

Table of Contents



NOAO Highlights

Gemini Gives the Galactic Center a Sharp Look	3
Heavy Metal and the Early Galaxy	5
Extrasolar Planets Are Not Out of Line	7

Director's Office

The First Workshop on the Ground-Based O/IR System	8
---	---

Observational Programs

Round 3: NOAO Survey Proposals Due March 15	10
Looking Ahead to 2001B	11
NOAO Facilities Popular with SIRTf Legacy Investigators	11
Proposal Update for 2001A	11
2001A Observing Request Statistics	12

CTIO Operations

SOAR Update	13
CTIO Instruments and Telescopes—An Update	14
Was Your Night at CTIO Photometric?	14
Mosaic II Maturing	15
Guest House Changes	16

KPNO Operations

WIYN—Still Getting Better!	17
An IR Multi-Object Spectrometer for KPNO	18
Protecting the Dark Skies around Kitt Peak	19

US Gemini Program

Gemini Telescopes Update	20
First Gemini Data Released	20

US Gemini Program (continued)

Proposed MCAO System for Gemini South	21
US Gemini Instrumentation Program Update	22
Gemini Proposals for 2001A	23
GMOS Coming for 2001B	23
NOAO Workshop on Hokupa'a Image Analysis and Data Reduction	23

National Solar Observatory

From the NSO Director's Office	24
New NSO Users' Committee	25
NSO 20 th Annual International Summer Workshop	26
SOLIS	28
McMath-Pierce East Auxiliary Telescope Upgrade Nears Completion	29
NSO Observing Proposals	30
NSO Telescope/Instrument Combinations	30

GONG	31
-------------------	----

NOAO Educational Outreach

Project ASTRO Workshop Number Five	35
Public Presentation of NOAO Images and Science	36
The RBSE Program Continues to Shine	37
The 2000 and 2001 REU Programs at Kitt Peak National Observatory	38

Publications

NOAO Preprint Series	40
Other NOAO and NSO Papers	40

Table of Contents



NOAO Highlights

Treasure Hunt in the Sun's Neighborhood	3
First Data Release from the NOAO Deep Wide-Field Survey	4
Solar Magnetic Fields—Application of Adaptive Optics Offers New Insights.....	5

Director's Office

From the AURA President	7
Back to the Future	7
Sidney Wolff: Architect of the Future	8
The First Workshop on the Ground-Based O/IR System: Report Now Available	9
“Science with LSST”—A Report on the Workshop ..	10
NOAO Publication Lists Now Online	11

Observational Programs

2001B Gemini Proposals	12
Keck/NIRSPEC Time Going, Going,	12
The Status of the Hobby-Eberly Telescope	13
HET High-Resolution Spectrograph Status Report ..	14
Community Access Program Continues on the MMT	14
HET Low-Resolution Spectrograph Status Report ..	15
2001B Proposals for the WIYN-Operated 0.9-m Telescope on Kitt Peak	15
Four SIRTf Legacy Proposers Win NOAO Time	16
Coudé Spectrograph Available at DAO	16
NOAO Nighttime Proposals Due for 2001B	17
CTIO Instruments Available	19
HET Instruments Available	20
Gemini Instruments Possibly Available	20
KPNO Instruments Available	21
MMT Instruments Available	22

CTIO Operations

Site Survey for the GSMT	23
Light Pollution Control in Chile	25
SOAR Update	27
CTIO Telescopes and Instruments Available for Semester 2001B	28
Mosaic II Now with 16 Channels	28
Tom Ingerson Leaves CTIO	30
New Rates at the AURA Observatory	30

KPNO Operations

WIYN to Operate the Kitt Peak 0.9-m Telescope: NOAO Users to Gain Continuing Access to Mosaic.....	32
--	----

KPNO Operations (continued)

FLAMINGOS Successful Commissioning.....	33
Upgrading the Cryogenic Camera	35
Red Hot CCDs at KPNO	37
Quick & Dirty CCD Stellar Photometry	39
Did You Ever Feed the Coudé?	40
Optical Spectroscopy Learns the Nod-and-Shuffle ..	41

US Gemini Program

Gemini Telescopes Update	44
US Gemini Instrumentation Program Update	45
Status of Other Gemini Instruments	47
A Tip for Gemini Proposers	48
Gemini Science at the Pasadena AAS Meeting	49
Let's Talk about Gemini	49
US Participation in the International Gemini Project	49

National Solar Observatory

From the NSO Director's Office	50
NSO Users' Committee Report	51
A New Spectropolarimeter for the Dunn Solar Telescope	52
SOLIS	54
AAS Meeting Presentations by NSO 2000 REU and RET Participants	55
Technique for Observation of Umbral Spectra in the Ultraviolet	56
NSO Observing Proposals	57
NSO Telescope/Instrument Combinations	57

GONG	58
------------	----

NOAO Educational Outreach

Energized Team Effort Begins with Strong Impact at AAS	61
Project ASTRO News	63
The Use of Astronomy in Research-Based Science Education	65
KPNO REU 2000 Students at the AAS Winter Meeting	66

Publications

NOAO Preprint Series	67
Other NOAO and NSO Papers	67

Table of Contents



Science Highlights

White Dwarfs -- Dark Matters	3
Mass Transit	4
Molecular Clouds Over Sunspot Umbrae	6
Zeeman Splitting in OH at 12 Microns	7
Solar Adaptive Optics Program Update	8
The NOAO Hoku'pua Image Analysis Workshop	9

Director's Office

The First Hundred Days	11
Fred Gillett: Infrared Astronomy Pioneer	12
Science with LSST: Report Now Available	13
Notable Quotes	13
NOAO-Gemini New Initiatives Office	14

Observational Programs

Proposals Received for 2001B	15
Joint HST-NOAO Observing Proposals	15
A Status Report on the Hobby-Eberly Telescope	16

CTIO Operations

From the CTIO Director	17
SOAR's Tip/Tilt Tertiary Nears Completion	18
Not Enough Stars in the Sky?	19
Improved Performance of the f/14.8 Tip/Tilt Secondary System at the Blanco 4-m Telescope	20
Other Happenings at CTIO	22

KPNO Operations

Spectroscopy of "Real" Auroral Lines	23
Margaret Edmondson Fellowship	23

US Gemini Program

Status of the Gemini Telescopes	24
US Gemini Instrumentation Program Update	25
Gemini Proposals for 2001B and 2002A	26
Gemini Remote Observing Center Underway	27
Gemini Phase II Observing Tool Released	27
Plans for the bHROS	27

National Solar Observatory

From the NSO Director's Office	28
SOLIS	29
Most Vigorous Sunspot Activity in a Decade Recorded	30
Molecular Spectroscopy Research at NSO	31
The ATST Site Survey	31

GONG	33
------------	----

Public Affairs & Educational Outreach

New Public Face for NOAO on the World Wide Web	36
Do "Star Pilots" Need Special Seatbelts?	37
KPNO + HST: It's All Good	37
New Public Outreach Staff	37
Educational Outreach	38
Teacher Leaders in Research Based Science Education (TLRBSE)	39
CTIO REU Students Have a Busy Summer	39
The 2001 REU Program at Kitt Peak National Observatory	41
Summer 2001 NSO REU, RET, and SRA Programs	41

NOAO Newsletter

Issue 67

September 2001

Science Highlights

Seeing Red: An Update on the Red-Hot LBNL CCDs	3
Near-Earth Objects in the Near IR.....	4
The McMath-Pierce FTS, Iodine Absorption Cells, and Extrasolar Planets.....	5
The Sodium Tail of Mercury.....	7
A Red Look at Reverberating Black Holes.....	9
Quick & Dirty WFPC2 Stellar Photometry.....	10

Director's Office

Implementing The Decadal Survey: NOAO's Role.....	11
Farewell to Caty.....	12
Growing Expertise, Expanding Contacts For NIO.....	12
NOAO Support for SIRTf Runs the Gamut.....	14
NOAO and the Great Observatories.....	15
October Workshop on "Next Generation Wide-Field Multi-Object Spectroscopy".....	15
LSST Science Drivers and Conceptual Design Moving Ahead.....	16

Observational Programs

NOAO Nighttime Proposals Due for 2002A.....	17
Proposal Form Changes for 2002A.....	18
Community Access Time on the MMT and HET.....	18
MMT Instruments Available.....	18
Observing Request Statistics for 2001B.....	19
HET Instruments Available.....	20
Gemini Instruments Possibly Available.....	20
CTIO Instruments Available for 2002A.....	21
KPNO Instruments Available for 2002A.....	22

CTIO Operations

A Satellite Survey of Cloud Cover and Water Vapor in Northern Chile.....	23
YALO Operations Extended Through 2002B: Bulge Time For NOAO Observers In 2002.....	24
Small Telescope Opportunities at CTIO.....	25
Rescue of FLAMINGOS Delays But Improves New Wide-field IR Capability.....	26
SOAR Update.....	27
Other Happenings at CTIO.....	28

KPNO Operations

KPNO in the New NOAO.....	29
Changes in KPNO Observing Capabilities for Semester 2002A.....	30
The Multi-Aperture Red Spectrometer: Cryocam Resurrected!.....	31
FLAMINGOS Returns to KPNO.....	33
A New Set of Medium-Band Filters for Use with Mosaic.....	34
Telescope Recast as the "WIYN 0.9-meter".....	34

US Gemini Program

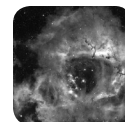
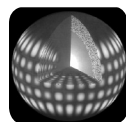
Status of the Gemini Telescopes.....	35
Gemini Observing in 2002A.....	35
Gemini Instruments Expected to be Available in 2002.....	36
US Gemini Instrumentation Program Update.....	37
Proposals Solicited for Design Study for Gemini Adaptive Optics Imager.....	38
Gemini Observing in 2001B.....	39
First Science Results from Gemini North.....	40
US Gemini Science Advisory Committee Meets in Pasadena.....	40

National Solar Observatory/GONG

From the NSO Director's Office.....	41
McMath-Pierce Adaptive Optics: Loop Closed in the Lab.....	42
SOLIS.....	43
GONG.....	44

Public Affairs & Educational Outreach

<i>The Astronomy Education Review</i>	46
Educational Outreach Update.....	47
In Brief.....	47



NOAO Newsletter

Issue 68

December 2001

Science Highlights

Through a Gravitational Lens, Darkly.....	3
The Biggest KBO Found So Far.....	4
Clear and Consistent Observations of Magnetic Field Changes with Flares.....	5
The Effect of Coherent Scattering on Radiative Losses in the Solar Ca II K Line.....	6

Director's Office

A Major Focus on Instrumentation.....	8
The Five-Year NOAO Fellowship.....	9

US Gemini Program

Status of the Gemini Telescopes.....	10
US Gemini Hokupa'a Mini-Queue Run, 20-21 June 2001.....	10
2002A Proposal Statistics.....	12
NOAO Instruments at Gemini South.....	12
US Gemini Instrumentation Program Update.....	13

Observational Programs

NOAO Survey Proposals Due March 15.....	15
Proposal Process Update.....	16

CTIO Operations

Adaptive Optics for SOAR	17
SOAR Telescope Mount Passes Final Exam with Flying Colors.....	19
Small Telescope Opportunities at CTIO - Part II.....	20
Security at CTIO.....	20
Conference on Light Pollution and RFI.....	21
Staff Comings and Goings.....	22
Other Happenings at CTIO.....	23

KPNO Operations

Final Phase of Mayall Telescope Image Quality Improvements.....	24
Update on the Performance of MARS.....	25
WIYN News.....	26

National Solar Observatory/GONG

From the NSO Director's Office.....	27
ATST Site Survey Status.....	28
SOLIS.....	29
Dedicated Astrometric Capability for Near-Earth Objects.....	30
GONG.....	31

Public Affairs & Educational Outreach

Gemini Outreach Expands in Sync with Scientific Output.....	33
Educational Outreach Update.....	34
The 2001 and 2002 REU Programs at the Kitt Peak National Observatory.....	35
In Brief.....	36



NOAO Newsletter

Issue 69

March 2002

Science Highlights

A Survey Starring the Galaxies of the Local Group.....	3
Black Hole Mass and Eddington Ratio in Quasars.....	4
Edge-On Protoplanetary Disk in Quadruple Star System.....	5
UCAC2: A New Astrometric Catalog.....	5
Io as a Probe of the Plasma Torus.....	6
Scattering Polarization in the Chromosphere.....	7

Director's Office

No Pain, No Gain.....	8
Q&A With Karen Wilson.....	9
Proposal Madness: An Upcoming Meltdown?.....	10
The LSST: A Progress Report.....	11

US Gemini Program

Gemini Update and Opportunities in Semester 2002B.....	12
Gemini South Dedication.....	13
Phoenix Commissioned at Gemini South.....	13
Gemini South Adaptive Optics Imager (GSAOI).....	15
FLAMINGOS Celebrates Its First Birthday.....	16
US Gemini Instrumentation Program Update.....	18

Observational Programs

NOAO Nighttime Proposals Due for 2002B.....	19
Community Access Time on the MMT and HET.....	20
The Gemini Time Allocation Process: An Update.....	20

CTIO Operations

Operation of the CTIO Small Telescopes: Request for Proposals.....	26
The Start of the Super MACHO Survey.....	27
New Observing Utility for Mosaic II.....	28
SOAR Optical Imager Progresses.....	29

ISPI Nears First Light, Proposals Solicited for 2002B.....	30
Hydra-CTIO Performance Improves.....	30
Internet2 Reaches CTIO.....	31
Enhancement To CTIO Instrument Shop Facilities.....	31
Chilean President Speaks on Dark Skies, Value of Astronomy.....	32

KPNO Operations

Observing Options for Semester 2002B.....	33
Shared Use of SparsePak on WIYN.....	33
WIYN Tip-Tilt Module Ready to Begin Commissioning.....	34
An Opportunity for Instrumentation Partnerships with KPNO.....	35
The Tougher Firewall.....	35

National Solar Observatory/GONG

From the NSO Director's Office.....	36
NSO Users' Committee Report.....	37
The ATST Site Survey.....	38
SOLIS.....	39
McMath-Pierce Adaptive Optics: Universal Tracker is Working.....	40
New NSO IR Camera System.....	40
GONG.....	41

Public Affairs & Educational Outreach

New Look For Kitt Peak Visitor Center - Inside and Out.....	44
Educational Outreach Update.....	45
A New Kind of Journal.....	46
In Brief.....	47
REU Students Meet Buzz Aldrin.....	48



NOAO Newsletter

Issue 70

June 2002

Science Highlights

Two's Company.....	3
X-Rays from Far Away.....	4
High-Resolution Near-IR Measurement of Sunspot Magnetic Fields.....	5
Extreme Limb Observations with the McMath-Pierce FTS and Image Stabilization System.....	6
The High-Order Solar Adaptive Optics Program: Progress Report.....	8

Director's Office

A Science Working Group for GSMT.....	10
Recycling Aging Telescopes.....	11
NOAO Science Archive Released.....	12
Symposium Demonstrates Vivid Legacy of Infrared Pioneer.....	13

US Gemini Program

Gemini Update.....	15
Phoenix Demonstration Science at Gemini South.....	16
Gemini Phase II Process Using the Observing Tool.....	17
Remembering Bob Schommer.....	18
US Gemini Instrumentation Program Update.....	19
US Gemini SAC Meeting.....	20
Two US Gemini Fellowships.....	21

Observational Programs

2002B Proposal Process Update.....	22
A Status Report on the NOAO Telescope Time Allocation Process.....	22
Joint HST-NOAO Observing Proposals.....	23

CTIO Operations

The Role of CTIO in the Development of the GSMT.....	24
SOAR Dome and Telescope Mount Come Together on Cerro Pachón.....	25

CTIO Operations cont.

