



Title: QSU 4 FY2015	Author: NRAO staff	Date: 11/10/2015
NRAO Doc. #: PMD000166		Version: Final

National Radio Astronomy Observatory

Quarterly Status Update 4 FY2015

July - September, 2015

PREPARED BY	ORGANIZATION	DATE
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NRAO Quarterly Status Update (QSU4 FY2015)
July - September 2015

POP Section Number	POP Milestone	Task Name	Completion Date	Q1 Performance Assessment			Q2 Performance Assessment			Q3 Performance Assessment			Q4 Performance Assessment		
				Cost	Schedule	Technical	Cost	Schedule	Scope	Cost	Schedule	Scope	Cost	Schedule	Scope
2.6	I	Atacama Large Millimeter/submillimeter Array (ALMA)													
		Operations													
			12/31/2014												
		Carry out AoD shifts at the OSF	3/31/2015												
			6/30/2015												
			9/30/2015												
		2 Hire two data analysts and two scientists	12/31/2014												
		3 Cycle 2 Status Update	12/31/2014												
		4 Support Long Baseline Campaign	12/31/2014												
		5 Eliminate Backlog in Cycle 2 Data Reduction	12/31/2014												
		6 Participate in Cycle 3 Obsmode go / no-go meeting	12/31/2014												
		7 Participate in ALMA Int Science Conference and Postdoc Symposium	12/31/2014												
		8 Participate in ALMA Operations Readiness Review	3/31/2015												
		9 Offer Data Processing Workshop in Charlottesville	3/31/2015												
		10 Cycle 3 Prep: SW tests, Documentation Prep, Call for Proposals	3/31/2015												
		11 Cycle 3 Prep: Community Day Events, User Support for Deadlines	6/30/2015												
		12 Cycle 3: Technical Assessments, Tech Secretary Support	6/30/2015												
		13 Cycle 4: Capabilities Planning	6/30/2015												
		14 Cycle 3: P2G and CS Assignments	9/30/2015												
		15 Cycle 3: First batch of SBs validated	9/30/2015												
		16 Offer Data Processing Workshop in Charlottesville	9/30/2015												
		17 Pipeline Heuristics: Input on Reference Imaging	12/31/2014												
		18 Pipeline Heuristics: Input on Improved Calibration heuristics	3/31/2015												
		Development													
		19 NA ALMA Development Studies initiated in FY2014 will be completed	3/31/2015											Ongoing	
		20 NA ALMA Development Studies Call for Proposals date – next round (preliminary date) ⁹	3/31/2015												
		21 NA ALMA Ongoing Development Projects initiated in FY12 will be completed	12/31/2014												
		Maintenance and Renewal													
		22 Commission the FE test cryostat at the NTC	3/31/2015												
		23 Install and test one FETIM module in an antenna receiver cabin	6/30/2015												
		24 Execute on-site (re) training	9/30/2015												
		NRAO-Chile Office													
		25 Hire NRAO-Chile Chief of Staff	12/31/2014												
			12/31/2014												
		26 Support ALMA HR Department	3/31/2015												
			6/30/2015												
		27 Prepare for Upcoming Union Negotiations	6/30/2015												
			9/30/2015												
		28 Study Alternative Office Locations	12/31/2014												
3.4		New Mexico Operations													
		VLA Science Operations													
		1 Define VLA capabilities to be offered for semester 2015B	12/31/2014												
		2 Define VLA capabilities to be offered for semester 2016A	6/30/2015												
		3 Update VLA documentation to support 2015B Call for Proposals, perform proposal technical reviews	3/31/2015												
		4 Update VLA documentation to support 2016A Call for Proposals, perform proposal technical reviews	9/30/2015												
		5 Determine baselines and pointing for antennas moving into their C configuration locations	12/31/2014												
		6 Determine baselines and pointing for antennas moving into their CnB and B configuration locations	3/31/2015												
		7 Determine baselines and pointing for antennas moving into their BnA and A configuration locations	6/30/2015												
		8 Subarray observing automated and incorporated into dynamic scheduler	6/30/2015												
		9 Incorporate 4-element API into regular operations	6/30/2015												
		10 Complete VLITE tests requiring B configuration and integrate VLITE into operations	3/31/2015												
		11 Testing and evaluation of new 3-bit samplers complete	9/30/2015												
		12 Make frequency averaging available in the CBE to lower data rate	3/31/2015												
		VLA Array Operations													
		13 Reconfigure array to C configuration	12/31/2014												
		14 Reconfigure array to CnB, then B configuration	3/31/2015												
		15 Reconfigure array to BnA, then A configuration	6/30/2015												
		16 Reconfigure array to D configuration (part)	9/30/2015												
		17 Establish DSOC control room for VLA Operations	3/31/2015												
		18 Commence DSOC VLA Operations	6/30/2015												

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		VLA Antenna Maintenance													
	19	Perform 7 antenna overhauls during the course of the year	9/30/2015												
	20	Replace one antenna azimuth bearing during the source of the year	9/30/2015												
	21	Perform preventive maintenance on each of two transporters prior to array reconfiguration	12/31/2014												
	22	Perform preventive maintenance on each of two transporters prior to array reconfiguration	6/30/2015												
	23	Perform preventive maintenance on each of two transporters prior to array reconfiguration	9/30/2015												
		VLA Track Maintenance													
	24	Identify and replace 5000 aging or damaged cross-ties during the course of the year	9/30/2015												
	25	Identify and replace 5 antenna pad intersections during the course of the year	9/30/2015												
		VLA Site Infrastructure Maintenance													
	26	Perform preventive maintenance on all VLA site transformers during the course of the year	9/30/2015												
		VLA Technical Upgrades and Enhancements													
	27	L-Band solar upgrade, 2 additional receivers with full RF upgrade installed	3/31/2015												
	28	X-Band solar upgrade, 3 additional receivers with 20 dB switched attenuators on outputs only, no solar Tcals, installed	6/30/2015												
	29	X-Band solar upgrade, 3 additional receivers with solar Tcal path plus 20 dB switched attenuators installed	9/30/2015												
	30	Ku-Band solar upgrade, 1 additional receiver with 20 dB switched attenuators on outputs only, no solar Tcals, installed	3/31/2015												
	31	Ku-Band solar upgrade, 3 additional receivers with solar Tcal path plus 20 dB switched attenuators installed	9/30/2015												
	32	S-Band solar upgrade, 3 additional receivers with solar Tcal path plus 20 dB switched attenuators installed	9/30/2015												
	33	FE card cage upgrades, 35 units installed	3/31/2015												
	34	C-Band thermal gap retrofits, 4 additional installed	9/30/2015												
	35	L-Band thermal gap retrofits, 6 additional installed	9/30/2015												
	36	FE cal board upgrades, 20 installed	9/30/2015												
	37	Prototype FE noise diode temperature stabilization assembly tested	6/30/2015												
	38	Replace the remaining legacy Q-Band receiver interface hardware sets	9/30/2015												
	39	Install 3rd replacement ACU	6/30/2015												
	40	Install 13 additional DTS transmitter modules with new 3-bit sampler boards	6/30/2015												
	41	Install prototype F318 module in antenna	12/31/2014												
	42	Install 10 production F318 modules in antennas	6/30/2015												
		VLA Observing Capability Enhancements													
	43	Commission and document P-Band spectroscopy and polarimetry for 2016B	9/30/2015											Cancelled	
	44	Commission and document pulsar observing modes for 2016B	9/30/2015												
	45	Evaluate 6 MJP feeds and write performance memo	6/30/2015												
		VLA Operational Enhancements													
	46	Improve robustness of reference pointing solutions	9/30/2015												
	47	Implement old-style VLA (stepped) tipping scans	6/30/2015												
	48	Commission and document use of switched power calibration in CASA	9/30/2015												
	49	Develop heuristics for polarization calibration for the VLA calibration pipeline	6/30/2015												
	50	Commission and document improvements to ionospheric calibration	3/31/2015												
	51	Development in support of VLA Sky Survey, as specified in the VLASS Technical Implementation Plan	9/30/2015												
		VLBA Science Operations													
	52	Define VLBA capabilities to be offered for semester 2015B	12/31/2014												
	53	Define VLBA capabilities to be offered for semester 2016A	6/30/2015												
	54	Update VLBA documentation to support 2015B Call for Proposals, perform proposal technical reviews	3/31/2015												
	55	Update VLBA documentation to support 2016A Call for Proposals, perform proposal technical reviews	9/30/2015												
		VLBA Antenna Maintenance													
	56	Tiger Team maintenance campaign to OV	6/30/2015												
	57	Tiger Team maintenance campaign to SC	9/30/2015												

