S. Barden</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N-NX517-200</td>
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<tr>
<td>SOLIS FDP Optics Alignment</td>
<td>J. Wagner</td>
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<td></td>
<td></td>
<td></td>
<td>S-NT400-320</td>
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### Completed Optical Shop Projects

<table>
<thead>
<tr>
<th>Contact</th>
<th>Recd</th>
<th>Planned Start</th>
<th>Estimated Duration</th>
<th>Planned Completion</th>
<th>Delivery Date</th>
<th>Account #</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLIS FDP Optics Installation</td>
<td>J. Wagner</td>
<td>2/15/03</td>
<td>3 days</td>
<td>2/10/2003</td>
<td></td>
<td>S-NT400-320</td>
</tr>
<tr>
<td>WIYN 0.9m Filter Set</td>
<td>H. Schweiker</td>
<td>2/8/2003</td>
<td>3 days</td>
<td>2/10/2003</td>
<td>WWZ-200-000</td>
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<tr>
<td>Filter Inspection</td>
<td>R. Probst</td>
<td>2/17/2003</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Computer Services (C. Danielson)

- Beth's new printer install
- Get printer working for Larry
- Order sesi cable for Lepew
- Install new cable on Lepew and remove dds3 tape changer
- Make sure scanner still works on Lepew
- Try to fix Starjeep
- Rebuild Spider with failed Starjeep parts (HW ok!)
- Continue dialog with 3D Labs re: pc problems
- Start rebuilding Starjeep w/ W2K load
- Peter Moore's problems with two pc's in basement office
- Make backup of two problem pc's and pcmport
- Receive laptops from JS and try to make work
- Ask N Mills to borrow his old laptop to use power pack and floppy to load lappers
- Get drivers from ibm.com for lappers/drivers&bios updates
- Load first lapper
- Try to make it work for what we wanted it for
- Make cd of drivers and stuff for lappers
- Make ghost image of lapper working as well as it can
- Load 2nd lapper from ghost image of first
- Try to make 2nd lapper work for what we wanted
- Get Melissa's new solo 600 set up
- Work on sunchaser for adaptec software problems
- Dave H Compaq assistance
- Order new ps re: 3D Labs input
- Try out new ps
- Order same brand ps as 3D Labs had - 2 actually
- Dick Joyce getting Roy's lapper - need to check out & set up
- Check on cas reports to find out when ps are arriving cas
- Reports don't work! - call Clark to check out
- Solve problem rebooting on GBW105I by going back to 512M
- Mem Sticks
- Fill out annual travel survey and return to Carol G
- Check with Ron H re: casters
- Give casters to Roger
- Dave H re: cd writing problems
- Check w/ Fernando re: PS
- Install newly arrived power supplies into pc's
- Confirm correct operation of pcs
- Install Wildcat VP760 in intel MB pc - seems to work now
- Order additional ps & 1-case fix WallyB's email problem
- Get dead GBW from Drafting room and try to make it work
- Assist John A on GBW's
Programming Group (R. Marshall)

Behzad Abareshi

- Implemented a new version of WTTM's XY stage GUI that performs in both "Engineering Mode" (encoder counts) and "Calibrated Mode" (pixels). Although we currently have a working version installed at WIYN, we were unsuccessful in using some new Geomap translation files. The glitch appears to be in how we define X and Y; we plan to fix the glitch in mid April and outline a consistent routine to generate the Geomap files.
- Participated in trouble shooting of two problems with WTTM. The first was the tripping of the XY stage power amps, a problem that over time had become more frequent. We found that the culprit was the casing of the motor for one axis preventing the other axis go all the way to its home position. The reason why the gap between the casing and the axis (when at home) shrunk over time is unknown. In the second problem the WTTM computer hung during operation, went into fsck after being restarted manually, rebooted on its own in the middle of fsck, and after coming back up it appeared that the WTTM PCI card was not responding. Later on rebuilding the whole WTTM software and device drivers fixed the problem.
- During the March T&E we encountered a problem that has occasionally been reported at WIYN: although TCS seems to be in a normal state, tracking is wrong (on the monitor the stars go by quite fast). This has always coincided with the hand paddle going dead, and the solution has been to reboot the TCS. With Charles Corson's help we found that resetting the hand paddle and clicking on it would bring the telescope tracking back to normal. So the problem seems to be the hand paddle, which goes into a bad state, faking a continuous tracking signal to the TCS. My plan is to investigate this a bit more in my office, using a spare hand paddle.
- Installed a new version of CLI that uses SSH to provide a supervisory mode, in which all the "dangerous", active optics commands become available.
- Added "uptime" command to TCS console, and made tcsVersion provide the date and time TCS was built, plus a "signature", a description I am forced to provide each time I build the TCS.