Highlights of Conference on Controlling Light Pollution.....	26
Highlights of the IAOC Workshop "Galactic Star Formation Across the Stellar Mass Spectrum".....	28
The NSF's Astronomy and Astrophysics Postdoctoral Fellowship: Putting the Fun Back in Funding.....	29
Staff Comings.....	31

KPNO Operations

WIYN Tip-Tilt Module Success in Early Commissioning.....	32
Observatories on Kitt Peak Plan for the Future.....	33
Calypso Telescope Exploits Good Image Quality.....	34
KPNO Tucson Support Offices Relocated.....	34
Tohono O'odham Night on Kitt Peak.....	34

National Solar Observatory/GONG

From the NSO Director's Office.....	35
Remembering Karen Harvey.....	36
ATST Site Survey Status.....	37
SOLIS.....	37
New Diffraction-Limited Spectro- Polarimeter Sees First Light.....	39
Spectra and Spectropolarimetry with the CSUN-NSO IR Camera.....	40
GONG.....	41

Public Affairs & Educational Outreach

Educational Outreach Update.....	43
NOAO at NSTA Workshops.....	44
Undergraduate Astronomy Students Reach for the Southern Stars at CTIO.....	46
Hands-on-Universe Video Conference with CTIO.....	47
In Brief.....	47



NOAO Newsletter

Issue 71

September 2002

Science Highlights

A Planely Fundamental Survey.....	3
A Wide-Field Survey for Stellar Variability.....	4
Imaging Polarimetry in the Ultraviolet.....	6
Imaging Polarimetry of Jupiter and Saturn with ZIMPOL.....	7
12- μ m Magnetometry with Visible Tip-Tilt Image Stabilization.....	8

Director's Office

The GSMT Science Working Group.....	10
The Physics of the Universe.....	10
TSIP Launched!.....	12
LSST Science Working Group.....	12
Q&A with Alan Whiting.....	14

US Gemini Program

Gemini Update and Opportunities in Semester 2003A.....	15
Changes in Gemini Partner Share.....	16
GMOS Science Operations.....	16
NIRI, a Visitor's Perspective, 2002A.....	18
Phoenix Queue Update.....	19
US Gemini Instrumentation Program Update.....	20

Observational Programs

NOAO Nighttime Proposals Due for 2003A.....	22
Community Access to the Keck 10-Meter Telescopes Begins through TSIP.....	23
Community Access Time on the MMT and HET.....	23
Two New NOAO Survey Programs Approved.....	24
Observing Request Statistics for 2002B.....	25
Instruments Available in 2003A.....	26

CTIO Operations

News from the Director.....	29
The Future of the Small Telescopes at CTIO.....	29
ISPI Approaches First Light.....	30
Hydra-CTIO Update.....	31
Other Happenings at CTIO.....	31

KPNO Operations

WIYN Tip-Tilt Module Available for General Use.....	32
Summer Upgrades.....	33
Staff Changes.....	34
High-Risk Wildfire Season.....	35

National Solar Observatory/GONG

From the NSO Director's Office.....	36
SOLIS.....	37
First Light for McMath-Pierce Adaptive Optics.....	38
Ratio of Sodium to Potassium Atoms in the Atmosphere of Mercury.....	39
GONG.....	40

Public Affairs & Educational

Outreach

Educational Outreach Update.....	43
The REU Experience.....	44
Report on the First REU Site Directors' Meeting.....	46
Undergraduates Wanted for the 2003 CTIO REU Program!.....	46
In Brief.....	47

NEWS FLASH

Observing time now available on Keck! (See page 23)



NOAO Newsletter

Issue 72

December 2002

Science Highlights

Dark Visions of Finding a Cluster.....	3
Gemini + Phoenix = A Chemical Equation for the LMC.....	4
Arc of Blue Stars a Lingering Sign of Shredded Dwarf Galaxy.....	6
Vector Magnetic Fields in Prominences with the Advanced Stokes Polarimeter and Principal Component Analysis.....	7
X-Ray Radiance and Magnetic Flux.....	9

Director's Office

Come to the NOAO Town Meeting.....	10
"GSMT Book" Update Includes Cost Estimates, Science Case for Spectrograph.....	11

US Gemini Program

Gemini Update.....	12
Michelle.....	13
Acknowledgements in Publications.....	14
US Members of the Gemini Board.....	14
US Gemini Instrumentation Program Update.....	15

Observational Programs

Changes to the NOAO Survey Program—No New Surveys to Start in 2003.....	16
Joint HST-NOAO Observing Proposals.....	16
2003A Proposal Process Update.....	17

Cerro Tololo Inter-American Observatory

ISPI Sees First Light on Blanco 4-Meter.....	20
SOAR Achieves "First Glimmer".....	20
SuperMacho Returns to CTIO.....	21
Blanco 4-Meter Shutdown October 2002.....	22
Small Telescopes at CTIO: An Update.....	24
New Staff.....	25
Other Happenings at CTIO.....	25

Kitt Peak National Observatory

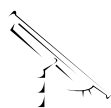
WIYN Strategic Planning.....	26
New Responsibilities.....	27

National Solar Observatory/GONG

From the NSO Director's Office.....	28
ATST Site Survey Status.....	30
SOLIS.....	31
New Imaging Spectropolarimetry at 2231 Nanometers.....	32
GONG.....	34

Public Affairs & Education Outreach

New Space Weather Exhibit and Second Public Telescope Draw Special Visitors.....	37
First North-South Educational Outreach Video Workshop Shows Promise.....	38
Project ASTRO Update.....	39
Undergraduates Needed for 2003 KPNO REU Program.....	40



NOAO-NSO Newsletter

Issue 73

March 2003

Science Highlights

Proplyds and Silhouette Disks in the Carina Nebula.....	3
A Warp in the Disk of the Large Magellanic Cloud?.....	4
Clustering of Red Galaxies in the NOAO Deep Wide-Field Survey.....	5
Solar H α Zeeman Spectropolarimetry.....	6

Director's Office

Two New Associate Directors of NOAO.....	7
TMT Consortium.....	8

NOAO Gemini Science Center

Announcing the NOAO Gemini Science Center (NGSC).....	9
Gemini Observing Opportunities for Semester 2003B.....	9
Reminders about Gemini Observing Proposals.....	10
NGSC Support of Gemini Phase-II Submissions.....	11
Phoenix News.....	11
NGSC Booth at the AAS Meeting in Seattle.....	12
US Gemini Instrumentation Program Update.....	13
Gemini Next-Generation Instrumentation Planning.....	14

Observational Programs

NOAO 2003B Proposals Due 31 March 2003.....	15
Community Access Time at the Keck, MMT, and HET Observatories.....	16
The Hobby-Eberly Telescope Medium-Resolution Spectrograph.....	16
Observing Request Statistics for 2003A.....	18
KPNO Instruments Available for 2003B.....	19
CTIO Instruments Available for 2003B.....	20
Gemini Instruments Possibly Available for 2003B.....	20

Observational Programs cont.

KECK Instruments Available for 2003B.....	21
MMT Instruments Available for 2003B.....	21
HET Instruments Available for 2003B.....	21

Cerro Tololo Inter-American Observatory

Big Telescopes and Little Children.....	22
First ISPI Run with Visiting Astronomers.....	23
33,490 Mosaic II Exposures.....	25
Site Testing/Surveying in the Atacama Region of Northern Chile.....	26
Site Activities on Tololo and Pachón.....	28
Small Telescopes Update.....	28
New Faces in ETS.....	29
Other Happenings at CTIO.....	30

Kitt Peak National Observatory

A New Doppler Radial Velocity Machine at Kitt Peak for Extrasolar Planet Searches.....	31
---	----

National Solar Observatory/GONG

From the NSO Director's Office.....	34
ATST Design Progress.....	35
SOLIS.....	36
Infrared Heterodyne Observations at the McMath-Pierce West Auxiliary Telescope.....	37
Infrared Observations with McMath-Pierce Adaptive Optics.....	39
The Improved Solar Observing Optical Network (ISOON).....	40
GONG.....	41

Public Affairs & Education Outreach

Educational Outreach Update.....	43
----------------------------------	----



NOAO-NSO Newsletter

Issue 74

June 2003

Science Highlights

Improving the Cepheid Distance Scale.....	3
What Sets the Initial Angular Momentum of a Star?.....	4
Low-Mass Stars Pair Up Too Often.....	5
Infrared Molecular Lines Reveal Rapid Outflow in Sunspot Penumbra Fibrils.....	7

Director's Office

From the Director.....	8
LSST Corporation Begins Work.....	9
Q&A with David Sprayberry.....	10

NOAO Gemini Science Center

Gemini Update.....	12
Queue Observing and Nod & Shuffle with GMOS-North.....	12
GMOS-South Commissioning Report.....	14
Two NGSC Fellowships.....	16
US Members of the Gemini Board.....	16
NGSC Instrumentation Program Update.....	17

Observational Programs

2003B Proposal Process Update.....	19
------------------------------------	----

Cerro Tololo Inter-American Observatory

From the CTIO Director's Office.....	22
Blanco 4-Meter Dome Shutter Failure.....	22
Small Telescopes Going Strong.....	23
SOAR Active Optics System Enters the Last Lap.....	24
Staff Comings and Goings at SOAR.....	25

Kitt Peak National Observatory

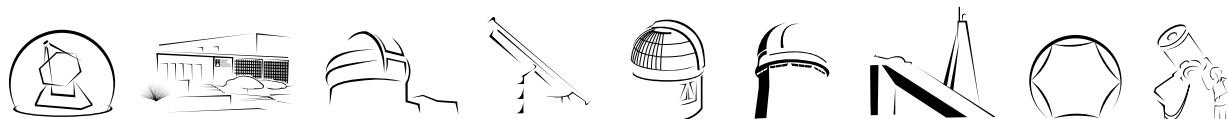
KPNO Instruments for the Future.....	26
--------------------------------------	----

National Solar Observatory/GONG

From the NSO Director's Office.....	28
The High-Order Solar Adaptive Optics Project Achieves Major Milestones.....	30
First Infrared Spectra with the McMath-Pierce Adaptive Optics System.....	32
ATST Design Progress.....	32
SOLIS.....	34
NSO Aladdin Camera Project.....	35
GONG.....	36

Public Affairs & Educational Outreach

Educational Outreach Update.....	39
REU/PIA Students at CTIO.....	41
Ahoy, NOAO South!.....	42



NOAO-NSO Newsletter

Issue 75

September 2003

Science Highlights

The NOAO Survey for Ionization in Neutral Gas Galaxies.....	3
Resonant Kuiper Belt Objects Discovered by the Deep Ecliptic Survey.....	4
Signatures of Large-Scale Coronal Eruptive Activity, Associated Flares, and Propagating Chromospheric Disturbances.....	5

Director's Office

Design and Development of a Thirty-Meter Telescope.....	7
Frontier Science Enabled by a Giant Segmented Mirror Telescope.....	9
Women in Astronomy II—Thoughts for NOAO and NSO.....	11
Finding Our Place in the Cosmos.....	14
Announcement of Opportunity—Blanco Instrumentation.....	15

NOAO Gemini Science Center

Gemini Observing Opportunities for Semester 2004A.....	16
T-ReCS at Gemini South: First Light and Beyond.....	17
Reminders about Gemini Observing Proposals.....	19
NGSC Webcast on 2004A Gemini Observing Proposals.....	19
Gemini Next-Generation Instrumentation Planning.....	20
NGSC Instrumentation Program Update.....	21

Observational Programs

NOAO 2004A Proposals Due 30 September 2003.....	23
Update on the SMARTS Telescopes at CTIO.....	24
Community Access Time at the Keck and HET Observatories.....	24

Observational Programs (continued)

A New Era in Data Access.....	24
The NOAO Survey Program in 2003.....	25
Observing Request Statistics for 2003B.....	26
KPNO Instruments Available for 2004A.....	27
CTIO Instruments Possibly Available for 2004A.....	28
Gemini Instruments Possibly Available for 2004A.....	28
Keck Instruments Available for 2004A.....	29
HET Instruments Available for 2004A.....	29

Cerro Tololo Inter-American Observatory

From the CTIO Director's Office.....	30
CELT-AURA Site Testing for the Thirty-Meter Telescope.....	31
SOAR Status.....	31
Developments at "El Peñon" and Cerro Pachón.....	32

Kitt Peak National Observatory

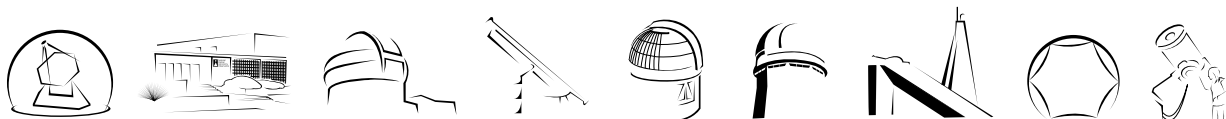
Technical Activities for the Summer and Autumn.....	33
Fire Prevention Efforts at Kitt Peak.....	34

National Solar Observatory/GONG

From the NSO Director's Office.....	35
Magneto-Optical Filter System Achieves First Light.....	36
ATST Design Progress.....	37
SOLIS.....	40
NASA Sun-Climate Task Group.....	41
GONG.....	42

Public Affairs & Educational Outreach

Clear Skies and Challenging Observing Projects: The 2003 TLRBSE Summer Workshop.....	45
NSO and KPNO 2003 REU Attendees.....	47
The REU/PIA Programs at CTIO.....	48



NOAO-NSO Newsletter

Issue 76

December 2003

Science Highlights

The Closest T Dwarf is a Binary.....	3
Spectroscopy of $z \sim 6$ Quasars with MARS.....	5
The Chemical Origin of Fluorine.....	6
The Zeeman Effect in the G Band.....	7

Director's Office

From the Director.....	9
New Opportunity: GNIRS Science Campaigns.....	10
TSIP Begins Its Third Year with New Opportunities.....	10
Appeal of NOAO Postdoc Path Appears to Be Growing.....	11

NOAO Gemini Science Center

Gemini Update.....	13
GNIRS Coming Soon.....	13
Michelle Update.....	14
NGSC at the January 2004 AAS Meeting.....	15
NGSC Instrumentation Program Update.....	15
NGSC Webcast.....	17

Observational Programs

2004A Proposal Process Update.....	18
NOAO Survey Program Update.....	18

Cerro Tololo Inter-American Observatory

Enhancing Excellence.....	22
A Tribute to Malcolm Smith.....	22
SOAR AOS Passes Acceptance Testing.....	23
SOAR Optical Imager Integrated on Cerro Pachón.....	24
New Arrivals.....	24
Announcement of Opportunity for a Blanco Instrumentation Partnership.....	25

Kitt Peak National Observatory

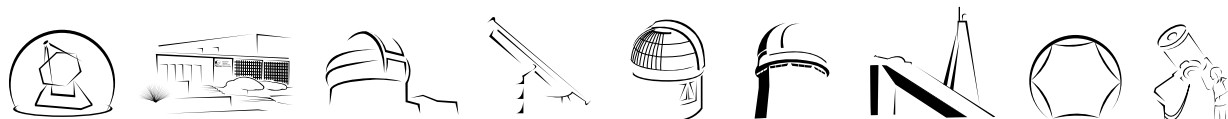
A Year of Ambitious Plans for WIYN Projects.....	26
--	----

National Solar Observatory/GONG

From the NSO Director's Office.....	28
Scientific Perspective for the ATST.....	29
ATST Passes through Conceptual Design Review.....	31
SOLIS.....	33
Diffraction-Limited Polarimetry at the Dunn Solar Telescope.....	35
The Sun Sets on the Kitt Peak Vacuum Telescope.....	36
IBIS Successfully Installed at the Dunn Solar Telescope.....	38
GONG.....	39

Public Affairs & Education Outreach

Optics Education at NOAO Receives Major Boost.....	42
The 2004 REU Program at Kitt Peak National Observatory.....	43
Fall 2003 Project ASTRO Training Workshop.....	44



NOAO-NSO Newsletter

Issue 77

March 2004

Science Highlights

Star Formation History at the Galactic Center.....	3
The Nature of Damped Ly α Absorbers via the Clustering of Lyman Break Galaxies.....	4
High-Resolution Thermal Infrared Imaging of SN 1987A.....	5
NOAO at the January AAS Meeting.....	6

Director's Office

Creating a Decadal Survey Roadmap.....	8
Adaptive Optics Development Program—First Technology Development Awards and Second Roadmap Workshop.....	9
LSST: A Progress Report.....	10
A Progress Report from AURA's New Initiatives Office.....	11
NOAO Helps Rebuild Mount Stromlo's Library.....	13
Postdoc Experience at NOAO South: Rewards and Extra Challenges.....	14
Richard Joseph Elston (1 July 1960 – 26 January 2004).....	16

NOAO Gemini Science Center

Gemini Observing Opportunities for Semester 2004B.....	17
GNIRS Key Science Opportunity.....	18
GNIRS Commissioning.....	19
Gemini Next-Generation Instrumentation: Progress and Opportunities.....	20
The Gemini/IRAF Project.....	21
Gemini Science 2004 Meeting.....	22
NGSC Instrumentation Program Update.....	22
NGSC Booth at the AAS Meeting in Atlanta.....	23

Observational Programs

NOAO 2004B Proposals Due 31 March 2004.....	24
Community Access Time Available in 2004B with Keck, HET, Magellan, and MMT.....	25
Observing Request Statistics for 2004A.....	26
KPNO Instruments Available for 2004B.....	27

Observational Programs (continued)

CTIO Instruments Available for 2004B.....	28
Gemini Instruments Possibly Available for 2004B.....	28
Keck Instruments Available for 2004B.....	29
MMT Instruments Available for 2004B.....	29
HET Instruments Available for 2004B.....	29
Magellan Instruments Available for 2004B.....	29

Cerro Tololo Inter-American Observatory

SOAR Mirror Delivered to Cerro Pachón.....	30
SOAR Telescope Time—Coming Soon!.....	31
SOAR-AO Passes Delta CoDR and Receives a Name.....	31
New Instruments to See the “Seeing”.....	32
The Hexapod Telescope.....	34
Changes in Computing Staffing and Structure at CTIO.....	34

Kitt Peak National Observatory

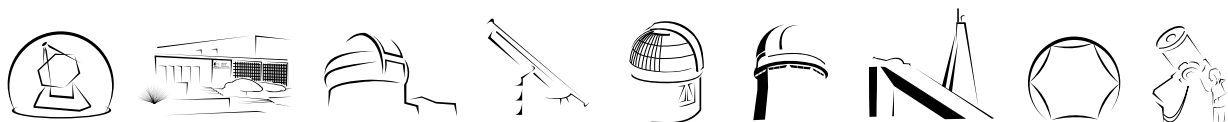
WTTM Completes Commissioning.....	35
Proposing for an Upgraded Hydra on WIYN.....	37
Multi-Object Spectroscopy with FLAMINGOS.....	37