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			Completion Date	Cost	Schedule	Technical	Cost	Schedule	Scope	Cost	Schedule	Scope	Cost	Schedule	Scope
		VLBA Technical Upgrades and Enhancements													
	58	Install production M450 in a VLBA antenna for testing	6/30/2015												
		VLBA Observing Capability Enhancements													
	59	Commission and document DDC-8 on Effelsberg for 2016B	9/30/2015												
	60	Commission and document PFB on LMT for 2016B	9/30/2015												
		Site Operations													
	61	Complete electronic door access for the DSOC	12/31/2014												
	62	Renew leases for OV and SC	12/31/2014												
4.4		West Virginia Operations													
		GBT Development													
	1	Commissioning of MUSTANG1.5	12/31/2014												
	2	Commissioning of ARGUS receiver	3/31/2015												
		GBT Maintenance													
	3	Beginning of summer painting	6/30/2015												
	4	End of summer painting	9/30/2015												
	5	GBT track inspection will take place, any needed repairs completed	9/30/2015												
	6	Beginning of structural inspections	6/30/2015												
	7	End of structural inspections	9/30/2015												
	8	Begin replacement of GBT active surface electronics	9/30/2015												
		Site Operations													
	9	Repair culvert by interferometer	9/30/2015												
5.3		Central Development Laboratory													
		Repair, Maintenance, Production, Support													
	1	Complete repair of eight spare Band 6 SIS mixers	9/30/2015												
	2	Design, build and test Qty. 4 MIC LNAs	12/31/2014												
	3	Build and test Band 1 amplifiers	3/31/2015												
	4	Design ALMA Band 2 optical system	12/31/2014												
	5	Test Band 2 optical system	12/31/2014												
	6	Deliver Band 2 optical system	12/31/2014												
	7	Complete ALMA Phasing System hardware and firmware acceptance tests.	12/31/2014												
	8	Fabricate, evaluate, and deliver spare components to the PAPER-12B site.	9/30/2015												
		Research and Development													
	9	Demonstrate balanced low-noise 4-12 GHz amplifier with superconducting hybrids	9/30/2015												
	10	Cryogenically test MMIC amplifier modules using NGC 35nm PHEMT process	6/30/2015												
	11	Cryogenically test MMIC amplifier module using BAE 50nm MHEMT process	6/30/2015												
	12	Develop a new feed for the 14 meter diameter paraboloidal reflector antenna. This will be based on the PAPER dipole. The work will include electromagnetic design and analysis.	9/30/2015												
	13	Mentor pre-doctoral student to measure the beam pattern of a new HERA prototype antenna using satellite downlink signals.	9/30/2015												
	14	Develop the DARE radiometer proof-of-concept and calibration procedure	9/30/2015												
	15	Mentor Reber pre-doctoral graduate student to examine the influence of the ionosphere on the measurement of Dark Ages hydrogen	9/30/2015												
	16	Implement a six-channel "IRD Backend" using a Kintex-7 FPGA processor.	6/30/2015												
	17	Demonstrate de-interleaving of multiple data sources on a shared fiber-optic link using a CPLD keyed to gain mismatch.	9/30/2015												
	18	Implement advanced topologies and miniaturized packaging of reflectionless filters.	9/30/2015												
	19	Prototype and evaluate redesigned low noise amplifiers.	6/30/2015												
	20	Integrate and test the digital downconverter with PAF front end	6/30/2015												
	21	Digital receiver development: Prototype photoreceiver PC board and test with Roach 2 firmware	9/30/2015												
	22	Improve PAF electromagnetic and beamforming model	3/31/2015												
	23	Feasibility study for improved PAF receiver	9/30/2015												
6.5		Science Support & Research													
		Telescope Time Allocation (TTA)													
	1	CIP for semester 2015B	3/31/2015												
	2	CIP for semester 2016A	9/30/2015												
	3	SRP and tech review process, semester 2015B	3/31/2015												
	4	SRP and tech review process, semester 2016A	9/30/2015												
	5	TAC meeting for semester 2015A	12/31/2014												
	6	TAC meeting for semester 2015B	6/30/2015												
	7	Update SW tools requirements for TAC support 2015A	12/31/2014												
	8	Update SW tools requirements for PST 2015B	3/31/2015												
	9	Update SW tools requirements for TAC support 2015B	6/30/2015												
	10	Update SW requirements tools for PST 2016A	9/30/2015												
	11	Update documentation for CIP and tools 2015B	3/31/2015												
	12	Update documentation for CIP and tools 2016A	9/30/2015												

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		Science User Support (SUS)													
	13	4th VLA data reduction tutorial	12/31/2014												
	14	SPF I CDE	3/31/2015												
	15	ALMA cycle 3 CDE planning	6/30/2015												
	16	Filaments workshop	12/31/2014												
	17	Revolution in Astronomy	12/31/2014												
	18	AAAS session on Galaxy Assembly	3/31/2015												
	19	SPF I meeting	3/31/2015												
	20	Integrated HD requirements	12/31/2014												
	21	RPI and NRAO archive user testing	12/31/2014												
	22	Integrated science portal requirements	6/30/2015												
	23	Summer student selection	3/31/2015												
	24	Summer student offers	3/31/2015												
	25	Summer student program begins	6/30/2015												
	26	Summer student program complete	9/30/2015												
	27	SOS selection begins	9/30/2015												
	28	Update CASAGUIDES	12/31/2014												
	29	Review ALMA user documents	3/31/2015												
	30	Update CASAGUIDES	6/30/2015												
		SSR Services													
	31	Library contracts negotiated	3/31/2015												
	32	Metrics web interface requirements	3/31/2015												
7.4		Data Management & Software													
		Scientific Information Services													
	1	SSO aligned for MyNRAO and ALMA accounts	12/31/2014												
	2	Merger of helpdesk	3/31/2015												
	3	PI Access to NAASC cluster	6/30/2015												
	4	Increase bandwidth to sites	12/31/2014												
	5	Increase bandwidth to sites	3/31/2015												
	6	Increase bandwidth to sites	6/30/2015												
	7	Increase bandwidth to sites	9/30/2015												
	8	XSEDE access	3/31/2015												
	9	Federated identity management evaluation	3/31/2015												
	10	PSC access	6/30/2015												
	11	Amazon cloud for CASA	9/30/2015												
	12	Multi-core development testbed installed	12/31/2014												
	13	Unified approach to Lustre backup	6/30/2015												
		ALMA System Software													
	14	ALMA Fall 2014 Release	12/31/2014												
	15	ALMA Spring 2015 Release	6/30/2015												
	16	ALMA Phasing Project	6/30/2015												
		VLA/VLBA System Software													
	17	Deploy software to support Semester 2014B observing.	3/31/2015												
	18	Deploy software to support Semester 2015A commissioning.	3/31/2015												
	19	Deploy software to support Semester 2015A observing.	9/30/2015												
	20	Deploy software to support Semester 2015B commissioning.	9/30/2015												
	21	Integrate VLITE Operations	3/31/2015												
	22	Deliver Frequency Averaging	12/31/2014												
	23	Write Pointing Table	3/31/2015												
	24	VME replacement	9/30/2015												
		GBT System Software													
	25	Modify Astrid to Use Streaming	12/31/2014		Cancelled										
	26	Operations software update	12/31/2014												
	27	Vegas Pulsar Modes	12/31/2014												
	28	NRQZ software	3/31/2015						Cancelled						
	29	M&C release	9/30/2015												
	30	CLEO Update	6/30/2015									Cancelled			
	31	Parallelize Pipeline	12/31/2014												
	32	Pipeline improvements	9/30/2015												
	33	Test Pipeline with PSC – evaluate candidates	3/31/2015												
		Software Development													
	34	Operationalize the new NRAO Archive and RPI	3/31/2015												
	35	Implement CASA calibration pipeline in production for the VLA	6/30/2015												
	36	Release CASA version 4.3	12/31/2014												
	37	Release CASA version 4.4	6/30/2015												
	38	Implement PST updates for Semester 2015B Call for Proposals	12/31/2014												
	39	Implement PST updates for Semester 2016A Call for Proposals	6/30/2015												
	40	Implement PHT updates for Semester 2015B TAC Meeting	3/31/2015												
	41	Implement PHT updates for Semester 2016A TAC Meeting	9/30/2015												
	42	Implement OPT updates for Semester 2015A VLA Observing	12/31/2014												
	43	Implement OPT updates for Semester 2015B VLA Observing	6/30/2015												
	44	Create Architecture for Observatory Tools	3/31/2015												
	45	Expand CASA Test Scope	6/30/2015												
	46	Hand over ALMA Testing to Chile	9/30/2015												