Nick Buchholz

- Continued debugging and modification of the common DHE hardware libraries for MONSOON.
- Revised communications and DHE hardware libraries to deal with additional hardware changes.
- Began testing of new hardware test program to support use of low level libraries.
- Completed revision Libraries to handle 32 bit Addressing scheme writes to the DHE.
- Worked with Al Fowler to get wildfire ORION2 software system working.
- Continued development of panCapture and panProcAlg code for final PAN software system.
- Began blocking out panSaver code.

Phil Daly

- One third of the month was off sick and most of the rest of the time was spent with MONSOON to get all the h/w libraries checked out and debugged.

Shelby Gott

- Received and tested two OEM-style iServer boards from Newport. Waiting for WUFF to come off the telescope so I can install one in it. The WUFF software still isn't re-connecting reliably when WUFF has been powered down for a long time. I'm investigating.
- Learned enough of the VHDL language to translate the WIYN SES dome control EPLD logic from the original AHDL, compiled it to JDEC format and then converted it to POF format for the device programmer. My first attempt to program devices was a flop, though. It seems the current-production Cypress EPLDs I selected (to replace the original Altera devices) are "too new" for our MCT programmer, which was last updated in '99. I've ordered a pair of older (just slightly obsolete) devices, and will try again when they arrive.
- Helped Mountain Electronics troubleshoot a problem with the WTTM filter wheel.
- Helped ME troubleshoot a failure of the 4-m cass guide probe. Replaced a microcontroller that had lost its NVRAM program.
- At Charles Corson's request, I'm putting together a power source for lab testing of hollow-cathode lamps.
Bob Marshall

- Operations:
  - Setup DHCP for the Flamingos computers for downtown, at the 4-meter and at the 2.1-meter. The network setup is now automatic for the data acquisition computer. The host file still needs to be updated for the network power controller, but that can be done after the systems are booted. We plan to automate that process also.
  - Finished the system setup for the WIYN system, 'thistle', and sent it to WIYN. 'thistle' will run the INFORMS data base and eventually take over the functions of 'moby' (internal WIYN WEB server, DADS, particle monitor interface).
  - Disabled the old 'service' executable, which was installed on 38 systems.
  - Restored from a backup tape the /usr/iraf file system on 'rust' at the 0.9-meter after disk problems. Ran tests on the bad disk. Setup a dedicated 18GB disk as an online backup and alternate boot disk. Wrote a script to perform these backups on a empty disk, including the 'newfs', 'mount', 'dump|restore', and 'fsck'. Previously, 'rush' and 'rust' shared a backup disk. They now each have online backups. We plan to do the same for all the data acquisition machines and also upgrade them all to Sparc-20's.
  - WIYN - fixed up the observer home directory files on 'navajo'.
  - Put together a Sparc-20 from spare parts to serve as a development system for the CCD lab. The system, 'dolly', will serve as clone of 'vanilla', 'pearl', and 'navajo' for work with Harcon and Arcon systems.

- Maintenance:
  - WIYN: Was involved with the vanilla/Harcon debugging.
  - 2.1-meter: worked on the login/network problems for 'teal', which were caused by Domain Name Server configuration problems and also 'khaki' being down.

- Other:
  - Attended the introduction to the Iconix UML training.