National Solar Observatory/GONG

From the NSO Director's Office.....	38
ATST Getting Back to Design.....	39
SOLIS.....	41
Tip-Tilt Observations of Mercury's Sodium Exosphere.....	42
High-Resolution IR Evershed Flow Maps Using AO at the McMath-Pierce Solar Telescope.....	43
GONG.....	45

Public Affairs & Educational Outreach

Atlanta AAS Meeting Bears Fruit for NOAO and Gemini News.....	48
--	----



NOAO-NSO Newsletter

Issue 78

June 2004

Science Highlights

A Luminous Lyman- α Galaxy at $z=6.535$	3
A Spectroscopic Survey for Superwinds in Massive Starbursts	4
Faint Galaxy Counts and the Normalization of the Galaxy Luminosity Function	5
Metal Hydride Opacities in Brown Dwarfs.....	7
Predicting the Maximum of Solar Activity with NSO Coronal Data	8

Director's Office

A Long-Range Plan for Optical/Infrared Ground-Based Facilities	10
Workshop Updates Adaptive Optics Roadmap.....	11
NOAO Astronomer and Tohono O'odham Schools Official Honored by IDA	12

NOAO Gemini Science Center

Gemini Update.....	13
Gemini Data Comes Online	13
GNIRS Commissioning and System Verification Go Well.....	15
NGSC Instrumentation Program Update	17

Observational Programs

2004B Proposal Process Update.....	19
2004B Instrument Request Statistics by Telescope.....	19
2004B TAC Members.....	22

Cerro Tololo Inter-American Observatory

New Blanco Instrumentation.....	23
Retirement of the Blanco Echelle and RC Spectrographs.....	23
A Wonderful Day for SOAR Dedication.....	24
SOAR Sees Stars at Last	25

Kitt Peak National Observatory

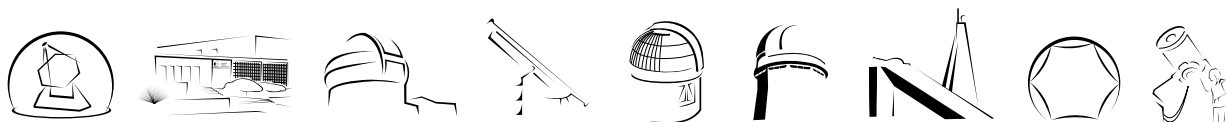
The International Dark-Sky Association: A Critical Resource for Astronomy.....	27
The New OTAs Are Here!.....	30
Calypso 1.2-Meter Telescope Seeking Permanent Home.....	31

National Solar Observatory/GONG

From the NSO Director's Office	32
Working toward a Preliminary Design for ATST	34
SOLIS	35
GONG.....	37

Public Affairs & Educational Outreach

Science Education Highlights: Frenzied Teachers in Atlanta and a Telescope Building Challenge for Students.....	40
Undergraduate Students Join in CTIO Research	41
KOLD CBS-TV Live Weathercast from Kitt Peak.....	42
NOAO Hosts Math, Science, and Technology Fun Fest Booth at TCC	43
Tohono O'odham Family Night on Kitt Peak.....	43
The Road to Pachón.....	44



NOAO-NSO Newsletter

Issue 79

September 2004

Science Highlights

High-Resolution Near-Infrared Spectroscopy of FU Ori Objects.....	3
Special Session on the NOAO Deep Wide-Field Survey at the June AAS Meeting.....	4
Surveying the NOAO Deep Wide-Field Survey with IRAC.....	6
Observational Evidence for Magnetic Flux Submergence.....	8

Director's Office

Building the System from the Ground Up—The Second Community Workshop on the O/IR System.....	9
The NOAO Data Products Program.....	10
Politics and Science in a Complex World.....	10
Mark Dickinson Q&A.....	12

NOAO Gemini Science Center

Gemini Observing Opportunities for Semester 2005A.....	14
GNIRS Key Science Opportunity in Semester 2005A.....	15
Following the Aspen Process: A High-Resolution Near-Infrared Spectrograph.....	15
Gemini/IRAF Project Update.....	16
Gemini Science 2004 Meeting.....	17
NGSC Instrumentation Program Update.....	19

Observational Programs

NOAO 2005A Proposals Due 30 September 2004.....	21
Community Access Time Available in 2005A with Keck, HET, Magellan-I, and MMT.....	22
Current Status of the Hobby-Eberly Telescope.....	22
KPNO Instruments Available for 2005A.....	23

Observational Programs continued

CTIO Instruments Available for 2005A.....	24
Gemini Instruments Possibly Available for 2005A.....	25
Keck Instruments Available for 2005A.....	26
MMT Instruments Available for 2005A.....	26
HET Instruments Available for 2005A.....	26
Magellan Instruments Available for 2005A.....	26
Observing Request Statistics for 2004B.....	27

Cerro Tololo Inter-American Observatory

Tololo Key Pathfinder for Thirty Meter Telescope Site Testing.....	28
Goodman Spectrograph Arrives in Chile.....	31
Mosaic II Detector Replacement.....	32
Blanco Telescope Shutdown 2004.....	32
Other Happenings @ CTIO.....	33

Kitt Peak National Observatory

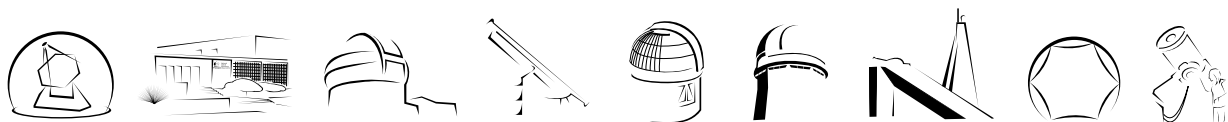
In Remembrance of Jim DeVeney.....	34
Imaging at WIYN.....	35
KPNO Telescope Scheduling Constraints.....	35

National Solar Observatory/GONG

From NSO Director's Office.....	36
ATST.....	37
SOLIS.....	40
GONG.....	42

Public Affairs & Educational Outreach

2004 TLRBSE Summer Workshop Reaches New Heights.....	45
First Hands-On Optics Kits Debut to Positive Reviews.....	47
KPNO and NSO 2004 REU Attendees.....	48



NOAO-NSO Newsletter

Issue 80

December 2004

Science Highlights

A Deep Imaging Survey for Intracluster Light	3
Optical Interferometry of High-Luminosity Cool Stars.....	4
Temperate Latitude Clouds on Titan.....	5
New Interest in an Old Line.....	7

Director's Office

The Perfect Decade.....	8
New Guidelines for TSIP in FY 2005	9
LSST Update	9
Regional Workshop on Public Facilities and the System at Yale.....	10
Q&A with Letizia Stanghellini.....	11

NOAO Gemini Science Center

Gemini Update.....	13
Opportunities to Use the Gemini Telescopes to Observe the Deep Impact Comet Encounter	13
Following the Aspen Process: Extreme Adaptive Optics Coronagraph	14
Two New NGSC Staff Members	15
NGSC Instrumentation Program Update	16

Observational Programs

NOAO Survey Program Letters of Intent Due January 31	18
2005A Proposal Process Update	18
2005A Instrument Request Statistics by Telescope.....	19
2005A TAC Members.....	22
"CATCH"— A Web-Based Clearinghouse for Community Telescope Information and Access	23

Cerro Tololo Inter-American Observatory

Dark Energy Camera Team Visits Chile.....	24
SMARTS: Results and Upgrades.....	25
SOAR Update	25
The UNC Burch Program Brings Astronomy Students to La Serena	26

Kitt Peak National Observatory

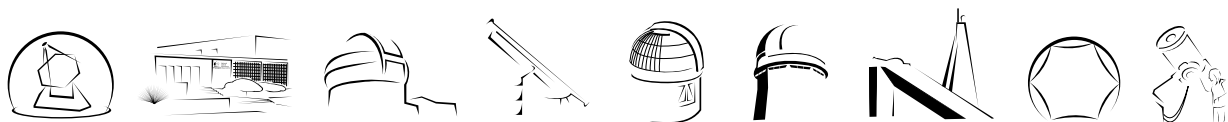
WIYN's Major Advances in Upgrades and New Instrumentation.....	28
First-Light Run for IRMOS a Major Success.....	29
KPNO and the University of Maryland— An Effective Partnership	31

National Solar Observatory

From the NSO Director's Office.....	32
Good Science Usually Means a Good Mystery.....	32
ATST Project Developments.....	34
SOLIS.....	36
Solar MHD: Theory and Observations— A High Spatial Resolution Perspective.....	37
GONG.....	38

Public Affairs and Educational Outreach

NOAO-Trained Teachers to Observe with Spitzer.....	41
ASTRO-Tucson Fall 2004 Workshop Largest Yet	42
The 2005 REU Program at the Kitt Peak National Observatory	43
"Nebulosa Del Ojo De Gato"	44



NOAO-NSO Newsletter

Issue 81

March 2005

Science Highlights

Probing the Bulge of M31 with Altair+NIRI on Gemini North.....	3
The SuperMACHO Project.....	5
The Deep Lens Survey.....	7
Quiet Sun Magnetic Fields at High Angular Resolution.....	8

Director's Office

The NSF Senior Review.....	9
Q&A with Jeffrey Kantor.....	10

NOAO Gemini Science Center

Gemini Observing Opportunities for Semester 2005B.....	12
GNIRS Key Science Opportunity in Semester 2005B.....	13
Update on the Opportunity to Use Gemini to Observe the Deep Impact Comet Encounter.....	14
Gemini Publications.....	14
Gemini/IRAF Project Update.....	15
Following the Aspen Process: The Gemini Wide-Field Multi-Object Spectrograph (WFMOS).....	16
NGSC Instrumentation Program Update.....	18
NGSC Booth at the AAS Meeting in San Diego.....	19

Observational Programs

2005B Standard Proposals Due 31 March 2005.....	20
NOAO Survey Program Proposals Due 15 March 2005.....	21
Community Access Time Available in 2005B with HET, Magellan, and MMT.....	22
The End of an Era.....	22
Observing Request Statistics for 2005A.....	23
KPNO Instruments Available for 2005B.....	24
CTIO Instruments Available for 2005B.....	25
Gemini Instruments Possibly Available for 2005B.....	26
HET Instruments Available for 2005B.....	27
MMT Instruments Available for 2005B.....	27
Magellan Instruments Available for 2005B.....	27

Cerro Tololo Inter-American Observatory

A Simple Turbulence Simulator for Adaptive Optics.....	28
The Dark Energy Camera: A Progress Report.....	30
New Filter Transmission Measurements for Mosaic II at Blanco Prime Focus.....	31
Other Happenings at CTIO.....	31

Kitt Peak National Observatory

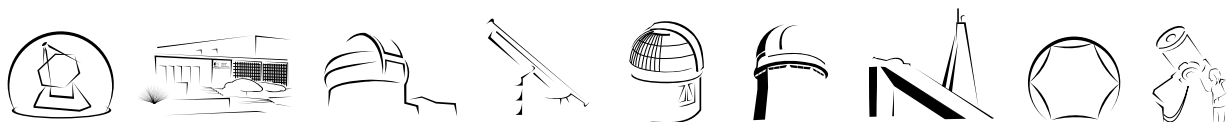
KPNO and the NSF Senior Review.....	32
Conceptual Design Review for the WIYN One-Degree Imager.....	33

National Solar Observatory

From the NSO Director's Office.....	34
ATST Project Developments.....	35
SOLIS.....	38
IBIS Now Available as a User Instrument.....	40
GONG.....	41

Public Affairs & Educational Outreach

A Busy Time Domain for LSST at the AAS Meeting.....	44
Take Me to Your (Project ASTRO) Leader!.....	44



NOAO-NSO Newsletter

Issue 82

June 2005

Science Highlights

Low-Luminosity, Compact Accretion Sources in the Galaxy.....	3
Gemini Observations of the Two Intrinsically Brightest Minor Planets.....	5
The Sun's New Neighbors.....	7
Magnetic Field Changes during Solar Flares.....	8
The Spatial Distribution of Sodium on Mercury.....	9

Director's Office

More Details Emerge on the NSF Senior Review.....	11
New Partnership Opportunities at NOAO.....	13
Q&A with Tom Matheson.....	14

NOAO Gemini Science Center

The Gemini Rapid Response Mode.....	16
NIRI and Altair: Report from a Successful Observing Run.....	17
Phoenix in Classical Mode.....	18
Following the Aspen Process: Presentations and Reviews.....	18
NGSC Instrumentation Program Update.....	20

Observational Programs

2005B Proposal Process Update.....	21
2005B Instrument Request Statistics by Telescope.....	21
2005B TAC Members.....	23

Cerro Tololo Inter-American Observatory

SOAR Update.....	24
Virtual Observing.....	25
Other Happenings at CTIO.....	27

Kitt Peak National Observatory

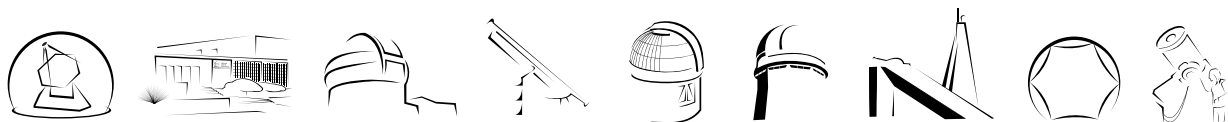
Tohono O'odham Dispute Process of VERITAS Site Selection on Kitt Peak.....	28
Community Time Offered on Calypso 1.2-Meter Telescope.....	29

National Solar Observatory/GONG

A Time of Transitions.....	30
Austin Keith Pierce 1918–2005.....	32
ATST Project Developments.....	33
SOLIS.....	35
Instrumentation for Nighttime Use at the McMath-Pierce Solar Telescope.....	36
GONG.....	38

Public Affairs & Educational Outreach

Astrobiology Weekend at the McMath-Pierce Solar Telescope.....	41
2005 CTIO REU/PIA PROGRAM.....	41
The Sky is the Limit—Student Light Pollution Surveys in Both Hemispheres.....	43
FunFest 2005.....	44
“World Year of Physics” Celebrated at Kitt Peak.....	44



NOAO-NSO Newsletter

Issue 83

September 2005

Science Highlights

Spitzer Mid-Infrared Spectroscopy: Detection of Polycyclic Aromatic Hydrocarbon Molecules in Ultraluminous Infrared Galaxies at $z \sim 2$	3
Lyman- α Halos and the Formation of Massive Galaxies	4
An Update on the ESSENCE Project: Supernova Cosmology with the CTIO 4-m Telescope.....	5

Director's Office

The NOAO Submission to the Senior Review	7
Announcement of Opportunity for Partnerships at NOAO	9
NOAO Partners with NCSA	10
Data Products and Software at NOAO — Some Changes Coming	10
IRAF Help-Desk Users—Don't Panic!.....	12
Page Charge Support for Papers from NOAO Science Archive Data.....	12

NOAO Gemini Science Center

Gemini Observing Opportunities for Semester 2006A.....	13
Pre-Submission Technical Review of Proposals.....	14
A New Addition to the Gemini Instrument Suite: bHROS	14
NICI Planet Search Campaign	15
GNIRS Servicing Mission	16
NGSC Instrumentation Program Update	18

Observational Programs

NOAO 2006A Observing Proposals Due 30 September 2005	19
Community Access Time Available in 2006A with Keck, HET, Magellan, and MMT.....	20
Three New NOAO Survey Programs	20
CTIO Instruments Available for 2006A	21
Gemini Instruments Possibly Available for 2006A	22
KPNO Instruments Available for 2006A.....	23
HET Instruments Available for 2006A	24
MMT Instruments Available for 2006A	24
Magellan Instruments Available for 2006A	24
Keck Instruments Available for 2006A.....	24
Observing Request Statistics for 2005B Standard Proposals.....	25

Cerro Tololo Inter-American Observatory

PROMPT Progress	26
Charon Occultation Observed at SOAR and CTIO	28
SMARTS 2	30
Other Happenings at CTIO	31

Kitt Peak National Observatory

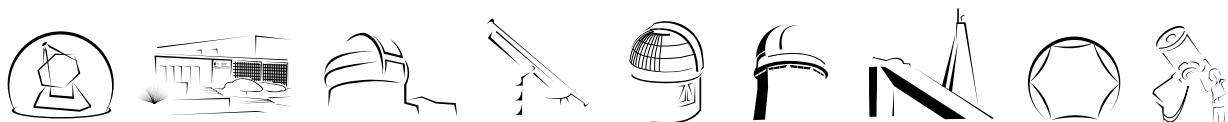
Judge Dismisses Tohono O'odham Lawsuit	32
SQIID to Be Retired after Semester 2006A.....	32
Planning for NEWFIRM Scientific Verification Observations in 2006A	33
NEWFIRM: A Look into the Future.....	34
IRMOS—Current Status and Opportunity for Shared-Risk Observing.....	34
Exabyte Decommissioning.....	35

National Solar Observatory

From The NSO Director's Office	36
"SteinFest"—NSO Summer Workshop Honors Bob Stein.....	37
ATST Project Developments.....	38
NSO Array Camera Sees First Light	40
First Tests of the McMath-Pierce IRAO System on Planets and Stars	41
GONG++.....	42

Public Affairs & Educational Outreach

Deep Impact—A Big Hit for Science and Public Outreach.....	45
Timely Supernova Observations at the TLRBSE Summer Workshop.....	46
The REU Experiment.....	47