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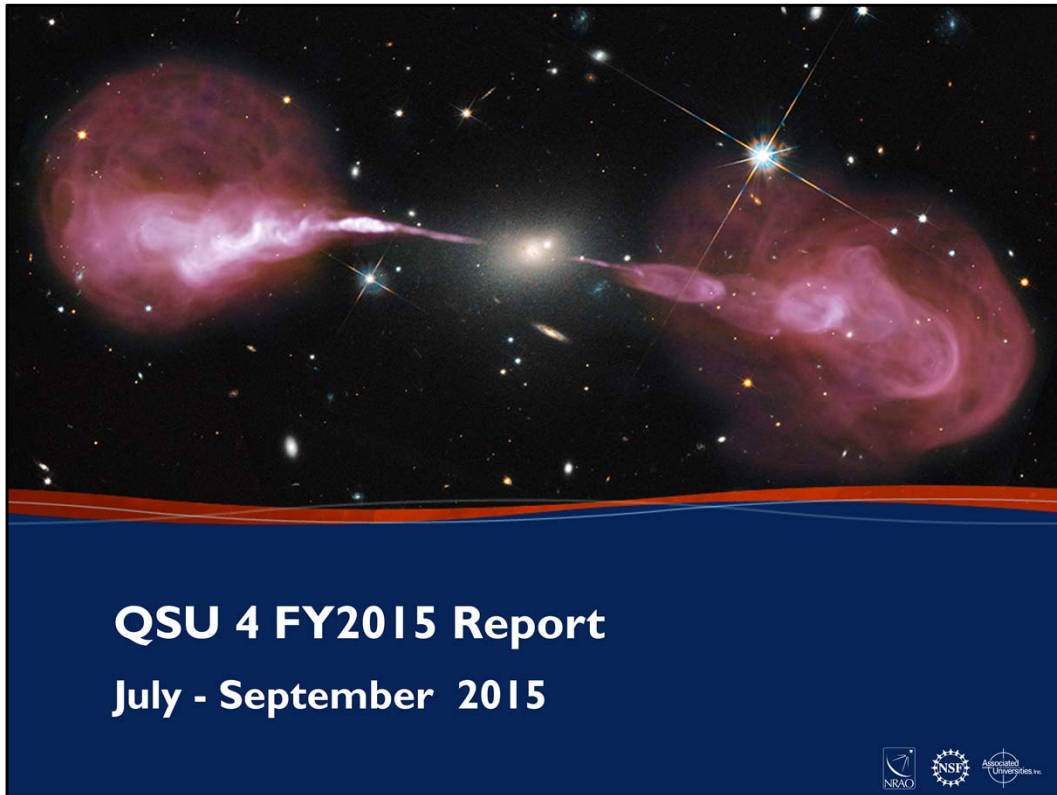
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				Cost	Schedule	Technical	Cost	Schedule	Scope	Cost	Schedule	Scope	Cost	Schedule	Scope
8.5		Program Management Department													
		Headquarters													
	1	SOP and Templates available	3/31/2015												
			12/31/2014												
	2	Quarterly Status Updates	3/31/2015												
			6/30/2015												
			9/30/2015												
	3	Program Operating Plan (if required)	9/30/2015												
	4	Long Range Plan (if required)	9/30/2015											not required	
	5	Annual Progress Summary	9/30/2015												
		New Mexico													
	6	Finalize NM Ops and DMS Training Plan (1st Phase)	12/31/2014												
	7	PM 101 Training	3/31/2015												
	8	SE 101 Training	9/30/2015												
	9	Retrospective Analysis of CASA 4.4 Release	6/30/2015												
	10	Host learning session	12/31/2014												
	11	Host learning session	3/31/2015												
	12	Host learning session	6/30/2015												
	13	Host learning session	9/30/2015												
		Central Development Laboratory													
	14	Develop Training Plan	12/31/2014												
	15	Training lessons provided	12/31/2014												
	16	Training lessons provided	3/31/2015												
	17	Training lessons provided	6/30/2015												
	18	Training lessons provided	9/30/2015												
	19	Facilitate Concept Feasibility Gate	6/30/2015												
	20	Call for Study Proposals	3/31/2015												
		Green Bank													
	21	Finalize Green Bank Training Plan	12/31/2014												
	22	PM/SE Implementation Training	3/31/2015												
	23	Host learning session	12/31/2014												
	24	Host learning session	3/31/2015												
	25	Host learning session	6/30/2015												
	26	Host learning session	9/30/2015												
10.3		Education and Public Outreach													
		STEM Education													
			12/31/2014												
	1	Second round of SJS professional development meetings for educators	3/31/2015												
			6/30/2015												
	2	Curriculum development for SJS web portal complete	6/30/2015												
	3	Develop "vision" for new VLA Visitor/Education Center	12/31/2014												
	4	Develop plan for VLA Visitor/Education Center Capital Fundraising Campaign	3/31/2015												
	5	Develop VLA Visitor/Education Center business/operations plan	6/30/2015												
	6	Create VLA Visitor/Education Center exhibit theming plan.	9/30/2015												
	7	Decide upon admission fee structure for existing VLA Visitor Center	12/31/2014												
	8	Implement new admission fee at VLA Visitor center on 1 January 2015	3/31/2015												
	9	Complete Interpretive Training for J. Stanley and L. Baric	6/30/2015												
	10	Complete plan for recruitment and training of VLA Visitor Center volunteer guides	9/30/2015												
	11	STEM Career Day at Dominion Virginia Electric	12/31/2014												
	12	10th Grade STEM Day at Piedmont Virginia Community College (if invited)	3/31/2015												
	13	STEM Career Focus videos	9/30/2015												
	14	SPOT: Introduce new feature presentation	12/31/2014												
	15	SPOT: Recruit new UVA-based undergraduate ambassadors	12/31/2014												
		News and Public Information													
	16	Convert NRAO public website to Joomla 3 CMS	12/31/2014												
	17	New server-based popular content caching	6/30/2015												
	18	New planetary system content for The Milky Way Explorer	12/31/2014												
	19	New Local Group content for The Milky Way Explorer	9/30/2015												
	20	Functional spec and design completed for "RadioSky" app	12/31/2014												
	21	iOS version of "RadioSky" app ready for beta testing	6/30/2015												

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11.4		Computing & Information Services													
	1	Cross training for coverage between sites	3/31/2015												
	2	ITIL training for staff	9/30/2015												
	3	CCE coordination meeting	12/31/2014												
	4	Migration to Windows 7 compete	12/31/2014												
	5	Evaluation of Windows 8	6/30/2015												
	6	Migration to RHEL 6	3/31/2015												
	7	Replace Network Attached Storage in GB	6/30/2015												
	8	Document Management system	3/31/2015												
	9	Network upgrade review	3/31/2015												
	10	Bro IDS installed at gigabit speeds	9/30/2015												
	11	Service availability and location review	9/30/2015												
	12	Replacement of end-of-life Video Hub	12/31/2014												
	13	Replacement of legacy room reservation SW	3/31/2015												
	14	Use of thin clients to replace desktops	9/30/2015												
12.3		Diversity													
		Diversity Council													
	1	Office of Diversity Initiatives/Diversity Council	3/31/2015												
	2	ODI review diversity portfolio/programs, plans to establish metrics	6/30/2015												
	3	ODI – host external diversity review committee, coordinate logistics of NAC III workshop, prepare budget	9/30/2015												
		National/Domestic Outreach													
	4	Undergraduate Intern Program for SOC Electronics Division	3/31/2015												
	5	LSAMP, NAC, SOC Summer Youth Employment Program, PING, African American Teaching Fellows coordination	06/31/2015												
	6	Partnership with Native American point of contact and designate representative from CV and SOC	06/31/2015												
		International Outreach													
	7	NINE- NRAO Staff to South Africa – teaching and recruitment	3/31/2015												
	8	UVA/NRAO Chilean PhD Sponsorship	3/31/2015					Cancelled							
		Improve Workplace Culture													
	9	Diversity and Cultural Awareness Training #1	6/31/2015												
	10	Diversity and Cultural Awareness Training #2	9/30/2015												
13.7		Human Resources													
		Policy													
	1	Complete the final revisions, formatting and refinement of the combined Supervisor's Manual and Employee Handbook and ensure posting readiness to NRAO internal website. Obtain appropriate legal review and final review/ approval from NRAO and AUI	12/31/2014												
		Training													
	2	Deliver 4 newly designed Mgmt/Supervisory courses. Courses are: 1) Time off/Attendance/FML, 2) Harassment/ Bullying/Discrimination, 3) The Electronic PEP Process, and 4) Effective Planning and Goal Setting	3/31/2015												
	3	Design two new Mgmt/Supervisory courses	6/30/2015												
		Compensation													
	4	Ensure all reconfiguration changes/improvements are complete in order to launch the electronic PEP process for the FY2014 performance period	12/31/2014												
	5	All preparations complete and salary review worksheets are open to pay decision managers for final merit review decisions	3/31/2015												
	6	Participate in all credible/scheduled salary survey sources and conduct analysis of benchmark jobs	9/30/2015												
	7	Job Description Builder module added to Halogen System. HR Staff will be trained on how to be administrators/users	6/30/2015												
		Benefits													
	8	HR prepares and distributes all open enrollment materials to employees and makes enrollment changes into JDE and with vendors	12/31/2014												
	9	Create and deliver targeted wellness program and processes to address high frequency/high cost illness/injury areas to employees and the Observatory. Proactively identify others trending towards high frequency/high cost	6/30/2015												
	10	NRAO HR partners with AUI to review and identify health plan design changes for the next calendar year	9/30/2015												
		Employment													
	11	Update WFM and Staffing Plans	3/31/2015												
		Human Resources													
	12	Implement Phase I Succession Planning	6/30/2015												
14.1		Communications													
		Science Communications													
	1	Complete science meeting exhibit re-design	12/31/2014												
	2	Update Research Facilities brochure	12/31/2014												
	3	Submit 2016 AAAS science symposium proposal	6/30/2015												
	4	Publish 2014 NRAO Annual Report	9/30/2015												