Dave Mills

- Implemented revised method of collecting WIYN arcon/harcon telemetry. Installed for bench, minimo and wttm.
- Added checks for slideaxis status for feed/wttm mirrors to calibration gui on pearl,navajo,ivory.
- Added checks for all axis status to probes widget on ivory.
- Updated calibration lamp IDs pearl,navajo,ivory.
- Updated icsInfo on vanilla to add new port dependent rotator info.
- Added "check focus before running diq" to the diq task.
- Implemented a low-level control widget for matrox video cards. Reimplemented video-out code to use Linux framebuffer device instead of X-windows. Tested at WIYN, appears to have fixed "unstable video signal - video switcher" problem. This code will be used by the guider-upgrades.
- Continued working on guider upgrade project. First on-sky test at 2meter T&E went well. Guiding worked right away. Sampling can now be run at 15Hz (full frame) and multiple guide regions can be defined. Took test data on video at a variety of magnitudes for testing downtown.

Peter Ruckle

- Most time this month was spent on GNIRS support. When not in the flex rig, work was done preparing the software for final delivery. Tasks such as fixing scripts for installation, and archiving the system have taken the last few days. When GNIRS is back in the lab, the DHS system in the flex rig will be fixed and a larger disk will be put in daikon in order to facilitate the DHS. Mike Peralta will be the one doing the backup and disk installation on daikon, hopefully in the next 2 weeks.
- Monsoon work that I have been assigned has been delayed because of the GNIRS work.
• Risk Management (C. Gessner)

• We experienced an OSHA recordable injury in the instrument shop on March 25. An employee was walking between the stock rack and the GNIRS box near the garage door and fell onto sheet metal stored in the stock rack. The employee suffered lacerations to the chin and arm and is recovering fine. An accident investigation is underway, corrective actions forthcoming. As a result of this unfortunate event, several other items were addressed including the creation of a new workers compensation form and ordering biohazard cleanup kits.

• The NOAO & NSO Contingency Plan CD-RW’s have been distributed to key management. Additionally, there is now a strategy for monthly data and drawing backup off site storage for NOAO and NSO.

• Mike Hawes, Frank Gidney, Fred Wortman and Chuck Gessner attended an ASSE sponsored seminar, “Advanced Fall Protection” on March 6. We invited the presenters to Kitt Peak on March 17 to inspect our fall protection equipment and to review a number of working at heights tasks. The invitation proved valuable, we decommission a few harnesses and they suggested a few changes in procedures.

• The electronic access control system continues to progress. Distribution of key cards to NOAO South, friends of NOAO, visitors and contractors continue. Modifications to the affected door locksets remain and interior lobby doors are scheduled to be locked on April 1.

• Strategy for the Kitt Peak perimeter fire mitigation begins. Discussed a possible partnership with Richard Clifton Director of the T.O. Nation DPS. Mr. Clifton is investigating options to use wild land firefighters to conduct the clearing of vegetation around critical structures. It is planned to begin clearing around the telescopes, maintenance, propane tanks and others, and hauling the bulk of the wood to the intersection of 386 and Ajo Way. Timing of the clearing will also be taken into consideration.

• Disposed of a number of unneeded chemicals and partnering with the U of A radiation department to find a use for several isotopes.

• Nine Tucson employees completed the American Red Cross First Aid and CPR class on March 31. Two other classes are schedule for May 12 and June 6.

• Hosted an unexpected visit from the Arizona Industrial Commission – State elevator inspectors. The inspectors stated that they are trying to classify our in house engineered hoists in the instrument shop and optics lab. We were told that a memo state their conclusion is forthcoming.

• Continued to provide cursory review of the actions related to repairing the damaged Blanco 4m shutter.

• Participated in preliminary discussions for the SOLIS instrument lift plan.

• Consulted on a number of risk management issues including fire protection equipment inspections, fire resistant building materials, vehicle and visitor security, eye protection, regulatory posters, and industrial hygiene matters. Enhanced and updated the CFO library with the Life Safety Code and the National Building Codes.