NOAO-NSO Newsletter

Issue 84

December 2005

Science Highlights

The Short Burst Revolution.....	3
Kinematics of Thick Disk Stars with the Gemini Telescopes	4
A Survey of Local Group Galaxies Currently Forming Stars	6
REU Student Science Part 1:	
Angular Momentum in NGC 6611	8
REU Student Science Part 2:	
Searching for Long-Period Cepheids in NGC 4258	
with GMOS on Gemini North.....	9
Seismic Imaging of Active Region AR-10808.....	10

Director's Office

NSF Funding for Decadal Survey Initiatives	12
TMT Week	13

NOAO Gemini Science Center

NIFS and Gemini North Adaptive Optics in 2006A	16
TEXES Arrives at Gemini in 2006	17
bHROS Update	19
Electronic Distribution of Gemini Data.....	20
NGSC Instrumentation Program Update	21

Observational Programs

2006A Proposal Process Update.....	22
NOAO Survey Program to Resume,	
Letters of Intent due January 31	23
2006A Time Allocation Committee Members	23
2006A Instrument Request Statistics.....	24

Cerro Tololo Inter-American Observatory

Applied Astronomy: A Survey for Space Debris.....	27
with the Curtis-Schmidt	27
Scientific Staff Changes & Other Happenings	28

Kitt Peak National Observatory

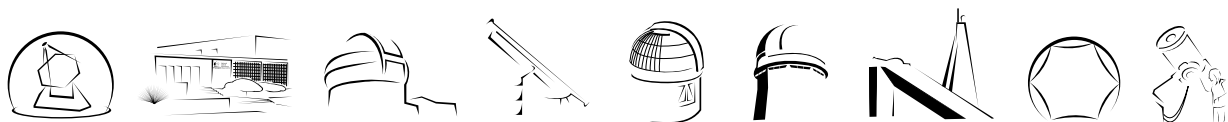
Delay for NEWFIRM First Light.....	29
SQIID Available for Observing in Semester 2006B	29
Have Leatherman, Will Travel	30
In Appreciation: Khairy Abdel-Gawad.....	30

National Solar Observatory/GONG

From the Director's Office.....	31
Richard B. Dunn 1927-2005	33
ATST Project Achieves "Readiness"	34
NSO Array Camera Observes X1.8 Flare in He 1083 nm.....	36
GONG+.....	38

Public Affairs & Educational Outreach

SOAR and PROMPT Team Up for	
Gamma Ray Burst Discovery.....	41
Tucson Hosts Productive Week of Outreach Meetings.....	42
An Extreme Makeover at the Kitt Peak Visitor Center	43
Students Needed for the 2006 REU Program at Kitt Peak	44
Diffuse Light in the Virgo Cluster.....	44



NOAO/NSO Newsletter

Issue 85

March 2006

Science Highlights

NSF Budget Request for 2007.....	2
Light Echoes of Ancient Supernovae in the Large Magellanic Cloud.....	3
The SLACS Survey: A Bumper Crop of New Gravitational Lenses	4
The Magellanic Cloud Emission Line Survey (MCELS)	6
Synthetic CH- and CN-band Images of Solar Magnetoconvection.....	8
Direct Measurements of Zonal Winds on Mars through Ultra-High-Resolution Observations of CO ₂	9

Director's Office

Announcing the NOAO NVO Portal.....	11
Nicholas Suntzeff Leaves to Take Up Mitchell Chair	13
Sidney Wolf Awarded AAS Education Prize	13

NOAO Gemini Science Center

Gemini Observing Opportunities for Semester 2006B.....	16
NIFS Commissioning at Gemini North	17
NGSC Staff Comings and Goings	19
National Gemini Offices & Gemini Staff Meeting	20
Probing the Dark Universe with Subaru and Gemini.....	20
NGSC Booth at the AAS Meeting in Washington, DC.....	22
NGSC Instrumentation Program Update	23

Observational Programs

2006B Standard Proposals Due 31 March 200624	
Surveys Due 15 March 2006	24
Community Access Time Available in 2006B with Keck, HET, Magellan, and MMT.....	25
Gemini Instruments Possibly Available for 2006B	26
CTIO Instruments Available for 2006B.....	27
KPNO Instruments Available for 2006B	28
Keck Instruments Available for 2006B	29

HET Instruments Available for 2006B.....	29
MMT Instruments Available for 2006B	29
Magellan Instruments Available for 2006B	29
Observing Request Statistics for 2006A.....	30
Standard Proposals.....	30

Cerro Tololo Inter-American Observatory

SOAR Update	31
Filter-Buying Consortium Sought For SOAR.....	32
SOAR Adaptive Module Passes PDR.....	33
Other Happenings at CTIO	34

Kitt Peak National Observatory

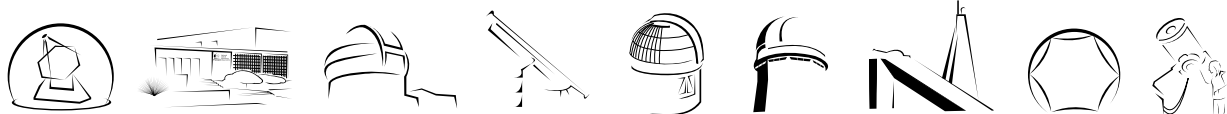
The Future of Imaging at WIYN.....	35
Yunnan Observatory Mirrors Coated by KPNO.....	36
NEWFIRM Moves Up – and Forward	37
Changes In KPNO Support Office Staff.....	38
Scott Bulau Joins NSO and ATST	38

National Solar Observatory

From the Director's Office.....	39
ATST Update.....	40
NAC Spectroscopy Tests in Thermal Solar Spectrum	42
An IFU for Diffraction-Limited 3-D Imaging Spectroscopy and Polarimetry	42
GONG++	44

Public Affairs & Educational Outreach

AAS Meeting Exhibit and News Activity Draws Strong Interest	46
NASA-NOAO Spitzer Teachers Continue to Exhibit Infrared Excess	47



NOAO/NSO Newsletter

Issue 86

June 2006

Science Highlights

Using the 'NOAO System' of Small and Large Telescopes to Investigate Young Brown Dwarfs.....	3
The First Complete Solar Cycle of GONG Observations of Solar Convection Zone Dynamics.....	5
Discovery of the First Radio-Loud Quasar at $z > 6$	6
Reversed Granulation and Gravity Waves in the Mid-Photosphere.....	8
The Volume-Averaged Properties of Luminous Galaxies at $z < 3$	9

Director's Office

TMT Project Passes Conceptual Design Review.....	12
Taft Armandroff moves from NGSC Director to Keck Director.....	14

NOAO Gemini Science Center

The Gemini Planet Imager.....	15
Phoenix: Five Years of Commitment to Gemini South.....	17
Gemini HelpDesk: Helpful Hints for Users.....	18
NGSC Instrumentation Program Update.....	20
New NGSC Staff.....	20

Observational Programs

2006B Proposal Process Update.....	22
2006B Instrument Request Statistics by Telescope.....	22
2006B Time Allocation Committee Members.....	25

Cerro Tololo Inter-American Observatory

Conociendo al Pueblo Atacameño.....	26
The El Peñón DIMM.....	28
SOAR Telescope Update.....	28
Robert Blum Moves from NOAO South to North.....	29

Kitt Peak National Observatory

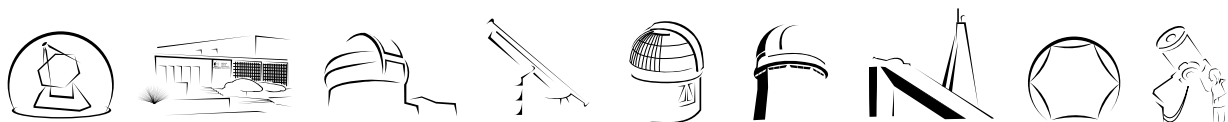
The Tohono O'odham Nation, the NSF, VERITAS, and Kitt Peak National Observatory.....	30
The WIYN One-Degree Imager and its Precursor QUOTA.....	32
Thank You, Judy Prosser, for 18 Years of Service!.....	34

National Solar Observatory/GONG

From the Director's Office.....	35
ATST Update: Formal NHPA Consultation Meetings Held on Maui.....	37
SOLIS.....	38
Virtual Camera Expands Flexibility at the Dunn Solar Telescope.....	39
GONG ⁺⁺	41

Public Affairs and Educational Outreach

Astronomy From the Ground Up Launches from Tucson....	44
GLOBE at Night Reaches More Than 18,000 Participants on Six Continents.....	45
The CTIO REU & PIA PROGRAM - 2006.....	46
Student Videoconference Has Far-Reaching Results Across the Equator.....	48



NOAO/NSO Newsletter

Issue 87

September 2006

Science Highlights

- A Large Population of $1 < z < 2$ Galaxy Clusters in the IRAC Shallow Survey of the NDWFS Bootes Field..... 3
- Filling in the Gaps: WIYN + Hydra Explores Changing Carbon Abundances in Globular Clusters..... 5
- A 6100-Gauss Sunspot Emerges..... 6
- An Active Chromosphere on a 55 Jupiter-Mass Object 8

Director's Office

- CATCH Web Site Publicizes Availability of Telescope Time....10
- Users Committee Meets October 5-6.....10

NOAO Gemini Science Center

- Gemini Observing Opportunities for Semester 2007A.....11
- Limited Phoenix Availability for 2007A 12
- An Update on bHROS for 2007A 12
- NGSC Staff Arrivals and Relocations..... 13
- Plans for Gemini Science 2007 in Iguazú Falls, Brazil..... 13
- NGSC Instrumentation Program Update14
- 2007A Observing Proposals Due 2 October 2006..... 15
- Two New NOAO Survey Projects..... 15

Observational Programs

- Community Access Time Available in 2007A with Keck, HET, Magellan, and MMT16
- Observing Request Statistics for 2006B Standard Proposals.....17
- KPNO Instruments Available for 2007A18
- Gemini Instruments Possibly Available for 2007A 19
- CTIO Instruments Available for 2007A..... 20
- Keck Instruments Available for 2007A 21
- HET Instruments Available for 2007A..... 21
- MMT Instruments Available for 2007A..... 21
- Magellan Instruments Available for 2007A..... 21

Cerro Tololo Inter-American Observatory

- Dark Energy Survey Passes Fermilab Review..... 22
- Blanco Update 22
- SOAR Update 23
- CTIO Supports Award-Winning Science 24

Kitt Peak National Observatory

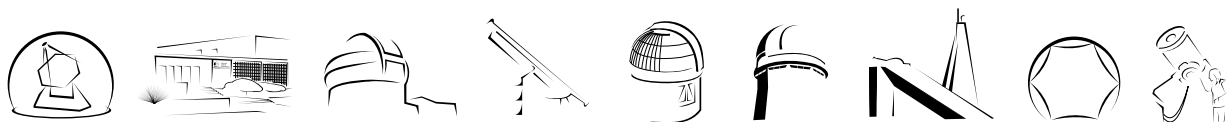
- Collaborations Improve Capabilities of KPNO and Our Partners 25
- NSF Grant Helps Fund Development of New Imager for WIYN 0.9-meter telescope..... 27

National Solar Observatory/GONG

- From the Director's Office 28
- ATST Update: Preliminary Design Review Scheduled; Refinements Made to Optical Design..... 29
- SOLIS31
- Granulation Imaging in the K-band with the NSO Array Camera 32
- Successful First Summer School in Solar Physics 33
- GONG..... 34

Public Affairs and Educational Outreach

- The Dwarf Moves to a New Home 37
- Hands-On Optics Engages Local Boys & Girls Clubs 38
- The Gemini Virtual Tour - Version 4.0..... 39
- CTIO REU Program 2007 40



NOAO/NSO Newsletter

Issue 88

December 2006



Science Highlights

Probing the Outer Limits of Dwarf Galaxies.....	3
The Suns of M67.....	5



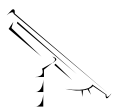
Director's Office

NOAO and the NSF Senior Review	6
The Senior Review and the NOAO Mission	7
Tribute to Hugo E. Schwarz.....	9
The NOAO Gemini Science Center and the Senior Review	10



NOAO Gemini Science Center

Mid-Infrared Astronomy at the Gemini Observatory: Capabilities and Recent Scientific Highlights.....	11
Gemini Near-infrared Integral Field Spectrometer.....	14
Gemini Science 2007 Conference Update	14
Gemini Data Reduction Working Group	15
The Gemini-Subaru Time Exchange Program.....	15
NGSC Instrumentation Program Update	16



Observational Programs

2007A Proposal Process Update.....	17
SINGG Data Released Via NOAO Science Archive.....	17
NOAO Survey Proposal Deadline Postponed by Six Months.....	18
2007A Time Allocation Committee Members.....	18
2007A Instrument Request Statistic by Telescope Standard Proposals.....	19



Cerro Tololo Inter-American Observatory

CTIO Partnerships: Present and Future.....	22
Simon Schuler - New Goldberg Fellow at CTIO	23



Kitt Peak National Observatory

Exoplanet Tracker at the 2.1-meter Telescope	24
NEWFIRM Progresses on Technical and Scientific Planning Fronts	24
QUOTA Sees First Light!.....	25
Diving on Kitt Peak.....	27
Observer Support Update.....	27
Kitt Peak Energy Cost Saving Efforts.....	28



National Solar Observatory

From the Director's Office.....	29
SOLIS	31
ATST Science Team Meets on Maui.....	32
ATST - Refinement of Enclosure Design	33
Summer in Tucson from an REU Perspective	34
International Research Experience for (Graduate) Students (IRES).....	35
GONG ⁺⁺	36



Public Affairs and Educational Outreach

Creative Thinking Saves Teacher-Student Observing at Kitt Peak.....	38
Visit to Santa Rosa	38
Mercury Transit Webcast and Science Observations.....	39
My Kitt Peak REU 2006 Experience.....	39
Students Needed for 2007 REU Program at Kitt Peak	40

>>>NOAO/NSO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY/NATIONAL SOLAR OBSERVATORY

ISSUE 89 – MARCH 2007

Science Highlights

The Evershed Flow: From the Chromosphere to the Photosphere.....	3
High Spectral Resolution in the Mid-IR with TEXES on Gemini	4

Director's Office

Implementing the Senior Review Recommendations – a Progress Report	5
Users Committee Report Available	5
Report from the Third System Workshop	6

NOAO Gemini Science Center

Gemini Observing Opportunities for Semester 2007B ...	7
Avoid Fear and Loathing in January: Prepare your Gemini Phase II Plan at the AAS Meeting	8
GEMINI SCIENCE 2007.....	9
NGSC Instrumentation Program Update	10
NGSC Booth at the 2007 AAS Meeting in Seattle.....	11

Observational Programs

2007B Observing Proposals Due 2 April 2007	12
Community Access Time Available in 2007B with Keck, HET, Magellan, and MMT	13
Observing Request Statistics for 2007A Standard Proposals.....	14
CTIO Instruments Available for 2007B.....	15
Gemini Instruments Expected to be Available for 2007B.....	16
KPNO Instruments Available for 2007B.....	17
HET Instruments Available for 2007B.....	18
MMT Instruments Available for 2007B.....	18
Magellan Instruments Available for 2007B	18
Keck Instruments Available for 2007B	18

Data Products Programs

The NOAO Data Products Program (DPP)	19
NOAO DPP at ADASS XVI	20
Developing the NOAO End-to-End Data Management System.....	21

Cerro Tololo Inter-American Observatory

SOAR Science Operations Ramping Up.....	22
Knut Olsen & Dara Norman Move to NOAO North....	22

Kitt Peak National Observatory

NEWFIRM Achieves First Light!	23
New Senior Electrical Engineer Joins Kitt Peak National Observatory	24
FLAMINGOS Imaging Update.....	25

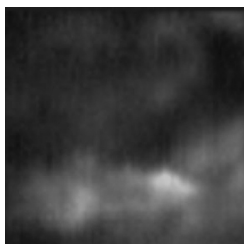
National Solar Observatory

From the NSO Director's Office	26
ATST Passes Preliminary Design Review	27
First Spectra from the NSO Array Camera 1000-2000 nm Polarimeter	29
GONG ⁺⁺	29

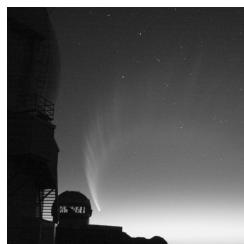
Public Affairs and Educational Outreach

NOAO Brings Family ASTRO Back to South America	32
Tucson Teacher Connects Students with the National Observatory	33
Calling Dr. Frankenstein! Interactive Binaries Show Signs of Induced Hyperactivity.....	34
The 2007 REU/PIA Program at CTIO.....	35
The Intersection of Arts & Sciences	36

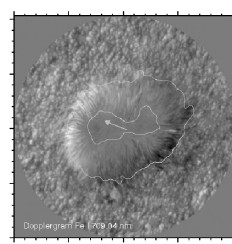
inside...