NRAO Quarterly Status Update (QSU4 FY2015)
July - September 2015

POP Section Number	POP Milestone	Task Name	Q1 Performance Assessment				Q2 Performance Assessment			Q3 Performance Assessment			Q4 Performance Assessment		
			Completion Date	Cost	Schedule	Technical	Cost	Schedule	Scope	Cost	Schedule	Scope	Cost	Schedule	Scope
15.6		Administration													
		Business Services													
	1	Index and box ALMA Construction documents. Identify and contract with an off-site storage facility	9/30/2015										Cancelled		
	2	Establish a time-line and strategize the design of a new chart of accounts.	3/31/2015												
	3	Gather and enter all final revenues, expenses, and adjustments	6/30/2015												
	4	Review current methodologies. Prepare new ones and review with site directors and NRAO Director.	3/31/2015												
		CAP													
	5	Design policy, review and socialize with assistant directors and business managers	12/31/2014												
	6	Design program and obtain approval of Assoc. Director of Administration	3/31/2015												
	7	Design a purchasing training program for users of the purchasing and requisition systems and obtain approval of Assoc. Director of Administration	6/30/2015												
		ES&S													
	8	Implement Hazcom Database	3/31/2015												
	9	Complete ES&S Supervisory Safety training modules	6/30/2015												
		MIS													
	10	Top-level gap analysis review of the JD Edwards enterprise resource planning (ERP) system	3/31/2015												
	11	Load new or updated JD Edwards modules	9/30/2015												
		TTO													
	12	Identify from IP Asset Register, review choices through selection committee, begin commercialization efforts	9/30/2015												
	13	Collaborate with UVA and NRAO software imaging designers to gauge interest in medical imaging conference. Raise money for conference	6/30/2015										Cancelled		
16.5		Spectrum Management													
		Spectrum Management													
	1	Iridium: Initial discussions	12/31/2014												
	2	ITU-R: SG7 WP 7D meetings	12/31/2014												
	3	ITU-R: WP 5B meeting	12/31/2014												
	4	ITU-R: CPM15-2	6/30/2015												
	5	IUCAF: Assume IUCAF chair at IAU GA	9/30/2015												
		WV Radio Quiet Zone													
	6	Replace propagation software for WV quiet zones	9/30/2015												
17.1		Director's Office													
		ALMA													
	1	ALMA Board Meeting	12/31/2014												
3/30/2015															
6/30/2015															
9/30/2015															
	2	ALMA Director's Council	12/31/2014												
3/30/2015															
6/30/2015															
9/30/2015															
	3	ALMA Completion Review	3/31/2015												
		Corporate Meetings													
	4	AUI Board of Trustees meetings	12/31/2014												
3/30/2015															
6/30/2015															
	5	AUI Executive Committee meetings	12/31/2014												
6/30/2015															
9/30/2015															
		Science Community													
	6	Appoint new Users Committee members	12/31/2014												
	7	Users Committee meeting	6/30/2015												
		Management Review													
	8	NSF Annual Program Review	12/31/2014												
	9	All Hands presentation	12/31/2014												
			6/30/2015												



POP MILESTONE # 2.6.16

ALMA

Offer Data Processing Workshop in Charlottesville



COST:

Labor Actuals	Expected
\$	\$
Material Actuals	Expected
\$	\$
Travel Actuals	Expected
\$	\$

SCOPE:

Offer a CASA data reduction workshop for PIs at the NAASC-Charlottesville Offices

SCHEDULE:

Milestone	Schedule	Target
I Offer Data Processing Workshop in Charlottesville	9/30/2015	1/31/2016

RISK & MITIGATION:

Risk	Mitigation
I Little risk associated with delaying 1-2 quarters	The visitor support program is available for those needing short-term data reduction support.

COST: N/A

SCHEDULE: Staff determined that most interest in a workshop would occur shortly before the next ALMA deadline rather than in the late summer immediately following two summer schools. This also allowed the staff to focus on data delivery during this period.

SCOPE: N/A

RISK & MITIGATION: N/A

POP MILESTONE # 2.6.2I

ALMA

NA ALMA Ongoing Development Projects Initiated in FY12



COST:

Labor Actuals	Expected
\$ Various	\$ Various
Material Actuals	Expected
\$ Various	\$ Various
Travel Actuals	Expected
\$ Various	\$ Various

SCOPE:

Fiber Optic connectivity: FO system fully functional; awaiting operating permit from Chilean regulatory agency (*Bienes Nacionales*)

SCHEDULE:

Milestone	Schedule	Target
I Project close-out	12/31/2014	12/31/2015

RISK & MITIGATION:

Risk	Mitigation
I Continuing delay of operating permit	Continue to operate existing communication link

COST: N/A

SCHEDULE: Fiber Optic Connectivity: System is fully functional. We are waiting for Silica (FO contractor) who is actively working on the transfer of the access rights from Gas Atacama Silica. This is done with the Chilean competent authority (Bienes Nacionales).

SCOPE: N/A

RISK & MITIGATION: While awaiting the Permits for the Fiber Optic Connection we will continue to fund and use the current microwave shot at no additional cost to the project.

POP MILESTONE # 2.6.23

ALMA

Install & test one FETIM module in an antenna receiver cabin

Cost

Schedule

Scope

COST:		SCOPE:	
Labor Actuals	Expected	Implement an independent hardware and/or firmware based interlock system to protect the FE system when abnormal temperature and air-flow conditions arise in the antenna receiver cabin.	
\$	\$		
Material Actuals	Expected		
\$	\$		
Travel Actuals	Expected		
\$	\$		
SCHEDULE:		RISK & MITIGATION:	
Milestone	Schedule	Target	
I Install and test one FE Thermal Interlock Module in antenna receiver cabin.	6/30/2015	11/27/2015	
		Risk	Mitigation
		Not a critical system that affects any science operation, but non availability of a redundant interlock places some risk to the safety of equipment in the receiver cabin.	Risk to receivers is already being managed by monitoring and alarm system implemented in software. FETIM debugging at NA FEIC complete, results duplicated at the OSF laboratory, waiting for testing in the receiver cabin.

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QSU 4 FY2015

COST: Not applicable, hardware is already delivered, might need firmware/software updates.

SCOPE: The FETIM was tested at the OSF laboratory by the NA team visiting the OSF in March 2015, and was found to be operational. However, when the staff at the OSF installed it on an antenna they could not turn on the turbo pump for FE 059, (same FE was used for FETIM testing earlier). The problem seems to be associated with the removal of the FETIM to compressor M&C interlock cable, which is not present on the antennas (ESO deliverable). Although unexpected, the possibility of such an error was not recognized earlier and was not tested for previously or during the visit. Low priority task.

SCHEDULE: New Target date of 11/27/2015 was provided in the QSU3 update. Attempts to recreate the problem at the NA FEIC using the test cryostat indicated that the FETIM was operating well within the desired parameters. In September 2015, the NA personnel visiting the OSF demonstrated the functionality in the OSF laboratory for the desired configuration with the absent interlock cable using laboratory software. Subsequently, tests have been completed by the OSF staff using ALMA software in the FE laboratory there, and another FE assembly has been outfitted with the FETIM. It will be verified in the FE laboratory, and subsequently follow up testing will be made in a receiver cabin. Work is in progress and expected to conclude by the revised target date.

RISK & MITIGATION: Explained on the slide.