High Spectral Resolution in the Mid-IR with TEXES (Page 4)



SOAR Science Observations Ramping Up (Page 22)



The Evershed Flow: From The Chromosphere to the Photosphere (Page 3)

>>> NOAO/NSO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY/NATIONAL SOLAR OBSERVATORY

ISSUE 90 – JUNE 2007

Science Highlights

- Wide-Field Survey Reveals the Variable Sky 3
- A New Component of the Solar Magnetic Field 5
- The Solar Oxygen Crisis 6
- Disturbing News in the Large Magellanic Cloud 7

Director's Office

- Implementing the Senior Review Recommendations—the Renewal Proposal Takes Shape 9
- Renewing Small Telescopes for Astronomical Research (ReSTAR) Seeks Community Input 9
- GSMT Program Office News - Evolution of the Science Working Group 10
- A Tribute to Jeremy Mould 11
- Users Committee Seeks Input 11
- AURA Turns 50 12
- Stephen Strom Retires From NOAO 12

NOAO Gemini Science Center

- Recent Spectroscopic Highlights from Gemini 13
- A Direct Distance to M33 13
- GNIRS Infrared Spectroscopy and the Origins of the Peculiar Hydrogen Deficient Stars 14
- The Gemini-Subaru Time Exchange Program 15
- Technical Reviews of US Gemini Observing Proposals 15
- Phoenix Leaves Gemini South 16
- Altair and the Laser Guide Star System 16
- NGSC Instrumentation Program Update 17

Observational Programs

- 2007B TAC Members 18
- NOAO Survey Program Call for Proposals—Letters of Intent Due July 31 18
- 2007B Proposal Process Update 18
- 2007B Instrument Request Statistics by Telescope ... 19

Data Products Programs

- The NOAO Science Archive: Public Access to zBoötes and FSVS 21
- The NOAO High-Performance Pipeline 21

Cerro Tololo Inter-American Observatory

- The Renewal of CTIO 23
- Dark Energy Camera Project Achieves Important Milestone 24
- A Request for Input on the Dark Energy Camera Community Filters 24

Kitt Peak National Observatory

- Getting Ready for the Next 50 Years 26
- Another Instrument Visits the 2.1-meter Telescope at Kitt Peak 27

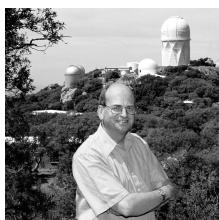
National Solar Observatory

- From the NSO Director's Office 28
- ATST Design Refinements and EIS Milestone 30
- SOLIS "Quick-Look" Vector Magnetic Field Images Now Available 31
- Two-Dimensional Spectropolarimetry with IBIS 32
- Solar Infrared Observations at 12 Microns with CELESTE 33
- GONG++ 33
- International Solar Workshop Probes Beyond "Skin Deep" 35

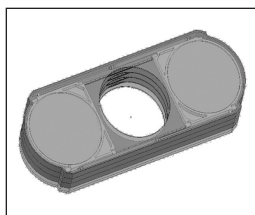
Public Affairs and Educational Outreach

- Research Experiences for Undergraduates & Práctica de Investigación Programs 2007 36
- Outreach Activities With the Tohono O'odham 37
- NOAO Takes On Leadership Roles for the International Year of Astronomy 2009 38
- Galaxy Image Shows Value of Dark Skies 39

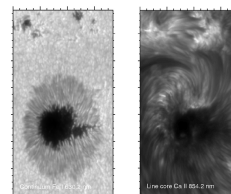
inside...



A Tribute to
Jeremy Mould
(Page 11)



A Request for
Input on the
DECam Commu-
nity Filters
(Page 24)



Two-Dimensional
Spectropolarim-
etry with IBIS
(Page 32)

>>>NOAO/NSO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY/NATIONAL SOLAR OBSERVATORY

ISSUE 91 – SEPTEMBER 2007

Science Highlights

The Role of NOAO in the Discovery of the Accelerating Universe	3
Latitude Distribution of Polar Magnetic Flux	4
Cosmology Revealed by WIYN Imaging	5

Director's Office

The Time Domain – A Bigger Change Than You Think.....	6
Update on ReSTAR	6
Announcement of Opportunity for Participation in Large Synoptic Survey Telescope Science Collaborations	7
Workshop on Ground-Based Optical Interferometry	9
GSMT Program Office News Jay Elias & Steve Strom.....	10

NOAO Gemini Science Center

Gemini Observing Opportunities for Semester 2008A.....	11
Altair and the Laser Guide Star System at Gemini North	12
Gemini Observing Overhead Revisions	14
Designing GMOS Masks Without Pre-Imaging	15
The Gemini Science 2007 Meeting at Iguazu	15
The Loss of GNIRS and the Special Call for Proposals for 2007B	16
NGSC Instrumentation Program Update	17
Frenetic Growth of Supermassive Black Holes in the Early Universe	17

Observational Programs

Updates on the Availability of NEWFIRM, WHIRC, and ET.....	18
Standard Observing Proposals Due 1 October 2007 - Survey Proposals Due 17 September 2007 ..	19
Community Access Time Available in 2008A with Keck, HET, Magellan, and MMT	20
NOAO-GLAST Collaborative Science Agreement.....	20
Observing Request Statistics for 2007B Standard Proposals.....	21
CTIO Instruments Available for 2008A	22
KPNO Instruments Available for 2008A	23

Gemini Instruments Expected to be Available for 2008A	24
HET Instruments Available for 2008A	25
MMT Instruments Available for 2008A	25
Magellan Instruments Available for 2008A.....	25
Keck Instruments Available for 2008A.....	25

Data Products Program

Workshop Report: Hot-Wiring the Transient Universe	26
Accessing the Virtual Observatory from Within Your Favorite Programming Environment	27
IRAF 2.14	28

Cerro Tololo Inter-American Observatory

Community Requirements for the Dark Energy Camera	29
SOAR Completes Second Semester of Science Operations	30

Kitt Peak National Observatory

Kitt Peak National Observatory Successfully Meets Challenge of Alambre Wildfire	31
KPNO Staff Changes	34
IRMOS Status	34

National Solar Observatory

From the Director's Office.....	35
ATST	36
SOLIS	38
Mapping Sodium Absorption in the Mercury Exosphere During the 2006 Transit	39
2007 Summer School in Solar Physics	40
GONG++	41

Public Affairs and Educational Outreach

Kitt Peak Remains A Valued Public "Wonder"	43
KPNO Hosts Tohono O'odham Boys & Girls Club Horse Camp	44
Six Students Needed for REU at CTIO	45
Posters for CADIAS	46
Big Summer Shutdown for WIYN	47

>>> NOAO/NSO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY/NATIONAL SOLAR OBSERVATORY

ISSUE 92 – DECEMBER 2007

Science Highlights

A 15.65 Solar-Mass Black Hole in an Eclipsing Binary in M33	3
Observations of Mercury's Sodium Tail	4
Mesospheric Winds on Venus from High Spectral Resolution Observations of CO ₂	5

Director's Office

The New NOAO Program: A Synopsis of Our Cooperative Agreement Renewal Proposal	7
Instrumentation for the System	8
The GSMT Program Office – The Next Five Years and Beyond	9

NOAO Gemini Science Center

The Next Five Years at Gemini: Opportunities for the US Community	10
NGSC Works For You!	11
Visit NGSC at the January 2008 AAS Meeting	12
The Gemini Phase One Tool – PIT	13
The Updated Gemini Web Pages	14
Changes to Classical Mode Observations at Gemini ...	14
NGSC Instrumentation Program Update	15

Observational Programs

2008A Proposal Process Update	16
2008A Time Allocation Committee Members	16
2008A Instrument Request Statistics by	17
Telescope Standard Proposals	17

Data Products Program

NOAO DPP at ADASS XVII and the IVOA Meetings ...	20
IRAF V2.14 and Ximtool Releases	21
IRAF and UNIX Tools for the VO	22
NOAO Helps Bring the Night Sky to Google Earth	23

DPP Releases a New FITS Library for Ruby	23
Data Management & Science Support for the System	24

Cerro Tololo Inter-American Observatory

CTIO – Modernization and New Capabilities Ahead ..	25
CTIO Observing Modes	27
Laser Guide Star System for SAM Passes PDR	28
Five Years of ISPI	28

Kitt Peak National Observatory

Getting Ready for the Next 50 Years – Part 2	30
WHIRC at Work on WIYN	31
The KPNO Site Monitoring Suite	32
Elizabeth Alvarez del Castillo and John Glaspey Rejoin NOAO	32

National Solar Observatory

From the Director's Office	33
ATST to Use Venerable Observatory as Testbed; Software Systems Advance	34
SOLIS	35
Using the Near-Infrared to Study Sunspot Umbral Dynamics	37
NSO Observing Proposal Submission Deadlines	37
GONG++	38

Public Affairs and Educational Outreach

NOAO and the Tohono O'odham Nation "Reach for the Stars" Together	40
GLOBE at Night: Plans for 2008 and Look Ahead to IYA 2009	41
Students Needed for the 2008 REU Program at Kitt Peak	43

>>> NOAO/NSO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY/NATIONAL SOLAR OBSERVATORY

ISSUE 93 – MARCH 2008

Science Highlights

The Solar Neighborhood: Habitable Real Estate around Nearby Stars	3
Lyman-Alpha Emitting Galaxies at $z = 3.1$: Progenitors of Present-Day L^* Galaxies	4
Observation of Alfvén Waves in the Solar Corona	6

Director's Office

ReSTAR—An Exercise in Defining Community Needs	9
NOAO's New Program: The Process	10
The New NOAO e-Newsletter: <i>Currents</i>	10

NOAO Gemini Science Center

Gemini Observing Opportunities for Semester 2008B	11
An Update on the Status of the UK within the Gemini Partnership and a Look to the Future	12
The Gemini-Subaru Time Exchange Program: Additional Observing Opportunities for the Gemini User Community	13
Classical Observing Available with Gemini Observatory	13
NGSC at the January 2008 AAS Meeting in Austin	14
The Updated NGSC Web Site	15
NGSC Instrumentation Program Update	16

Observational Programs

2008B Observing Proposals Due 31 March 2008	17
Community Access Time Available in 2008B with Keck, Magellan, and MMT	18
Two New NOAO Survey Programs	18
Observing Request Statistics for 2008A Standard Proposals	19
CTIO Instruments Available for 2008B	20
Gemini Instruments Expected to be Available for 2008B	21
KPNO Instruments Available for 2008B	22
MMT Instruments Available for 2008B	23
Magellan Instruments Available for 2008B	23
Keck Instruments Available for 2008B	23

Data Products Program

LEGO Robotic Telescopes at the January 2008 AAS Meeting	24
The Fourth National Virtual Observatory Summer School	25

Cerro Tololo Inter-American Observatory

Goodman Spectrograph Commissioning at SOAR	26
DES/DECam Status Report	27

Kitt Peak National Observatory

The Ongoing Renewal of KPNO	28
Gary Muller Wins Design Contest Grand Prize—Again! ..	29
KPNO Staff Changes	30
New Study Scopes Out Annual Impact of Astronomy and Space Sciences on Arizona	30

National Solar Observatory

From the Director's Office	31
Protecting ATST from the Sun	32
SOLIS	33
GONG++	34
Third Quarter Deadline for NSO Observing Proposals ..	36

Public Affairs and Educational Outreach

Promoting Inquiry in Science Education: Project PRISE in Piñon	37
An Informal Visit to CADIAS	38
Spitzer-NOAO Research Program for Teachers Makes News at AAS	39
REU 2008 Begins at CTIO	40

>>> NOAO/NSO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY/NATIONAL SOLAR OBSERVATORY

ISSUE 94 – JUNE 2008

Science Highlights

The Tilted Solar Magnetic Dipole	3
Watching the Production of Elements in Evolved Stars	5
The Magellanic Bridge: Tidal Debris in our Backyard	6
The NEWFIRM Medium-Band Survey	8

Director's Office

So long...and thanks for all the fish	10
The NOAO Road Show	11
Announcing ALTAIR.....	11

NOAO Gemini Science Center

Classical Observing with Gemini.....	12
The UK Status within the Gemini Partnership: Resolved through 2012.....	12
The US Community and Their Gemini Usage: Some Results from the NGSC Questionnaire at the January 2008 AAS Meeting	13
Detailed Aspects of Technical Reviews for GMOS, NIRI, and NIFS	16
NGSC Instrumentation Program Update	17
Does Methane Rain Down on Titan?.....	18

Observational Programs

2008B TAC Members	19
2008B Proposal Process Update	19
NOAO Survey Program	19
Letters of Intent due July 31	19
2008B Instrument Request Statistics by Telescope	20

Data Products Program

The Growing NOAO Science Archive.....	22
Accessing Astronomical Data via NOAO.....	23

Cerro Tololo Inter-American Observatory

US Ambassador Visits NOAO South	24
The April 2008 Dark Energy Survey Collaboration Meeting	25
CTIO Staff Changes	25

Kitt Peak National Observatory

Celebrating Our National Observatory.....	26
NEWFIRM in 2008A: (Nearly) All Science, All the Time	26
WHIRC Work Continues at WIYN	28
WHAM Departs Kitt Peak.....	29
WIYN Bench Spectrograph Upgrade	29

National Solar Observatory

Director's Corner	30
New High-Resolution Quiet-Sun Images at 4667 nm	31
SOLIS	31
GONG++	33
Fourth Quarter Deadline for NSO Observing Proposals	35

Public Affairs and Educational Outreach

GLOBE at Night 2008 and Earth Hour Results a Solid Step Toward IYA 2009.....	36
A GLOBE at Night 2008 Campaign Around Cerro Tololo	37
New Exhibit on Telescope Mirror Technology	38
High Fire for LSST	39

>>> NOAO/NSO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY/NATIONAL SOLAR OBSERVATORY

ISSUE 95 – SEPTEMBER 2008

Science Highlights

Echoes of Galactic Supernovae.....	3
Observations of a Small Emergent Bipolar Flux Region.....	5
Carbon-enhanced Metal-poor Stars and the	
Chemical Evolution of the Early Galaxy.....	6
Do Solar Subsurface Vorticity Measurements	
Improve Flare Forecasting?.....	7

Director's Office

First Thoughts and Early Priorities.....	9
The GSMT Chicago Workshop – First Steps Toward	
a National Design Reference Mission.....	10
LSST Mirror Unveiled.....	11
ALTAIR Committee and Survey.....	11
Building the ReSTAR System.....	12

NOAO Gemini Science Center

Gemini Classical and Queue Observing Opportunities	
for Semester 2009A.....	13
Suitable 2009A Gemini Queue Programs	
May Be Offered Classical Time.....	14
The Personal Contact Option for the	
Gemini HelpDesk.....	15
The Joint Subaru/Gemini Conference “Cosmology	
Near and Far: Science with WFMOS”.....	15
The Gemini/Subaru Wide-field Fiber Multi-Object	
Spectrograph (WFMOS): An Update.....	16
Kyoto Joint Subaru/Gemini Science Conference	
in May 2009.....	16
Report of a Classical Gemini-Subaru Exchange	
Program Observing Run.....	17
Detailed Aspects of Technical Reviews for	
T-ReCS and Michelle.....	18
Gemini News from the Marseille SPIE Meeting.....	18
NGSC Instrumentation Program Update.....	20

Observational Programs

2009A Observing Proposals Due 30 September 2008;	
Survey Proposals Due 15 September 2008.....	21
Community Access Time Available in 2009A	
with Keck, Magellan, and MMT.....	22
Observing Request Statistics for 2008B	
Standard Proposals.....	22
CTIO Instruments Available for 2009A.....	23
Instruments Expected to be Available for 2009A.....	24
KPNO Instruments Available for 2009A.....	25
MMT Instruments Available for 2009A.....	26
Magellan Instruments Available for 2009A.....	26
Keck Instruments Available for 2009A.....	26

Data Products Program

Single Sign-on and the Virtual Observatory as	
an Operational Facility.....	27
The All-Sky Camera Project.....	27
Upcoming Data Products Program Meetings	
and Events.....	29

Cerro Tololo Inter-American Observatory

Fiber Echelle Spectrograph Finds New Life	
as Exoplanet Hunter.....	30
Progress on the SOAR Adaptive Module.....	31
Blanco TCS Upgrade.....	32
Chile Staff Changes.....	32

Kitt Peak National Observatory

The Meinel Partnership and the Founding of the	
National Observatory.....	33
Pierre Martin Succeeds George Jacoby as	
Director of the WIYN Observatory.....	34
Commissioning Work on WHIRC Proceeding Well.....	35
Update on KPNO Modernization Projects	
and Operations.....	36

National Solar Observatory

Director's Corner.....	37
ATST.....	38
First Quarter Deadline for NSO Observing Proposals.....	38
SOLIS.....	39
First Lock for McMath-Pierce Planetary Adaptive	
Optics System.....	41
GONG++.....	42
International Research Experience	
for (Graduate) Students (IRES).....	44

Public Affairs and Educational Outreach

US IYA 2009 Momentum Grows with House Resolution,	
Prototype of Image Exhibition.....	45
Another Successful Horse Camp on Kitt Peak;	
KOHNSHOW Debuts.....	45
CADIAS Participates in Show of Integrated Arts	
in Argentina.....	46
A Research Adventure for Tucson Educators.....	47

>>>NOAO/NSO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY/NATIONAL SOLAR OBSERVATORY

ISSUE 96 – DECEMBER 2008

Science Highlights

NOAO Survey Program	3
Properties of the Host Galaxies of Luminous Quasars ...	6
An Innovative Search for Elusive Ly α Blobs	8

Director's Office

Strategy, Tactics, and Budgetary Results	10
Bob Blum Appointed Interim NOAO Deputy Director	11
Observatoire de Paris Honors Stephen Ridgway	11