POP MILESTONE # 3.4.8

NM OPS

Automate Subarray Observing

Cost
 Schedule
 Scope

COST: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; padding: 2px;">Budget Actual</th> <th style="width: 50%; padding: 2px;">Budget Planned</th> </tr> <tr> <td colspan="2" style="padding: 2px;">There are no changes in budget.</td> </tr> </table>			Budget Actual	Budget Planned	There are no changes in budget.		SCOPE: <p>Observations using multiple VLA subarrays were effectively done by hand during FY2014.</p> <p>This mode will be automated and incorporated into the dynamic scheduler for testing during FY2015.</p>													
Budget Actual	Budget Planned																			
There are no changes in budget.																				
SCHEDULE: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%; padding: 2px;">Milestone</th> <th style="width: 20%; padding: 2px;">Schedule</th> <th style="width: 50%; padding: 2px;">Target</th> </tr> <tr> <td style="padding: 2px;">1 subarray observing "by hand"</td> <td style="padding: 2px;">3/31/2014</td> <td style="padding: 2px;">3/31/2014</td> </tr> <tr> <td style="padding: 2px;">2 subarray observing automation</td> <td style="padding: 2px;">6/30/2015</td> <td style="padding: 2px;">12/1/2015</td> </tr> </table>			Milestone	Schedule	Target	1 subarray observing "by hand"	3/31/2014	3/31/2014	2 subarray observing automation	6/30/2015	12/1/2015	RISK & MITIGATION: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; padding: 2px;">Risk</th> <th style="width: 50%; padding: 2px;">Mitigation</th> </tr> <tr> <td style="padding: 2px;">1 Slightly reducing user chances to observe priority C (filler projects)</td> <td style="padding: 2px;">Continue scheduling subarrays manually</td> </tr> <tr> <td style="padding: 2px;">2 Delay other observatory activities caused by effort being used for manual scheduling</td> <td style="padding: 2px;">Tasks with less urgency will be delayed while automation is not available</td> </tr> </table>			Risk	Mitigation	1 Slightly reducing user chances to observe priority C (filler projects)	Continue scheduling subarrays manually	2 Delay other observatory activities caused by effort being used for manual scheduling	Tasks with less urgency will be delayed while automation is not available
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1 subarray observing "by hand"	3/31/2014	3/31/2014																		
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2 Delay other observatory activities caused by effort being used for manual scheduling	Tasks with less urgency will be delayed while automation is not available																			

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QSU 4 FY2015

COST: N/A

SCOPE: The VLA can be split up in subarrays. That is, some of the 27 antennas and corresponding baselines can be ordered to do a completely different and independent program than other antennas. This may be the case when an observer has asked to divide up the array for a single project to observe a source simultaneously in multiple bands or to observe multiple different sources simultaneously that do not need the full array, or when one antenna is split off from the main array for inclusion in a VLBI array by another user (though this last option, also called "YI", is not currently offered for general observing).

SCHEDULE: Observations using multiple subarrays were stabilized during FY2014, but must still be scheduled by hand and cannot go through the dynamic scheduler. Work on automating subarrays has been slower than planned, mostly because of staffing issues in the SSA software group, but we continue to schedule multiple subarray observing by hand quite effectively. This milestone will be carried forward as an exception for FY16.

RISKS & MITIGATION:

1. The risk to users of not having subarray observing automated is a slightly reduced chance of observing for priority C (filler) projects. Mitigation is to continue scheduling subarrays manually.
2. The impact on the observatory is that effort is used for manual scheduling that could be used on more important (but less urgent) tasks, while we don't have automation we will continue giving priority to manual scheduling.

POP MILESTONE # 3.4.43

NM OPS

Commission & document P-band spectroscopy and polarimetry for 2016 B

COST:			SCOPE:	
Budget Actual	Budget Planned		P-band spectroscopy and polarimetry commissioning and documentation in preparation for offering this in 2016B Shared Risk Observing (SRO).	
There are no changes in budget.			This milestone has been cancelled for FY2015	
SCHEDULE:			RISK & MITIGATION:	
Milestone	Schedule	Target	Risk	Mitigation
1 Spectroscopy Commissioning	9/30/2015	9/30/2015	1 Poor quality P-band spectroscopy	Retired.
2 Polarimetry Commissioning	9/30/2015	TBD	2 Poor quality P-band polarimetry	Encourage visiting RSRO staff to complete this task. Do not offer this capability in 2016B SRO.
3 Report released	9/30/2015	TBD		

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COST: N/A

SCOPE: The VLA low frequency receiver system is available for Stokes I continuum observations at P-band through the GO program. Use of the system for polarimetry and/or spectroscopy is offered through the RSRO Program.

SCHEDULE (This milestone has been cancelled for FY2015): P-band Spectroscopy commissioning has been completed by our external users. P-band polarimetry commissioning progress is lead by our external users as well, hence we do not control the target dates in which they will deliver this. The VLA Science Support Group continues to follow up this process.

RISKS & MITIGATION:

1. The risk of poor quality P-band spectroscopy is now retired.
2. The risk of poor quality P-band polarimetry is still active. To mitigate this risk, we will continue to encourage visiting RSRO staff to complete this work. We could reprioritize the work within the NRAO staff. However, the demand for this capability is not high, and redirecting NRAO staff would be at the expense of completing higher priority tasks. If this issue persists, we will have to accept the risk and not offer the capability as part of SRO in 2016B.

POP MILESTONE # 3.4.48

NM OPS

Commission and document use of switched power calibration

Cost
 Schedule
 Scope

COST: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; padding: 2px;">Budget Actual</th> <th style="width: 50%; padding: 2px;">Budget Planned</th> </tr> <tr> <td colspan="2" style="padding: 5px;">There are no changes in budget.</td> </tr> </table>			Budget Actual	Budget Planned	There are no changes in budget.		SCOPE: <p>An analysis of whether applying switched power calibration would be beneficial in the general case for VLA data concluded that it is not needed, and that our normal procedure of observing a phase calibrator is sufficient to track changes in system gain.</p>											
Budget Actual	Budget Planned																	
There are no changes in budget.																		
SCHEDULE: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%; padding: 2px;">Milestone</th> <th style="width: 33%; padding: 2px;">Schedule</th> <th style="width: 33%; padding: 2px;">Actual</th> </tr> <tr> <td style="padding: 2px;">1 Commissioning</td> <td style="padding: 2px;">9/30/2015</td> <td style="padding: 2px;">9/30/2015</td> </tr> <tr> <td style="padding: 2px;">2 Documentation</td> <td style="padding: 2px;">9/30/2015</td> <td style="padding: 2px;">Not needed</td> </tr> </table>			Milestone	Schedule	Actual	1 Commissioning	9/30/2015	9/30/2015	2 Documentation	9/30/2015	Not needed	RISK & MITIGATION: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; padding: 2px;">Risk</th> <th style="width: 50%; padding: 2px;">Mitigation</th> </tr> <tr> <td colspan="2" style="padding: 5px;">1 All risks are retired</td> </tr> </table>			Risk	Mitigation	1 All risks are retired	
Milestone	Schedule	Actual																
1 Commissioning	9/30/2015	9/30/2015																
2 Documentation	9/30/2015	Not needed																
Risk	Mitigation																	
1 All risks are retired																		

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QSU 4 FY2015

COST: N/A

SCOPE: Application of switched power calibration values can in principle be used to remove gain variations as a function of time to correct for unstable system gain. It also has the potential to decrease observing overhead and simplify the post-processing steps in several observing bands, if it can be shown that the system temperature derived from the calibration noise diodes is accurate.

An analysis of whether applying switched power calibration might be beneficial in the general case for VLA data concluded that it is not needed. The system gain is sufficiently stable on timescales of tens of minutes that our normal procedure of observing a phase calibrator every few minutes is sufficient to track changes in system gain.

Documenting the use of switched power calibration in CASA is therefore not needed.

SCHEDULE: Activities were completed according to plan. Milestone complete.

RISKS & MITIGATION:

I. All risks are retired

POP MILESTONE # 3.4.57

NM OPS

Tiger Team Maintenance Campaign to SC

Cost

Schedule

Scope

COST: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; padding: 2px;">Budget Actual</th> <th style="width: 50%; padding: 2px;">Budget Planned</th> </tr> <tr> <td colspan="2" style="padding: 5px;">There are no changes in budget.</td> </tr> </table>			Budget Actual	Budget Planned	There are no changes in budget.		SCOPE: <p>This campaign was originally planned for St. Croix. A lightning strike in 10/2014 at Mauna Kea site prompted a change from SC to MK.</p> <p>The purpose of the major maintenance visit is to perform overhauls and retrofits beyond the capabilities of the local site techs. Many of the VLBA Azimuth wheel assemblies need to be replaced to prevent the potential failure of the wheel axles.</p>										
Budget Actual	Budget Planned																
There are no changes in budget.																	
SCHEDULE: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%; padding: 2px;">Milestone</th> <th style="width: 33%; padding: 2px;">Schedule</th> <th style="width: 33%; padding: 2px;">Actual</th> </tr> <tr> <td style="padding: 5px;">I Maintenance completed</td> <td style="padding: 5px;">9/30/2015</td> <td style="padding: 5px;">10/30/2015</td> </tr> </table>			Milestone	Schedule	Actual	I Maintenance completed	9/30/2015	10/30/2015	RISK & MITIGATION: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; padding: 2px;">Risk</th> <th style="width: 50%; padding: 2px;">Mitigation</th> </tr> <tr> <td style="padding: 5px;">1. Az. Axle break prior to visit</td> <td style="padding: 5px;">Retired. Tiger Team is now on site.</td> </tr> <tr> <td style="padding: 5px;">2 TMT protest block access</td> <td style="padding: 5px;">We will have to accept this risk and cancel the trip.</td> </tr> </table>			Risk	Mitigation	1. Az. Axle break prior to visit	Retired. Tiger Team is now on site.	2 TMT protest block access	We will have to accept this risk and cancel the trip.
Milestone	Schedule	Actual															
I Maintenance completed	9/30/2015	10/30/2015															
Risk	Mitigation																
1. Az. Axle break prior to visit	Retired. Tiger Team is now on site.																
2 TMT protest block access	We will have to accept this risk and cancel the trip.																

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COST: The cost to delay the MK visit is negligible. The cost for the VLBA Major Maintenance visits are tracked in the NM Ops budget.

SCOPE: St. Croix was the site originally planned for FY15 major maintenance. A lightning strike in Oct. 2014 at the Mauna Kea site prompted a change from SC to MK when, even after extensive repairs to damaged systems, it was determined that some electronic components were behaving unreliably. This station is in daily use for USNO observations and we wanted to maintain optimal reliability for this station.

SCHEDULE: The original schedule for the visit was set for late September. However, the move from A to D array on the VLA and the VLA electrical maintenance work required some of the same people, so the trip to MK was delayed. The VLA electrical work was delayed due to personnel issues (electrical engineer resigned in July) and delays in contracting training for the electricians in preparation for the VLA work. It was more convenient to delay the VLBA Tiger team visit than to delay the other work.

RISK & MITIGATION: The container with the wheel assemblies and tools for the work arrived on the island on 9/18/2015. The Tiger Team arrived on site and began work on 10/19/15. No azimuth wheel failures occurred prior to their arrival. We are also holding off on scheduling rust mitigation work at the St. Croix station until the team is at the MK station so that USNO observations (which require one of either MK or SC) will not be impacted. We are carefully watching the TMT protest environment on the mountain, since, in the past, protesters have successfully blocked access to the road to the top of the mountain. In the worst case, the trip will have to be cancelled.

POP MILESTONE # 3.4.60

NM OPS

Commission and document PFB on LMT for 2016B

Cost
 Schedule
 Scope

COST: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; padding: 2px;">Budget Actual</th> <th style="width: 50%; padding: 2px;">Budget Planned</th> </tr> <tr> <td colspan="2" style="padding: 2px;">There are no changes in budget.</td> </tr> </table>			Budget Actual	Budget Planned	There are no changes in budget.		SCOPE: Collaborate with the Large Millimeter Telescope (LMT) staff to commission and document PFB observing at that telescope, for inclusion in HSA observations through the SRO program in 2016B											
Budget Actual	Budget Planned																	
There are no changes in budget.																		
SCHEDULE: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%; padding: 2px;">Milestone</th> <th style="width: 33%; padding: 2px;">Schedule</th> <th style="width: 33%; padding: 2px;">Target</th> </tr> <tr> <td style="padding: 2px;">1 Commissioning</td> <td style="padding: 2px;">9/30/2015</td> <td style="padding: 2px;">9/30/2016</td> </tr> <tr> <td style="padding: 2px;">2 Documentation</td> <td style="padding: 2px;">9/30/2015</td> <td style="padding: 2px;">9/30/2016</td> </tr> </table>			Milestone	Schedule	Target	1 Commissioning	9/30/2015	9/30/2016	2 Documentation	9/30/2015	9/30/2016	RISK & MITIGATION: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; padding: 2px;">Risk</th> <th style="width: 50%; padding: 2px;">Mitigation</th> </tr> <tr> <td style="padding: 2px;">1 PFB Observing not available in LMT</td> <td style="padding: 2px;">Continue to offer PFB Observing on the LMT as part of RSRO in 2016B</td> </tr> </table>			Risk	Mitigation	1 PFB Observing not available in LMT	Continue to offer PFB Observing on the LMT as part of RSRO in 2016B
Milestone	Schedule	Target																
1 Commissioning	9/30/2015	9/30/2016																
2 Documentation	9/30/2015	9/30/2016																
Risk	Mitigation																	
1 PFB Observing not available in LMT	Continue to offer PFB Observing on the LMT as part of RSRO in 2016B																	

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COST: N/A

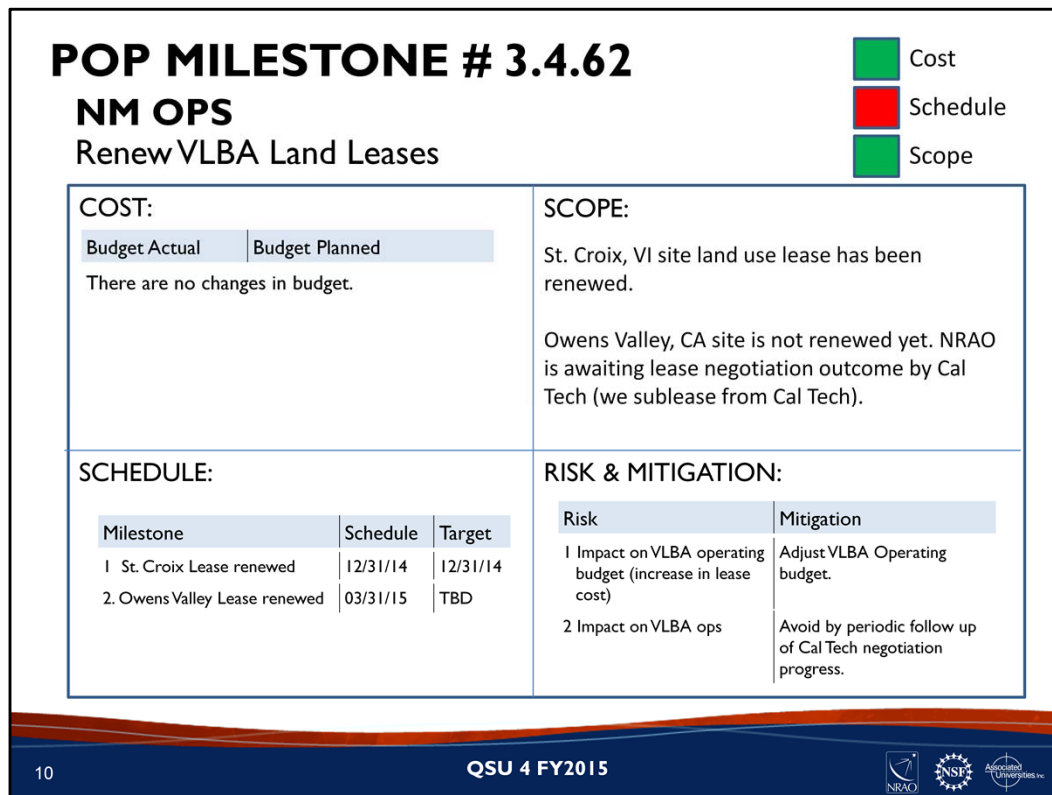
SCOPE: The Polyphase Filterbank (PFB) observing system provides sixteen 32 MHz channels with a fixed 2048 Mbps recording rate. The channels can be selected flexibly between two VLBA IF inputs. Channel placement is restricted to 32 MHz steps along the frequency axis.

This milestone tracks the collaboration with the Large Millimeter Telescope (LMT) staff to commission and document PFB observing at that telescope, for inclusion in HSA observations through the SRO program in 2016B.

SCHEDULE: With further experience of the VLB observing system on the LMT this year, it has become clear that its digital backend (DBE) and its recording system (both provided by Haystack Observatory) are not fully compatible with those of the VLBA, and that new hardware will be required to make it compatible. Further commissioning of this system has been put on hold while the LMT seeks funding to acquire this hardware. In the mean time, access to the LMT as part of the HSA will continue to be offered through the VLBA Resident Shared Risk Observing program for 2016B.

RISKS & MITIGATION:

- I. PFB Observing not available in LMT: Continue to offer as part of RSRO in 2016B.



COST: The lease cost at VLBA-OV has been small. The least cost at VLBA-SC increased significantly in Dec 2014.

SCHEDULE:

St Croix Lease: The lease has been signed by all parties. The lease is for 10 years with two 5 year options. Its cost increased from \$2,750/yr to \$40,000/yr.

Owens Valley Lease: Cal Tech negotiates this lease and it has been expired for 1 ½ years. Los Angeles Water and Power is the lease holder. NRAO sub leases from Cal Tech. Progress has been marginal in the last quarter, according to the Cal Tech Owens Valley Radio Observatory Executive Director. The target date is shown as TBD for now, due to the uncertainty regarding when the lease will be signed.

RISK & MITIGATION:

1. Cal Tech has leased Owens Valley, CA for a low yearly fee. The probability of a cost increase is low, but a budget adjustment would be needed if a cost increase occurs.
2. Impacts on other aspects of VLBA Operations are not likely to occur.

POP MILESTONE # 4.4.9

WV Operations

Repair culvert by interferometer



COST:

Labor Actuals	Expected
\$	\$
Material Actuals	Expected
\$	\$
Travel Actuals	Expected
\$	\$

SCOPE:

Internally funded project.