NOAO Gemini Science Center

A Brief Overview of the Governance Structures of NOAO and the International Gemini Observatory ...	12
Don't Miss NGSC at the 2009 AAS Meeting	13
Community Input to the Gemini Long Range Plan	14
Joint Gemini-Subaru Science Meeting in May 2009 ...	15
Report on Classical Observing at Gemini South	15
An Update on GNIRS	16
NICI-AO Imaging Capability at Gemini South.....	16
NGSC Instrumentation Program Update	17

Observational Programs

2009A Proposal Process Update	18
2009A Time Allocation Committee Members	18
2009A Instrument Request Statistics by Telescope	19

Data Products Program

Large-Scale Surveys of Nearby Molecular Clouds with NEWFIRM Assisted by Quick-Reduce Pipeline ...	21
Who Are the Users of the NOAO Archive?.....	22
NOAO Staff at the NVO Summer School 2008: Faculty, Students, and Award Winners	23

Cerro Tololo Inter-American Observatory

Thanks to Alistair Walker for Multiple Contributions as CTIO Director.....	24
Spartan Infrared Camera Arrives at SOAR	25
Integration & Testing of the SOAR Adaptive Module Proceeds Well	26
Goodman Spectrograph Update.....	27

Kitt Peak National Observatory

Surveying the WIM with WHAM.....	28
QUOTA-A Prototype Camera for the WIYN One-Degree Imager	30
WIYN Bench Upgrade-New VPH Grating and All-Refractive Collimator.....	34
With Deepest Thanks for Many Years of Service to Our Observatory	35
Share Your Memories of the First 50 Years of KPNO ..	36

National Solar Observatory

Director's Corner	37
ATST Update	38
SOLIS	40
GONG++	41
First and Second Quarter Deadlines for NSO Observing Proposals	43
International Research Experience for (Graduate) Students (IRES)	43
Stratospheric Ozone: No Trends Detected over Kitt Peak 1993-2008	43

Public Affairs & Educational Outreach

AURA Observatories in Chile: Friend of the Teletón ...	44
Students Needed for the 2009 REU Program at Kitt Peak	45
Observatory Open House Welcomes Members of the Tohono O'odham Nation	46
Dragon*Con 2008 Attendees Get Excited about IYA2009	47

>>> NOAO/NSO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY/NATIONAL SOLAR OBSERVATORY

ISSUE 97 – MARCH 2009

Science Highlights

Introduction	3
Stellar Ages from Stellar Rotation	3
Luminous Transients in Nearby Galaxies	5
Chemical Abundances in the Tidally Disrupted	7
Globular Cluster NGC 6712	7
The Planetary Nebula View of M33: A Deep Spectroscopic Study with Hectospec	9
A Candidate Sub-Parsec Supermassive Binary Black Hole System	11

Director's Office

Looking to the Future	12
Budget Update	12
New Look for NOAO Home Page	13

NOAO Gemini Science Center

Classical and Queue Observing Opportunities with the Gemini Telescopes for Semester 2009B	14
Understanding Observing Constraints at Gemini	15
Classical Observing at Cerro Pachón	17
NICI-AO Imaging Capability at Gemini South	17
Helpful Hint: Gemini HelpDesk	17
Joint Subaru/Gemini Science Conference in May 2009	18
NGSC Instrumentation Program Update	18

Observational Programs

2009B Observing Proposals Due 31 March 2009	19
Community Access Time Available in 2009B with Keck, Magellan, and MMT	20
A New NOAO Survey Program	20
Evolution of the NOAO Time Allocation Process (Everything You Always Wanted to Know about the TAC)	21
Observing Request Statistics for 2009A Standard Proposals	24
CTIO Instruments Available for 2009B	25
Gemini Instruments Expected to Be Available for 2009B	26
KPNO Instruments Available for 2009B	27
Keck Instruments Available for 2009B	28
MMT Instruments Available for 2009B	28
Magellan Instruments Available for 2009B	28

Science Data Management

Changes to the Data Products Program	29
Hot-wiring the Transient Universe	29

Cerro Tololo Inter-American Observatory

Filling out the SOAR Instrument Complement	30
Spartan Commissioning	31
The 2009 CTIO REU/PIA Program	31
First Integration, Alignment & Testing of Complete SOAR Adaptive Module	32

Kitt Peak National Observatory

WIYN's One Degree Imager: About a Year to the Start of Commissioning	33
What are Orthogonal Transfer CCDs Good for Anyway?	36
The Birth of Our National Observatory	37

National Solar Observatory

Director's Corner	38
ATST Update	39
SOLIS	39
GONG++	41
Estimation of O I Line Formation Heights from Perspective Shift Measurements	43
An Integral Field Unit for the McMath-Pierce Solar Telescope	44
Second Quarter Deadline for NSO Observing Proposals	44
The Sunspot Solar System Model	45

Education & Public Outreach

International Year of Astronomy Commences	46
GLOBE at Night: Dark Skies for Everyone	47
Astronomy Camp Is Coming to Kitt Peak	48

Publication Notes

See the color versions of images presented in this Newsletter online at www.noao.edu/noao/noaonews/html.

>>> NOAO/NSO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY/NATIONAL SOLAR OBSERVATORY

ISSUE 98 – JUNE 2009

Science Highlights

Probing the Gas in Protoplanetary Disks with TEXES on Gemini-N.....	3
NOAO 4-m Speckle Interferometry Observations of Massive Stars.....	4
Comparing Magnetic Fields in the Solar Photosphere and Chromosphere at Equatorial and Polar Latitudes	6

Director's Office

Director's News.....	8
Community Access to Ground-Based Optical Interferometer Arrays.....	9

NOAO Gemini Science Center

Report on a Classical Observing Run	10
Visiting Gemini North: Graduate Students' Perspectives... ..	12
US Community Usage of the Gemini Telescopes from 2004B to 2009A and a Look to the Future.....	13
Band 3 Helpful Hint.....	15
Gemini's Poor Weather Queue	15
AAS Meeting in Long Beach, January 2009	16
NGSC Instrumentation Program Update	17

Observational Programs

2009B Proposal Update.....	18
NOAO Survey Program Letters of Intent Due July 31.....	18
"What's Happening to My Proposal?" (An Overview of the NOAO Scheduling Process).....	19
2009B Time Allocation Committee Members.....	19
2009B Instrument Request Statistics by Telescope Standard Proposals.....	20

Science Data Management

The Science Data Management Program	22
The New NOAO Archive.....	23
NEWFIRM Reduced Data Sets Are Now Available.....	23
The NEWFIRM Guide to Data Reduction Is Now Available	24
NOAO Data Handbook Updated	24

Cerro Tololo Inter-American Observatory

Speckle Interferometry at SOAR	25
Final Integration & Testing of the SOAR Adaptive Module (SAM) Preparing for Commissioning in NGS Mode.....	26
WHAM Installed on Cerro Tololo.....	26

Kitt Peak National Observatory

50 Years Serving the Astronomy Community.....	27
The NOAO 16-Inch Telescopes	28
Frank Kelley Edmondson 1 August 1912–8 December 2008	30
42 Years of Service to KPNO	31
New Faces at KPNO	32
The Maryland-NOAO Instrument Partnership (2003–2009).....	32
WHIRC Update.....	34

National Solar Observatory

Director's Corner	35
ATST Optical Design Enhanced	37
SOLIS/VSM Inverted Vector Magnetic Field Data Now Available	37
The Global Oscillation Network Group (GONG).....	39
Fourth Quarter Deadline for NSO Observing Proposals.....	40
In Memoriam of Clifford G. Toner 8 December 1959–29 March 2009	41

Education & Public Outreach

Schuk Toak District Day	42
Galileoscopes Are in Production!	43
GLOBE at Night Reaches a Record Number of Dark-Skies Observations.....	44
KPNO REU Students Going to Graduate School	44
Technology Skills for Arizona Teachers: The AstroBITS Program.....	45

>>>NOAO/NSO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY/NATIONAL SOLAR OBSERVATORY

ISSUE 99 – SEPTEMBER 2009

Science Highlights

Solar Polar Vortex?	3
NEWFIRM Discovery of Warm Molecular Hydrogen in the Wind of M82	4
¹² C Is Missing from the Hyades Open Cluster	6

Director's Office

Director's News	8
Infrastructure Renewal at NOAO and the American Recovery and Reinvestment Act	9
ReSTAR Brings US Community Access to Palomar 200-inch and New Optical Spectrograph	9

NOAO Gemini Science Center

Classical and Queue Observing Opportunities with the Gemini Telescopes for Semester 2010A.....	12
NICI: Open for Business	13
May 2009 Gemini Board Meeting and Its Impact on WF MOS and the Aspen Program	14
Extraordinary NICI Images of Eta Carinae	15
GSA Helpful Hint: Data Packing in Archive.....	16
Kyoto 2009 Joint Subaru/Gemini Science Conference	16
NGSC Instrumentation Program Update	17

Observational Programs

2010A Observing Proposals Due 30 September 2009; Survey Proposals Due 15 September 2009	18
Community Access Time Available in 2010 with the CHARA Optical Interferometer Array.....	19
Community Access Time Available in 2010A with Magellan, MMT, and Hale.....	19
Observing Request Statistics for 2009B Standard Proposals	20
Gemini Instruments Expected to Be Available for 2010A	21

CTIO Instruments Available for 2010A	22
KPNO Instruments Available for 2010A.....	23
MMT Instruments Available for 2010A	24
Magellan Instruments Available for 2010A	24
Hale Instruments Available for 2010A	24
CHARA Instruments Available for 2010	24

Cerro Tololo Inter-American Observatory

Blanco Shutdown 2009	25
SAM: The Push to First Light.....	26
Spartan Infrared Camera Commissioning Update.....	26
Farewell & Welcome—Staff Changes at CTIO.....	26
Students Wanted for 2010 CTIO REU Program.....	27

Kitt Peak National Observatory

San Juan Fire Successfully Suppressed A Thank You to Those Who Protected Our Facilities ...	28
Two Science Symposia in March 2010 to Help Celebrate 50th Anniversary of Our National Observatory	29
NEWFIRM: Looking Back, Looking Forward	30
Site Protection.....	30
Tohono O'odham Horse Camp on Kitt Peak.....	31

National Solar Observatory

Director's Corner	32
ATST Passes Final Design Review.....	34
SOLIS/VSM.....	34
GONG ++	36
First Quarter Deadline for NSO Observing Proposals	38
A ROSA View of the Sun	39
In Memoriam of John A. Eddy 25 March 1931 – 10 June 2009.....	40

Education & Public Outreach

Astronomy Camps 2009 on Kitt Peak	41
---	----



NOAO/NSO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY/NATIONAL SOLAR OBSERVATORY

ISSUE 100 – JANUARY 2010

50 Years of the National Observatory

Remembrances and Visions of the NOAO Director	3
The National Observatory—50 Years of Science	7
The Evolution of Digital Data at NOAO	12
IRAF—More than Just a Four Letter Word	15
Kitt Peak National Observatory—The Early Years	17
History of the NSO Facilities on Kitt Peak	20
Aerial Surveillance of Kitt Peak	24
A Thankful Observatory	27
Education and Public Outreach at the National Observatories	28
Education and Outreach at Cerro Tololo	34
A Very Brief Early History of the Cerro Tololo Inter-American Observatory	36
The Beginnings of Gemini	38
Development of the US Scientific Hopes for Gemini	39
Gemini—The Construction Phase	40
A Short (and Slightly Irreverent) History of the NOAO Newsletter	42
50th Anniversary Science Symposia in 2010	43
Faces of Former and Current Employees at November Reunion	44

NOAO System Science Center

The NOAO System Science Center	46
NOAO at the 2010 Washington AAS Meeting	46
FLAMINGOS-2 Achieves First Light	47
NOAO Science Support of the Large Synoptic Survey Telescope	48

National Solar Observatory

ATST Awaits Final Decision	49
GONG H-alpha System Passes Prototype Design Review	49
Second Quarter 2010 Proposal Deadline	49
2010 International Research Experiences for Students (IRES) Program in India	49
SOLIS/VSM	50

Education & Public Outreach

Students Needed for the 2010 REU Program at Kitt Peak	52
---	----



NOAO/NSO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY/NATIONAL SOLAR OBSERVATORY

ISSUE 101 – MARCH 2010

Science Highlights

Kitt Peak Observations Provide Solid Ground for Kepler	2
Early Results from the NEWFIRM Medium-Band Survey	3
The NOAO Outer Limits Survey: Stellar Populations in the Extremities of the Magellanic Clouds	4
Evidence that Temporal Changes in Solar Subsurface Helicity Precede Active Region Flaring	6
McMath-Pierce Observations of the Lunar Impact Plume from the LCROSS Mission	8

System Science Capabilities

Creating a Roadmap for the Ground-Based O/IR System.....	10
Dark Energy Camera Update	10
NSF Funds Improved Instruments for the Mayall Telescope	11
Kitt Peak Mosaic Upgrade— an Imager for a New Decade of Science	12
KOSMOS—a New Spectroscopic Capability for the Mayall.....	13
Upgrades of the CTIO 1.5-M Telescope Fiber Echelle	13
Developing a SOAR Laser Guide Star System —an Update on the SAM Project	14
SIFS—the SOAR Integral Field Spectrograph	15
SMARTS Update: Small Telescopes Going Strong!	15
Future Observational Capabilities and Instruments for Gemini: Viewpoints from the US and Partner User Communities	16
The November 2009 Gemini Board Meeting and the Status of the UK in the Gemini Partnership	17

System Observing: Telescopes & Instruments

2010B Observing Proposals Due 31 March 2010.....	18
2010A TAC Results Available Online.....	18
System-Wide Observing Opportunities for Semester 2010B: Gemini, Keck, Magellan, MMT, and Hale	19
WIYN and Mayall Telescope Proposers: Take Note.....	20
KPNO Instruments Available for 2010B.....	21

CTIO Instruments Available for 2010B	22
Gemini Instruments Expected to be Available for 2010B	23
Keck Instruments Available for 2010B	24
MMT Instruments Available for 2010B.....	24
Magellan Instruments Available for 2010B.....	24
Hale Instruments Available for 2010B	24
New NOAO Survey Programs Selected	25
Third Quarter 2010 NSO Proposal Deadline.....	25

NOAO Operations & Staff

Director's News	26
Ongoing Celebrations of Our 50th Anniversary	27
A Survey of the NOAO Survey Program	28
Change Planned to FITS Format in the NOAO Archive.....	28
What Is FITS Tile Compression?	29
KPNO Projects Funded by the American Reinvestment and Recovery Act of 2009.....	29
CTIO Summer Student Programs for 2010.....	30
NOAO at the 2010 Winter AAS Meeting	31
First Fire, Now Snow and Ice	32
Las Cumbres Observatory Global Telescope Network Work Begins at Cerro Tololo	33
A Classical Observing Run Photo Journal from Gemini North	33
New KPNO Observing Assistant	34
High Demand for NEWFIRM at the Blanco 4-Meter Telescope in 2010A!	34
Former Kitt Peak Director Geoff Burbidge Passes Away	34

NSO Happenings

Director's Corner.....	35
Advanced Technology Solar Telescope (ATST) Is "Go".....	36
SOLIS/VSM Update	36
The Global Oscillation Network Group (GONG++)	38
Old Wisdom and New Insight	40

NOAO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY

ISSUE 102 — SEPTEMBER 2010

Science Highlights

The NOAO/XMM Cluster Survey.....	2
Amateur, NOAO, HST, and Chandra Observers Team Up to Search for Supernova Progenitor.....	4
A Path to Understanding Stellar Multiplicity	6

System Science Capabilities

ReSTAR—Phase 1	8
Mosaic 1.1—Bringing Better Imaging to Kitt Peak.....	9
ReSTAR—Looking Forward	10
Dark Energy Camera Filters	11
Mosaic II Imager Retirement.....	11
The Laser for SAM—Integration Has Started in the Lab.....	12
NOAO-Gemini Data Workshop	12
IRAF V2.15 Release Plans.....	14

System Observing: Telescopes & Instruments

2011A Observing Proposals Due September 30; Survey Proposals Due September 15	15
Proposal Form Changes for 2011A.....	15
System-Wide Observing Opportunities for Semester 2011A: Gemini, Keck, Magellan, MMT, and Hale	16
Important Notices about CTIO Telescopes/Instruments	17
KPNO Instruments Available for 2011A.....	18
CTIO Instruments Available for 2011A	19
Gemini Instruments Available for 2011A	20
Keck Instruments Available for 2011A	21
MMT Instruments Available for 2011A.....	21
Magellan Instruments Available for 2011A.....	21
Hale Instruments Available for 2011A.....	22
CHARA Instruments Available for 2011.....	22

Community-Access Time Available in 2011 with CHARA	22
TripleSpec at the Hale Telescope	22
NEWFIRM Moves to the Blanco Telescope	23
The Upgraded WIYN Bench Spectrograph.....	24
KPNO 4-m and 2.1-m Control Room Improvements.....	25
Reminder to Mosaic and NEWFIRM Principal Investigators.....	25
Access Your Data with the New NOAO Science Archive Interface	26
Changes Improve Observer Support at KPNO	27
Sky Brightness Measurements at KPNO	27

NOAO Operations & Staff

Thanks to Buell Jannuzi	28
Abi Saha Appointed KPNO Interim Director	28
Kitt Peak Director Search Underway.....	29
NOAO 50th Anniversary Celebration Presentations Now Available Online	29
The Clemson-NOAO Operations Partnership (2006–2009)	30
NSSC and the 2011 Seattle AAS Meeting.....	32
NOAO Goldberg Fellowship— Who Will Be the Next Goldberg Fellow?.....	32
Astronomy Week at the Sells Rec Center.....	33
Banners Flying from the NOAO Optics Tower	34
Advanced Astronomy Campers Converge for a Week of Research at KPNO	36
Telescope Fund for Kitt Peak Visitor Center	38
Herman Ramon Retires after 40 Years with KPNO	38
Cheryl Marks Joins Kitt Peak Support Office.....	39
New Scientific Staff Coming to CTIO	39
Staff Changes at NOAO North and South.....	39

NOAO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY

ISSUE 103 – MARCH 2011

Science Highlights

Finding Galaxy Clusters in Boötes	2
NEWFIRM and the Carnegie-Spitzer-IMACS Survey	3
The SMARTS Way to Discover Quick Stellar Cycles	6
Ground-Based Observations of the NASA EPOXI Target Comet 103P/Hartley 2	7

System Science Capabilities

From the Director's Office	9
LSST Activities at NOAO—the Excitement Continues	10
NOAO Support for LSST Science	12
Making Sense of an LSST Simulated Schedule.....	13
Early Delivery of LSST Simulation Data Products	14
SAM Update: Working Toward a Laser Guide Star System on SOAR	16
Dark Energy Camera Update	17
BigBOSS: Mapping the Universe with the Mayall	19
ReSTAR Phase 1 Update	20
KOSMOS Updates: COSMOS for CTIO and Other News	22
NOAO Assumes Leadership of ODI Development.....	23
The Decadal Survey's Effect on NOAO and GSMT	23

System Observing: Telescopes & Instruments

2011B NOAO Call for Proposals Due 31 March 2011	24
System-Wide Observing Opportunities for Semester 2011B: Gemini, Keck, MMT, and Hale	25
Moving Forward with Gemini Instrumentation.....	26
CTIO Instruments Available for 2011B	28
Gemini Instruments Available for 2011B	29
KPNO Instruments Available for 2011B.....	30

Keck Instruments Available for 2011B	31
MMT Instruments Available for 2011B.....	31
Hale Instruments Available for 2011B	31
Availability of the CTIO Blanco 4-m Telescope in 2011B and Beyond	32
A New and Improved Mosaic 1.1 Returns to Science Operations... 33	
Infrared Instrumentation Update	34
New NOAO Survey Programs Selected	34
SMARTS News	35

NOAO Operations & Staff

Archiving a Rich Collection of 4-m Telescope Mosaic Images.....	36
Preserving the History of the National Observatory	36
Are you interested in using the Dark Energy Camera?	37
CTIO Summer Student Program for 2011	38
National Observatory's Connection with Tohono O'odham Nation More Visible	38
A Day at the Fair	39
Kitt Peak National Observatory on Facebook	40
ATST Independent Safety Review	40
CTIO Welcomes New Staff Astronomer David James	41
Tilferd Cachora Retires after 37 Years with KPNO	41
Don Hunten: Early Times in Tucson	42
SMARTS Meeting-in-a-Meeting at Upcoming AAS	43
First International Symposium of Science .43 with the SOAR Telescope.....	43
Staff Changes at NOAO North and South	44

NOAO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY

ISSUE 104 – SEPTEMBER 2011

Science Highlights

Finding Hidden Supermassive Black Holes in Distant Galaxies.....	2
Star Formation Rises with Time in UV-Bright Galaxies over the First Two Billion Years.....	4
Gemini/GMOS—Spectroscopy of a Large Sample of Strong Lensing Selected Galaxy Clusters	5
Late-Time Light Curves of Type II Supernovae: Physical Properties of SNe and Their Environment.....	7

System Science Capabilities

NOAO at the Science Frontiers of the 2010 Decadal Survey	10
Dr. Timothy Beers to Become Associate Director for KPNO	11
Phoenix Returning to Kitt Peak.....	12
KOSMOS and COSMOS Updates	12
The WIYN One Degree Imager—an Update.....	14
Launching a Laser & Acquiring a Laser Guide Star: A SAM LGS Mode Update.....	15
A New Infrared Spectrograph for NOAO South	16
Dark Energy Camera Update	17
LSST Science Collaborations at Work.....	18

System Observing: Telescopes & Instruments

2012A NOAO Call for Proposals Due 30 September 2011	19
Update on DECam Installation & Blanco 4-m Availability: Blanco Shutdown in 2012A.....	20
Delayed Call for New NOAO Survey Programs.....	20
Availability of the CTIO 1.0- and 0.9-m Telescopes in 2012A	21
Mayall 4-m Telescope News	21
WIYN 0.9-m Telescope News	21
Community Access Time Available in 2012 with CHARA	22
System-Wide Observing Opportunities for Semester 2012A:	

Gemini, MMT, and Hale	22
CTIO Instruments Available for 2012A	24
Gemini Instruments Available for 2012A*	25
KPNO Instruments Available for 2012A.....	26
MMT Instruments Available for 2012A.....	27
Hale Instruments Available for 2012A	27
CHARA Instruments Available for 2012.....	27
Changes Made to the ORP.....	27
Participating in the SMARTS Consortium	28
After Twelve Years of Mosaic II.....	28

NOAO Operations & Staff

Students Needed for the 2012 REU Program at Kitt Peak	30
Students Wanted for 2012 CTIO REU Program	30
Mayall Standing Strong after Winter Ice Damage	31
American Recovery and Reinvestment Act, an NOAO Update.....	32
Astronomy Night on the National Mall	36
NEWFIRM's Stay in the South	37
Astronomy Camps XXIV.....	38
The 2011 Tohono O'odham Horse Camp	40
45 Years of Observing at Kitt Peak.....	40
Three Decades of Coudé Feed Observing.....	41
Photos from an International Contest that Help You Touch the Sky.....	42
The National User Facility Organization	44
CTIO Welcomes New Scientific Staff Members.....	44
Key Staff Retiring at CTIO: Fond Farewells	45
Bici-Tololo Bike Race.....	46
Staff Changes at NOAO North and South (1 February–15 August)	47

NOAO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY

ISSUE 105 – MARCH 2012

Science Highlights

The Role of NOAO in the Discovery of the Accelerating Universe.....	2	Phoenix Returns to Kitt Peak	19
Seeing Double: Using Gemini to Measure the Prevalence of Dual AGN	3	Instruments Offered at KPNO in 2012B	19
A Nearby Type Ia Supernova.....	4	The Arrival of pODI at the WIYN 3.5-m and Its Impact on 2012B Scheduling	19
Sleeping Giants: Record-Breaking Black Holes Discovered	6	System-Wide Observing Opportunities for Semester 2012B: Gemini, MMT, and Hale	20
Direct Evidence for Helium Variations in Omega Centauri.....	7	CTIO Instruments Available for 2012B	22
The Near-Earth Fly-by of Asteroid 2005 YU55.....	9	Gemini Instruments Available for 2012B	23

System Science Capabilities

Preparing for the Installation of the Dark Energy Camera	11	KPNO Instruments Available for 2012B.....	24
Mock Observing with DECam	12	MMT Instruments Available for 2012B.....	25
BigBOSS Passes DOE Review with Flying Colors.....	13	Hale Instruments Available for 2012B	25
The WIYN One Degree Imager Comes to the Telescope (Soon).....	14	Co-I Access Management and Other New Features in the NOAO Science Archive.....	26
TORRENT Controllers Begin Observatory Service	15		
KOSMOS and COSMOS Updates	16		

System Observing: Telescopes & Instruments

2012B NOAO Call for Proposals Due 29 March 2012	17	NOAO Operations & Staff	
Update on Blanco 4-m Availability: 2012A Shutdown and DECam Commissioning and Science Verification in 2012B	18	Kicking It Up a Notch	27
Availability of the CTIO 1.0- and 0.9-m Telescopes in 2012B	18	Message from the Director of KPNO	28
		NSF Director Subra Suresh's Visit to Cerro Tololo and Cerro Pachón	29
		REU Student Makes PhAst Work	30
		CTIO Summer Student Program for 2012	31
		Staff Changes at NOAO North and South	31



NOAO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY

ISSUE 106 – SEPTEMBER 2012

Director's Corner

Focus on La Serena 2

Science Highlights

Gemini Catches a Disappearing Warm Debris Disk 3
Leo P: A Newly Discovered Local Group Candidate 4
The Yellow Supergiants in the Local Group as a Diagnostic
of the Evolution of Massive Stars 6
Needles in a Haystack: Studying Andromeda Stellar Populations
through Those of the Milky Way 8

System Science Capabilities

LSST Project Reaches a Major Milestone 10
BigBOSS Status Update 10
SAM Improves Angular Resolution over a Wide Field 11
KOSMOS and COSMOS Updates 12
DECam Installation 13
Latest TSIP Proposal Results 15
Telescope System Instrumentation Program 15

System Observing: Telescopes & Instruments

2013A NOAO Call for Proposals Due 27 September 2012 17
System-Wide Observing Opportunities for Semester 2013A:
Gemini, Keck, MMT, CHARA, Subaru, and AAT 18
CTIO Instruments Available for 2013A 20
Gemini Instruments Available for 2013A 21
KPNO Instruments Available for 2013A 22
Keck Instruments Available for 2013A 23
MMT Instruments Available for 2013A 23
AAT Instruments Available for 2013A 23
CHARA Instruments Available for 2013 24
Observing with the CTIO Blanco 4-m Telescope
in 2013A and Beyond 24
Proposing for DECcam in 2013A 24
DECcam Commissioning and Science Verification 25
The DECcam Ultraviolet (u) Filter 25
Observing at WIYN in 2013A 26

Performance of pODI in 2013A: What to Expect 27
Instruments Offered at KPNO in 2013A 28
Infrared Time-Series Observations with Phoenix 29
Availability of the CTIO Small Telescopes in 2013A 29
Community Access to the 3.9-m Anglo-Australian Telescope 30
Community Access Time Available in 2013 with CHARA 30
New VO Capabilities in IRAF v2.16 30
New NOAO Survey Programs Selected 32
What Does System User Support Do for You? 33

NOAO Operations & Staff

NOAO Welcomes Markus Kissler-Patig
as Gemini Observatory Director 34
CTIO through the Good and the Bad 34
Celebrating CTIO's 50th Anniversary 35
Students Wanted for 2013 CTIO REU Program 35
Where Art and Astronomy Meet:
Thoughts on an Artist Residency at NOAO May 2012 36
Kitt Peak Visitor Center Activities Highlight
Once-in-a-Lifetime Events 39
Transit of Venus Event and Public Outreach on Easter Island 40
The Blanco f/8 Secondary Mirror:
What Happened and Will It Return to Service? 41
Kitt Peak Water System Renovation 43
NOAO Dark Skies Education for Multiple Audiences 44
Bringing the Stars to Arizona Fifth Graders 46
Dr. R. Chris Smith Switches to Full-Time AURA
Head of Mission in Chile 47
Remembering 45 Years with KPNO 48
Hector Rios Retires after 39 Years Supporting KPNO 48
Recent Staff Changes on Kitt Peak 49
Kenneth Michael Merrill
21 February 1947–31 March 2012 50
Staff Changes at NOAO North and South
(16 February 2012–15 August 2012) 51

NOAO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY

ISSUE 107 – MARCH 2013

Director's Corner

Looking Forward, not Back 2

Science Highlights

The Dark Energy Survey Fires Up 3

A Survey of Stellar Population Ages in the Halo of Andromeda 4

Kepler Photometry Plus KPNO 4-m Spectroscopy
to Get Stars Right 5

Examining a Twin of SN 1987A before It Explodes 6

System Science Capabilities

Preparing for the Future:

The NOAO LSST Community Science Center 8

BigBOSS Status Update 8

System Development Workshop:

“Spectroscopy in the Era of LSST” 9

KOSMOS and COSMOS Updates 9

SAM Update 10

Las Cumbres Observatory Gains First Light for
Entire 1-m CTIO Node 11

System Observing: Telescopes & Instruments

2013B NOAO Call for Proposals Due 28 March 2013 12

DECam Is Operational 13

Availability of the Blanco 4-m Telescope
during the Dark Energy Survey 14

DECam Community SV Update 14

Confessions of a Noncosmologist DECam Observer 15

The DECam Community Pipeline 16

Instruments Offered at KPNO in 2013B and Beyond 17

WIYN Instrumentation in 2013B 17

Remote Observing Opportunities on Kitt Peak 18

SMARTS Consortium Enters New Era as “SMARTS III” 19

System-Wide Observing Opportunities for Semester 2013B:

Gemini, Keck, Subaru, and AAT 19

KPNO Instruments Available for 2013B 21

CTIO Instruments Available for 2013B 22

Gemini Instruments Available for 2013B 23

Keck Instruments Available for 2013B 24

AAT Instruments Available for 2013B 24

Blanco f/8 Secondary Return to Service: January 2013 Update.... 25

NOAO Operations & Staff

KPNO Director's News 27

Dedication of the Dark Energy Camera 27

CTIO's 50th Anniversary Celebrations 28

50 Years of CTIO – an Exposition 29

Fifty Years of Wide-Field Studies in the Southern Hemisphere 31

Got Data? 32

NOAO at the 2013 Winter AAS Meeting 32

CTIO Summer Student Program for 2013 33

EPO Participation in the Sells Elementary

Extended-Day Program 33

Kitt Peak at the 2013 Tohono O'odham Rodeo and Fair 34

Welcome Mariela Silva Olivares,

Safety and Environmental Engineer 35

Tenure Track Position at CTIO 35

Staff Changes at NOAO North and South 35



NOAO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY

ISSUE 108 – SEPTEMBER 2013

Director's Corner

Toward a Transformed NOAO 2

Science Highlights

An NOAO Survey of South Pole Telescope SZ-Selected
Galaxy Clusters 3

DECam NEO: Near-Earth Object Search with the
Dark Energy Camera 5

Using the KPNO 4-m to Characterize Kepler's Exoplanet
Candidate Host Stars 7

The Big Picture View of a Mini Starburst 8

A SMARTS Way to Keep an Eye on Blazars 9

Imaging the Main Belt Comet P/2010 A2 with pODI 10

First Science Results with SAM in Laser Guide Star Mode 11

System Science Capabilities

DESI (Formerly BigBOSS) Status Update 12

KOSMOS and COSMOS Updates 12

System Observing: Telescopes & Instruments

2014A NOAO Call for Proposals Due 26 September 2013 14

Proposal Preparation and Submission Help 14

System-Wide Observing Opportunities for Semester 2014A:
Gemini, Keck, CHARA, Subaru, and AAT 15

Telescopes and Instruments Offered at KPNO in 2014A 16

WIYN Instrument Availability for 2014A 17

The SMARTS Consortium Continues 17

CTIO Instruments Available for 2014A 18

Gemini Instruments Available for 2014A 19

KPNO Instruments Available for 2014A 20

KECK Instruments Available for 2014A 21

AAT Instruments Available for 2014A 21

CHARA Instruments Available for 2014 21

Community Access Time Available in 2014 with CHARA 22

DECam Update 22

DECam Community Pipeline 23

NOAO Science Archive News 23

New Atmospheric Dispersion Corrector for SOAR 24

Progress with the Blanco $f/8$ Secondary 24

NOAO Operations & Staff

KPNO Director's News 26

The CTIO 50th Anniversary Conference 27

Seeing Things in a Different Light: Dark Skies
and Energy Education Comes to Yuma 27

Why So Few Native American Astronomers? One
Student's Perspective 29

The American Experience 30

CTIO's Arturo Gomez: Celebrating 43 Years of
Astronomical Service 32

Todd Boroson: An Appreciation 33

Scientific Staff Changes at CTIO 34

Kitt Peak Mourns the Passing of Two Retired Employees 35

NOAO Staff Changes at NOAO North and South 35

NOAO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY

ISSUE 109 – MARCH 2014

Director's Corner

Transforming NOAO 2

Science Highlights

ANTARES: A Tool for the LSST Transient Sky 3

A Laser Focus on Mutual Orbits of Kuiper Belt Binaries 5

SAM Makes It Sharp 6

Finding the End of the Hydrogen-Burning Main Sequence 7

Rapid Response Observations of NEOs, Using the

SOAR Telescope Goodman Spectrograph 8

KOSMOS Begins Science with a Bang 9

System Science Capabilities

The Thirty Meter Telescope and the

US Astronomical Community 10

Attend the Second TMT Science Forum 10

The LSST Project Prepares for Construction 11

Constructing TripleSpec 4: A New Infrared Spectrograph

for NOAO South 14

System Observing: Telescopes & Instruments

2014B NOAO Call for Proposals Due 31 March 2014 15

CTIO and KPNO Telescope and Instrument

Combinations for 2014B 16

System-Wide Observing Opportunities for Semester 2014B:

Gemini, Subaru, and AAT 17

KPNO Instruments Available for 2014B 19

CTIO Instruments Available for 2014B 20

Gemini Instruments Available for 2014B 21

AAT Instruments Available for 2014B 22

Multi-Object Spectroscopy Options in the

Southern Hemisphere 22

DECam Update and the Dark Energy Survey First Season 23

SMARTS Is Poised for K2 24

SOAR Dome Waxing Completed 24

Recovery Status of the $f/8$ Secondary Mirror 25

Retirement of Hydra from Blanco 25

NOAO Operations & Staff

NOAO at the 2014 Winter AAS Meeting 26

Kitt Peak Visitor Center Milestone:

50 Years of Providing Public Outreach 27

The 2014 La Serena School for Data Science 28

A Month of Personal Transformation at Kitt Peak 29

Astronomy 101 at Tohono O'odham Community College 30

CTIO Summer Student Program for 2014 32

Students Take "Grand Tour" of Telescopes 32

Update on NOAO Associate Directors 33

Changes at the SOAR Directorship 33

In Memoriam: Oscar Saa 1942–2013 34

NOAO Staff Changes at NOAO North and South 35



On the Cover

Tales of the Modern Astronomer

NOAO is embarking on a path to better serve the community in the use and analysis of big data. The cover image is the beginning panel of "Tales of the Modern Astronomer: ANTARES Rising," which tells the story of one young researcher in the near future benefiting from such development to exploit "open access to data and real-time astronomy tools" in the Large Synoptic Survey Telescope (LSST) Era (read the full story about ANTARES in the Science Highlights section of this *Newsletter*). Development is starting now to establish this expertise at NOAO on behalf of the community.