Project deferred to 2016, if funds are available

SCHEDULE:

Milestone	Schedule	Target
I Conduct Repair		

RISK & MITIGATION:

Risk	Mitigation
I Insufficient funds	Defer project repair until FY16, if funded.

COST: N/A

SCHEDULE: No work was conducted on this repair. No cost implications, it was deferred with the potential for cancellation, depending on funds availability.

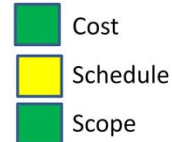
SCOPE: N/A

RISK & MITIGATION: N/A

POP MILESTONE # 6.5.27

Science Support & Research

SOS selection begins



COST:			SCOPE:	
Labor Actuals	Expected		Student Observing Support program selection begins.	
\$	\$			
Material Actuals	Expected			
\$	\$			
Travel Actuals	Expected			
\$	\$			
SCHEDULE:			RISK & MITIGATION:	
Milestone	Schedule	Target	Risk	Mitigation
I SOS selection begins	Q4 FY15	Q1 FY16	I None	I Chose to delay the launch of SOS selection to align NRAO NA proposal selection with ALMA.

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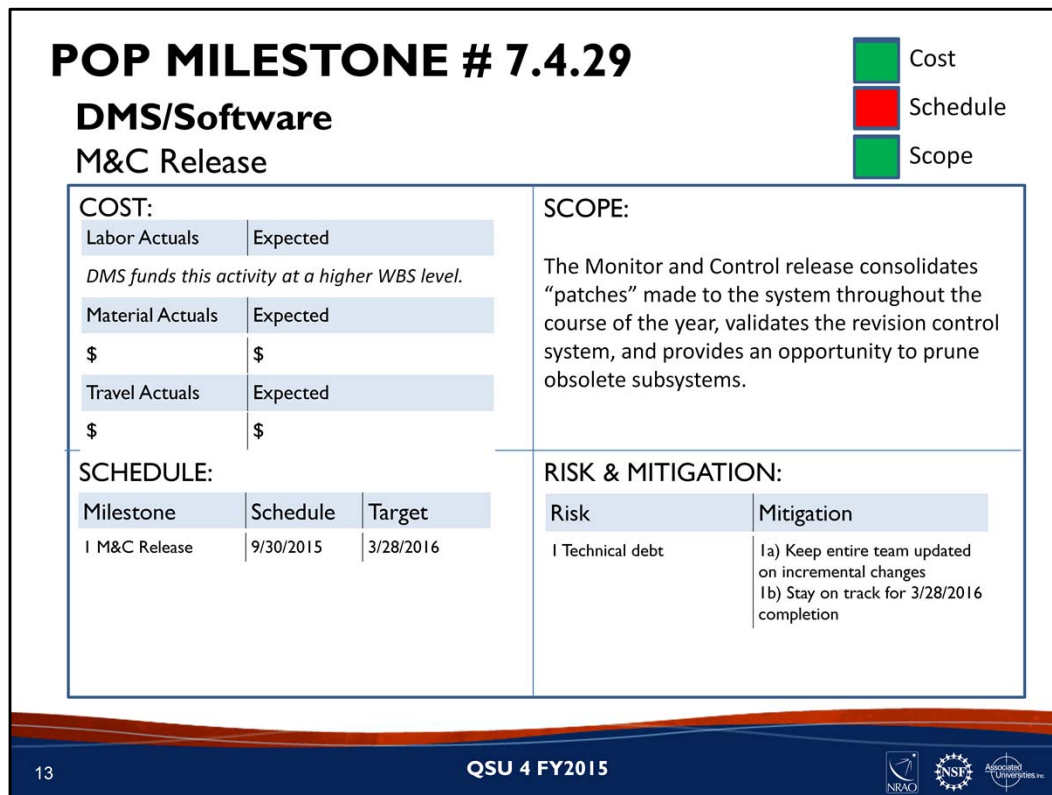


COST: N/A

SCHEDULE: Schedule delayed by a quarter.

SCOPE: N/A

RISK & MITIGATION: There is no risk here. We deliberately delayed launching the SOS selection process until the NRAO NA instruments completed their time allocation process in October, enabling us to better coordinate joint selection of ALMA and NRAO NA SOS proposals for support.



COST: DMS funds this activity at a higher WBS level. Costs are not tracked for this milestone.

SCHEDULE: Schedule was delayed due to the higher priority of cross-training and updating an operationally critical system in anticipation of one of the staff leaving NRAO. This milestone will be carried over as an exception for FY16.

SCOPE: Update the Monitor and Control system: The Monitor and Control release consolidates “patches” made to the system throughout the course of the year, validates the revision control system, and provides an opportunity to prune obsolete subsystems. No scope issues.

RISK & MITIGATION: Delaying the release does not have an immediate effect, but it does have an effect over time, in that further changes become more difficult and take longer. All the members of the team will be updated on each other’s incremental changes via regular weekly meetings, and the release will be rescheduled for completion by 3/28/2016.

POP MILESTONE # 7.4.34

DMS/Software

Operationalize Archive

Cost

Schedule

Scope

COST: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; border-bottom: 1px solid black;">Labor Actuals</td> <td style="border-bottom: 1px solid black;">Expected</td> </tr> <tr> <td colspan="2" style="padding: 2px;"><i>DMS funds this activity at a higher WBS level.</i></td> </tr> <tr> <td style="border-bottom: 1px solid black;">Material Actuals</td> <td style="border-bottom: 1px solid black;">Expected</td> </tr> <tr> <td style="border-bottom: 1px solid black;">\$</td> <td style="border-bottom: 1px solid black;">\$</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Travel Actuals</td> <td style="border-bottom: 1px solid black;">Expected</td> </tr> <tr> <td style="border-bottom: 1px solid black;">\$</td> <td style="border-bottom: 1px solid black;">\$</td> </tr> </table>			Labor Actuals	Expected	<i>DMS funds this activity at a higher WBS level.</i>		Material Actuals	Expected	\$	\$	Travel Actuals	Expected	\$	\$	SCOPE: Operationalize the New NRAO Archive and RPI prototyped in FY14.		
Labor Actuals	Expected																
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Material Actuals	Expected																
\$	\$																
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Risk	Mitigation																
1 Operational issues with existing NRAO archive	1 Use non-project resources when possible																
2 ALMA development needed	2 Use local database and SSO2 signon																

14
QSU 4 FY2015

COST: DMS funds this activity at a higher WBS level. Costs are not tracked for this milestone.

SCHEDULE: Schedule is delayed due to loss of key staff and underestimation of the integration work involved in moving from a prototype through testing to a production system. A testable NRAO Archive and separate Reprocessing Pipeline Interfaces (RPI) for the EVLA and ALMA was delivered in August 2015 and has undergone Science testing. The final delivery date has been rescheduled to 6/30/2016 (POP FY16 #7.4.20) with an intermediate goal of delivering a testable version by 3/31/2016 (POP FY16 #7.4.19).

SCOPE: Operationalize the New NRAO Archive and RPI prototyped in FY14. No scope issues.

RISK & MITIGATION: Operational issues with the existing NRAO archive may divert attention from this effort and delay the schedule. To the extent possible this work will be directed to non-project resources.

Access to ALMA data using the VO software may require agreement and development work by the ALMA project. Also, federated signon across NRAO and ALMA would require ALMA development effort. To address this, fallback plans include accessing the data from an NRAO copy of the ALMA database, and using authentication capabilities similar to the existing SSO2 until federation can be agreed and put in place.

POP MILESTONE # 7.4.44

DMS/Software

Create Observing Tools Architecture

Cost
 Schedule
 Scope

COST: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; border-bottom: 1px solid black;">Labor Actuals</td> <td style="border-bottom: 1px solid black;">Expected</td> </tr> <tr> <td colspan="2" style="padding: 2px;"><i>DMS funds this activity at a higher WBS level.</i></td> </tr> <tr> <td style="border-bottom: 1px solid black;">Material Actuals</td> <td style="border-bottom: 1px solid black;">Expected</td> </tr> <tr> <td style="border-bottom: 1px solid black;">\$</td> <td style="border-bottom: 1px solid black;">\$</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Travel Actuals</td> <td style="border-bottom: 1px solid black;">Expected</td> </tr> <tr> <td style="border-bottom: 1px solid black;">\$</td> <td style="border-bottom: 1px solid black;">\$</td> </tr> </table>			Labor Actuals	Expected	<i>DMS funds this activity at a higher WBS level.</i>		Material Actuals	Expected	\$	\$	Travel Actuals	Expected	\$	\$	SCOPE: Review the current design of user facing tools, in particular the PST, PHT, and OPT. Develop an architecture for improvement.		
Labor Actuals	Expected																
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Milestone	Schedule	Target															
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Risk	Mitigation																
1 Continuing user frustration with tools	1 Prioritize/address key issues																
2 Focus on New Archive & RPI	2 Accept																

15
QSU 4 FY2015

COST: DMS funds this activity at a higher WBS level. Costs are not tracked for this milestone.