(Cover image credit: Pete Marenfeld/NOAO/AURA/NSF.)

NOAO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY
ISSUE 110 – SEPTEMBER 2014

Director's Corner

Under Construction: A Revised KPNO Program Emerges 2

Science Highlights

The Survey of the MAGellanic Stellar History (SMASH) 3
Two's Company in the Inner Oort Cloud 5
Where the Brightest Cluster Galaxies Live 6
Our Red Dwarf Neighbors 7
A Planet Discovered by Microlensing 8
The Blanco DECam Bulge Survey (BDBS) 9

System Science Capabilities

The 2014 TMT Science Forum in Tucson 11
TMT Enters Its Construction Phase 12

System Observing: Telescopes & Instruments

2015A NOAO Call for Proposals Due 25 September 2014 13
COSMOS Is Ready for Science Starting in 2015A 14
CTIO and KPNO Telescope and Instrument
Combinations for 2015A 14
System-Wide Observing Opportunities for Semester 2015A:
Gemini, Subaru, and AAT 16
Community Access Time Available in 2015 with CHARA 17

CTIO Instruments Available for 2015A 18
Gemini Instruments Available for 2015A 19
KPNO Instruments Available for 2015A 20
AAT Instruments Available for 2015A 21
CHARA Instruments Available for 2015 21
Changes in the Role of System User Support 21
Peaceful Coexistence with DES:
Tips for a Successful Blanco Telescope Proposal 22
The Dark Energy Survey's First Season 23
DECam – Status and Statistics 24
Data Available in the NOAO Science Archive 25
DES Year One Data Availability 26

NOAO Operations & Staff

Two NOAO Workshops in 2015 27
Summer Research on Light Pollution
Measurement Calibration 27
Students Wanted for 2015 CTIO REU Program 29
NOAO Hosts "Colors of Nature" Summer Academy 29
Dr. Jay Elias Becomes SOAR Director 31
NOAO Staff Changes at NOAO North and South 31



The NOAO Newsletter
is published semi-annually by the
National Optical Astronomy Observatory
P.O. Box 26732, Tucson, AZ 85726
editor@noao.edu

Publication Notes

This Newsletter is presented with active
links online at

www.noao.edu/noao/noaonews.html

Tod R. Lauer, Editor

David Silva
Tod R. Lauer
Jane Price, Ken Hinkle
Betty Stobie
Nicole S. van der Blik
Lori Allen
Stephen Pompea
Dave Bell, Mia Hartman
David Sprayberry
William Gressler

Production Staff

Barbara Fraps
Peter Marenfeld
Kathie Coil

NOAO Director's Office
Science Highlights
NOAO System Science Center
Science Data Management
CTIO
KPNO
Education & Public Outreach
System Observing
NOAO System Technology Center
LSST Project

Managing Editor
Design & Layout
Production Support

If you are receiving a paper copy but would prefer not to, please let us know at
editor@noao.edu.

NOAO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY

ISSUE 111 – MARCH 2015

Director's Corner

NOAO Director's Corner 2

Science Highlights

Massive Galaxy Clusters as Test Bed for the Dark Energy Survey 3

Connecting the Dots with COSMOS..... 4

Water at the Center of a Transitional Protoplanetary Disk –

Where It Shouldn't Be!..... 5

A Forming Planet and Its Circumplanetary Disk 6

System Science Capabilities

Recent Developments with the Thirty Meter Telescope 7

The 2014 NOAO and LSST Observing Cadences Workshop 8

Upcoming 2015 TMT Science Forum 8

TripleSpec4 Commissioning Planned for Semester 2015A 10

System Observing: Telescopes & Instruments

IMPORTANT CHANGE TO NEWSLETTER CONTENT..... 11

A New NSF-NASA Partnership for Exoplanet Research at KPNO 11

Proposal Preparation and Submission Help 11

Dark Energy Survey First Year Data Release 12

Retrieving DES Year 1 13

Data from the NOAO 13

Science Archive 13

Attend the Gemini Observatory Science Meeting..... 14

Gemini's New Fast Turnaround Initiative 14

Goodman vs. COSMOS..... 15

The Blanco Telescope Environmental Control System Upgrades.... 16

Mayall Telescope Control System Modernization 18

Nearing Completion 18

NOAO Data Reduction Mini-Workshop: Near-IR Data 18

NOAO Operations & Staff

Dr. Matt Mountain Is the New AURA President..... 19

Dr. William Smith Steps Down as AURA President 19

The International Year of Light 2015 Has Begun! 20

CTIO Summer Student Program for 2015 21

NOAO at the Seattle 2015 AAS Meeting 22

First Bytes: Dawn of the Data..... 24

Howard University ADVANCE-IT Program Selects

Dara Norman as the 2015 Faculty Fellow 29

Asteroid Named in Memory of Oscar Saa 29

NOAO Staff Changes at NOAO North and South..... 30



The NOAO Newsletter
is published semi-annually by the
National Optical Astronomy Observatory
P.O. Box 26732, Tucson, AZ 85726
editor@noao.edu

Publication Notes

This Newsletter is presented with active
links online at

www.noao.edu/noao/noaonews.html

Tod R. Lauer, Editor

David Silva
Tod R. Lauer
Jane Price, Ken Hinkle
Betty Stobie
Nicole S. van der Blik
Lori Allen
Stephen Pompea
David Sprayberry

Production Staff

Barbara Fraps
Peter Marenfeld
Kathie Coil

NOAO Director's Office
Science Highlights
NOAO System Science Center
Science Data Management
CTIO
KPNO
Education & Public Outreach
NOAO System Technology Center

Managing Editor
Design & Layout
Production Support

If you are receiving a paper copy but would prefer not to, please let us know at
editor@noao.edu.



NOAO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY

ISSUE 112 – SEPTEMBER 2015

Director's Corner

NOAO Director's Corner 2

Science Highlights

DECam Legacy Survey Announces First Data Release..... 3

New Horizons Gets a Sharp Look at Pluto..... 4

Milky Way Satellite Galaxies Discovered in First-Year

Dark Energy Survey Data 6

Measuring Orbits and Sizes of NEOWISE Near-Earth Asteroids
with DECam 8

System Science Capabilities

An Introduction to the NOAO Data Lab 9

The Future and Science of Gemini Observatory 2015 (FSG15) 10

The 2015 TMT Science Forum 11

Phoenix Moves to Gemini South 12

System Observing: Telescopes & Instruments

NOAO Proposal Preparation Information and Submission

Help for Semester 2016A 13

First Light for TS4-ARColRIS: Installation and Commissioning,
April–June 2015 13

Robo-AO to Take Over Operation of the KPNO 2.1-m Telescope 16

COSMOS Begins Regular Science Operations 17

SOAR News..... 17

2015 SOAR External Review 17

Instrument News—Goodman HTS Improvements..... 18

NOAO Operations & Staff

A Successful Year for the CTIO Undergraduate Internship

Programs in Chile 19

Seeking Applicants for the 2016 CTIO REU Program 20

Colors of Nature Summer Academy 20

Undergraduates Observe at the 0.9-m Telescope 22

NOAO Staff Changes at NOAO North and South..... 23



The NOAO Newsletter
is published semi-annually by the
National Optical Astronomy Observatory
P.O. Box 26732, Tucson, AZ 85726
editor@noao.edu

Publication Notes

This Newsletter is presented with active
links online at

www.noao.edu/noao/noaonews.html

Steve Ridgway, Editor

David Silva
Joan R. Najita
Ken Hinkle
Betty Stobie
Nicole S. van der Blik
Lori Allen
Stephen Pompea
David Sprayberry

Production Staff

Sharon Hunt
Peter Marenfeld
Kathie Coil

NOAO Director's Office
Science Highlights
NOAO System Science Center
Science Data Management
CTIO
KPNO
Education & Public Outreach
NOAO System Technology Center

Managing Editor
Design & Layout
Production Support

If you are receiving a paper copy but would prefer not to, please let us know at
editor@noao.edu.

NOAO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY

ISSUE 113 – MARCH 2016

Director's Corner

Director's Corner..... 2

Science Highlights

The RESOLVE and ECO Surveys Present Online Data and
Early Science at the AAS..... 3

Observation of Cosmic Shear Demonstrated with
Dark Energy Survey Science Verification Data 4

Find Asteroids 10× Fainter with Digital Tracking 6

A Not So Supermassive Black Hole..... 7

System Science Capabilities

A Preview of the NOAO Data Lab 8

The 30th Anniversary of IRAF..... 9

The Thirty Meter Telescope: Progress, Challenges, and
US National Participation 10

The TMT Science Forum, Kyoto, Japan, 24–26 May 2016..... 11

International Partnership for Global Astronomy 11

System Observing: Telescopes & Instruments

NOAO Time Allocation Process 12

Recent News on Open-Access Time at KPNO..... 12

KPNO in 2016 and Beyond 13

Last Semester for NEWFIRM on Kitt Peak..... 14

New DECam Filter—N964 14

URAT at CTIO 15

CHIRON Data Reduction..... 16

SOAR News..... 17

ProtoDESI: Coming to the Mayall in 2016B 18

Farewell, Feathered Friend 19

Precipitable Water Vapor Measurement on Kitt Peak 19

NOAO Operations & Staff

Welcome Adam Bolton! 20

Aloha Verne Smith! 20

NOAO at the 2016 Winter AAS Meeting..... 21

NOAO Mini-workshop on Adaptive Optics at the
2016 Winter AAS Meeting 23

NOAO Talks at the NSF Pavilion at the 2016
Winter AAS Meeting 24

CTIO Summer Student Programs for 2016..... 25

New Evening Program Premieres at Kitt Peak..... 26

Quality Lighting Teaching Kits 27

The NOAO Mobile Device Test Lab: Web Design in the
Cell Phone and Internet Watch Era 28

Twenty Years of Project ASTRO at NOAO 29

In Memoriam: Lloyd V. Wallace, 1927–2015 30

NOAO Staff Changes at NOAO North and South..... 31



The NOAO Newsletter
is published semi-annually by the
National Optical Astronomy Observatory
P.O. Box 26732, Tucson, AZ 85726
editor@noao.edu

Publication Notes

This Newsletter is presented with active
links online at

www.noao.edu/noao/noaonews.html

Steve Ridgway, Editor

David Silva
Tod R. Lauer
Ken Hinkle & Jane Price
Sean McManus
Nicole S. van der Blik
Lori Allen
Stephen Pompea

Production Staff

Sharon Hunt
Peter Marenfeld
Jessica Rose

NOAO Director's Office
Science Highlights
NOAO System Science and Data Center
Data Management Operations
CTIO
KPNO
Education & Public Outreach

Managing Editor
Design & Layout
Production Support

NOAO Newsletter

NATIONAL OPTICAL ASTRONOMY OBSERVATORY

ISSUE 114 – SEPTEMBER 2016

Director's Corner

Director's Corner..... 2

Science Highlights

Mapping the Sky for All: An Update on the DECaLS
and MzLS Surveys 3

The NEWFIRM-HETDEX Survey: Probing the Growth of Galaxies
with Cosmic Time 4

A Young Mammoth Cluster of Galaxies Sighted in
the Early Universe 5

New Objects Discovered Beyond the Outer Edge of
the Kuiper Belt..... 6

Hunting for Electromagnetic Counterparts to Gravitational
Wave Events with DECam..... 8

System Science Capabilities

The NOAO Data Lab at the AAS Meeting 10

The 2016 TMT Science Forum in Kyoto 10

New Faces in the NOAO Datasphere 12

System Observing: Telescopes & Instruments

NOAO Time Allocation Process 13

Getting Ready for the Dark Energy Spectroscopic

Instrument (DESI) 13

The GMOS Data Reduction Cookbook..... 15

The NN-EXPLORE program at WIYN..... 16

Phoenix Moves to Gemini South..... 18

New Instrumental Capabilities at SOAR 18

A Torrent of New Data at the CTIO/SMARTS 0.9 m Telescope 19

Maintenance Work on the Blanco Telescope Dome..... 20

NOAO Operations & Staff

2016 Millikan Medal Awarded to Stephen M. Pompea 21

NOAO at the Summer 2016 AAS Meeting 21

Quality Lighting Teaching Kits: Professional Development at a
Distance 22

Visiting Students at CTIO 23

The Harbour School Visits Kitt Peak 23

NOAO South Personnel Changes..... 24

The 2016 Colors of Nature Summer Academy..... 26

Confirmation of NOAO Newsletter Subscription 27

Preparing Offices for LSST at NOAO South 28

NOAO Staff Changes..... 29



The NOAO Newsletter
is published semi-annually by the
National Optical Astronomy Observatory
P.O. Box 26732, Tucson, AZ 85726
editor@noao.edu

Publication Notes

This Newsletter is presented with active
links online at

www.noao.edu/noao/noaonews.html

Tod R. Lauer, Editor

David Silva
Tod R. Lauer
Ken Hinkle & Jane Price
Nicole S. van der Blik
Lori Allen
Stephen Pompea

Production Staff

Sharon Hunt
Peter Marenfeld
Jessica Rose

NOAO Director's Office
Science Highlights
NOAO System Science and Data Center
CTIO
KPNO
Education & Public Outreach

Managing Editor
Design & Layout
Production Support



NOAO NEWSLETTER

ISSUE 115 | MARCH 2017

Editor

Tod R. Lauer

Managing Editor

Sharon Hunt

NOAO Director's Office

David Silva

Science Highlights

Tod R. Lauer

Community Science & Data

Ken Hinkle & Jane Price

CTIO

Nicole S. van der Blik

KPNO

Lori Allen

Education & Public Outreach

Stephen Pompea

Design & Layout

Pete Marenfeld

Production Support

Jessica Rose

The NOAO Newsletter

is published semi-annually by the

National Optical Astronomy Observatory

P.O. Box 26732, Tucson, AZ 85726

editor@noao.edu

Publication Notes

This *Newsletter* is presented with active links online at

www.noao.edu/NOAO_Newsletter

Director's Corner

Towards the National Center for Optical-Infrared Astronomy (NCOA) 2

Science Highlights

Vera Rubin at the National Observatory 3

First SMASH Data Release 5

A Trove of Super-Luminous Supernovae from the Dark Energy Survey 6

The Deep And Wide Narrowband (DAWN) Survey 8

Addressing a Bias in the Relation Between Galaxies and Their Central Black Holes 9

Faint Stellar Systems in the Sagittarius Stream Discovered with DECam 11

Community Science & Data

Large-Scale Survey Science and Big Data at the National Observatory 12

Data Management Operations: First-Year Developments 13

An Update on the Thirty Meter Telescope Site 14

US National Gemini Office Mini-workshop: "Mining Observatory Archives" 16

System Observing

NOAO Time Allocation Process 17

Open-Access Time Available on the Large Binocular Telescope for Semester 2017B 17

SMARTS Update 17

NEWFIRM Catches Its Last Photon 18

SOAR Updates 19

NOAO Operations & Staff

NOAO Appoints Chief Scientist 21

NOAO at the 2017 Winter AAS Meeting 21

The Big Data Academy Science Café 24

A Science and Tourism Project in the Bosque Fray Jorge National Park, Chile 25

ACEAP Program Visits Kitt Peak 27

La Serena Astronomers Meet at the Astro-Jamboree 2016 28

NOAO Staff Changes 29

On the Cover

"Tales of the Modern Astronomer: Boom Goes the Night"

NOAO is developing tools for the astronomical community to enable research using big datasets from multiple sources. The cover image is the first panel of "Tales of the Modern Astronomer: Boom Goes the Night," which tells the story of a young researcher who uses tools such as ANTARES (Arizona-NOAO Temporal Analysis and Response to Event Systems) to find the optical afterglow of a gravitational wave detection by combining LIGO (Laser Interferometer Gravitational-Wave Observatory) with the Large Synoptic Survey Telescope (LSST) alert stream to identify optical afterglow candidates that can be followed up with telescopes such as Gemini and the Blanco 4m telescope using the Dark Energy Camera (DECam). (Cover image credit: P. Marenfeld/NOAO/AURA/NSF)