SCHEDULE: Schedule was delayed due to lack of clear input on requirements. Schedule is TBD. An initial workshop was held in September 2014 to gather ideas for reorganizing the toolset. The consensus opinion was that moving towards an ALMA-like toolset for proposing, reviewing, approving, and setting up observations might be possible. More detailed requirements are being developed evaluate the practicality of this approach. A proposed model with additional detail is being circulated and work is underway to solidify requirements and a roadmap for development. This work has been rescheduled for delivery 3/31/2016 as an FY16 POP goal (POP FY16 # 7.4.32).

SCOPE: Review the current design of user facing tools, in particular the PST, PHT, and OPT. Develop an architecture for improvement.
No scope issues.

RISK & MITIGATION: The Users Committee and other similar groups have pointed out deficiencies in the toolset. These have been prioritized by the Committee and evaluated by the development team. High priority/low effort items will be implemented in the current software.

Focus on New Archive and RPI will continue to delay this, as the resources required for development and testing are for the most part the same people needed for providing input to and developing the architecture/direction for this toolset. However, the creation and filling of the DMS architect role last year will help alleviate the design workload, and the completion of archive work in 2QFY16 will free resources to start on tool refactoring and development when the design is completed.

POP MILESTONE #10.3.2

EPO: STEM Education

Curriculum development for SJS web portal

Cost

Schedule

Scope

<div>COST:</div> <table> <tr> <td>Labor Actuals</td> <td colspan="2">Expected</td> </tr> <tr> <td>\$</td> <td colspan="2">\$</td> </tr> <tr> <td>Material Actuals</td> <td colspan="2">Expected</td> </tr> <tr> <td>\$</td> <td colspan="2">\$</td> </tr> <tr> <td>Travel Actuals</td> <td colspan="2">Expected</td> </tr> <tr> <td>\$</td> <td colspan="2">\$</td> </tr> </table>			Labor Actuals	Expected		\$	\$		Material Actuals	Expected		\$	\$		Travel Actuals	Expected		\$	\$		<div>SCOPE:</div> <div>Seven modules on already online.</div>		
Labor Actuals	Expected																						
\$	\$																						
Material Actuals	Expected																						
\$	\$																						
Travel Actuals	Expected																						
\$	\$																						
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I Curriculum posted on SJS web portal	06/30/15	01/01/16																					
Risk	Mitigation																						
I Loss of key personnel	Accept, backfill ASAP																						

16

QSU 4 FY2015

NRAR

NSF

Arizona State University

COST: SJS received a no-cost extension.

SCHEDULE: Seven of the modules are online, a few more are still in production and will be in place by the new year, Jan 2016.

SCOPE: As feedback continues, scope for curriculum need is scaled.

RISK & MITIGATION: Loss of key STEM Ed personnel – accept, use existing staff or engage contract writer.

POP MILESTONE #10.3.6

EPO: STEM Education

Create VLA Visitor/Edu Center exhibit theme plan

COST:			SCOPE:	
Labor Actuals	Expected		An exhibit theme plan will be produced on a new PMD-driven timeline to the scope of the revised plan. Experimental exhibit copy currently on display inside VC.	
\$	\$			
Material Actuals	Expected			
\$	\$		Milestone cancelled for FY2015	
Travel Actuals	Expected			
\$	\$			
SCHEDULE:			RISK & MITIGATION:	
Milestone	Schedule	Target	Risk	Mitigation
1			1	
2			2	
3			3	

17

QSU 4 FY2015



COST: N/A

SCOPE: Visitor Center plan as presented in Q1 was rejected due to unacceptable cost, schedule, and scope. All FY 2015 POP milestones now canceled. New project plan currently in PMD, new milestones appear in FY 2016 POP.

SCHEDULE: N/A

RISK & MITIGATION: N/A

POP MILESTONE #10.3.10

EPO: STEM Education

Complete plan for recruitment/training VLA Visitor Center volunteers

COST:			SCOPE:	
Labor Actuals	Expected		A volunteer plan will be produced on a new PMD-driven timeline to the scope of the revised Visitor Center plan.	
\$	\$			
Material Actuals	Expected			
\$	\$		Milestone cancelled for FY2015	
Travel Actuals	Expected			
\$	\$			
SCHEDULE:			RISK & MITIGATION:	
Milestone	Schedule	Target	Risk	Mitigation
1			1	
2			2	
3			3	

COST: N/A

SCOPE: Visitor Center plan as presented in Q1 was rejected due to unacceptable cost, schedule, and scope. All FY 2015 POP milestones now canceled. New project plan currently in PMD, new milestones appear in FY 2016 POP.

SCHEDULE: N/A

RISK & MITIGATION: N/A

POP MILESTONE #10.3.16

EPO: News & Public Information

Update public website to Joomla!3

Cost

Schedule

Scope

COST: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <th style="width: 50%;">Labor Actuals</th> <th style="width: 50%;">Expected</th> </tr> <tr> <td>\$</td> <td>\$</td> </tr> <tr> <th>Material Actuals</th> <th>Expected</th> </tr> <tr> <td>\$</td> <td>\$</td> </tr> <tr> <th>Travel Actuals</th> <th>Expected</th> </tr> <tr> <td>\$</td> <td>\$</td> </tr> </table>	Labor Actuals	Expected	\$	\$	Material Actuals	Expected	\$	\$	Travel Actuals	Expected	\$	\$	SCOPE: <p style="margin-top: 5px;">SQL search scripts, unexpected iOS updates, and Facebook plugins are not compatible.</p>					
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\$	\$																	
Material Actuals	Expected																	
\$	\$																	
Travel Actuals	Expected																	
\$	\$																	
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2 Visitor complaints	Accept																	
3 Functionality loss	Seek workarounds																	

19
QSU 4 FY2015

COST: EPO funds this activity at a higher WBS level. Costs are not tracked for this milestone.

SCHEDULE: EPO WebDev announced her resignation while a NM-based WebDev was onsite in CV. He called emergency status on the upgrade, and it was finally delivered. However, functionality was lost due to incompatibility between new Joomla and certain plugins. With loss of webdev, and no Joomla expertise in house, and no funds available to hire a contractor, the complete conversion has not been possible.

SCOPE: Joomla's "one-click" upgrade was false advertising, and functionality was lost due to SQL updates, iOS updates, and Facebook updates that have created incompatibilities with Joomla3. The task of complete conversion is much larger than budgeted.

RISK & MITIGATION: The loss of key personnel has been across departments, with the resignation of the EPO WebDev and promotions of both NRAO WebDevs with no backfill. EPO is hiring a new WebDev, and redesigning the public website in a more stable, more broadly used platform to reduce this risk. So far, we have not had online visitors complain about the issues we have noted, but there is not much we can do to fix them without Joomla resources. The Facebook issue has a workaround.

POP MILESTONE # 12.3.2

Office of Diversity & Inclusion

Review diversity portfolio/programs, plans to establish metrics



COST:

Labor Actuals	Expected
\$	\$
Material Actuals	Expected
\$	\$
Travel Actuals	Expected
\$	\$

SCOPE:

Newly appointed ODI Director has started reviewing portfolio/programs and has included establishment of metrics in FY16 POP milestone deliverable.

SCHEDULE:

Milestone	Schedule	Target
I Review portfolio, programs, plans to establish metrics	06/30/2015	03/31/2016

RISK & MITIGATION:

Risk	Mitigation
1	
2	
3	

COST: N/A

SCOPE:N/A

SCHEDULE: Newly appointed ODI Director has started reviewing portfolio/programs and has included establishment of metrics in FY16 POP milestone deliverable.

RISK & MITIGATION: N/A

POP MILESTONE # 12.3.3

Office of Diversity & Inclusion

Host external diversity review committee, coordinate logistics of NAC III workshop, prepare budget

Cost

Schedule

Scope

COST:

Labor Actuals	Expected
\$	\$
Material Actuals	Expected
\$	\$
Travel Actuals	Expected
\$	\$

SCOPE:

NAC III Workshop and budget preparation completed. External Review milestone will be cancelled due to staffing changes within the ODI.

SCHEDULE:

Milestone	Schedule	Target
1 NACIII Workshop	9/30/2015	9/30/2015
2 Prepare Budget	9/30/2015	9/30/2015
3 External Review	9/30/2015	Cancelled

RISK & MITIGATION:

Risk	Mitigation
1	
2	
3	

21

QSU 4 FY2015

NRAO

NSF

Association of Universities Inc.

COST: N/A

SCOPE: These three goals/milestones should have been separated. The NACIII Workshop was held at Howard Univ on Aug 29, 2015 and was a great success. The ODI budget was prepared by the incoming ODI Director and Head of Budget. The external diversity review did not take place due to the departure of the ODI Program Manager. The new ODI Director will be responsible for setting new milestones moving forward. The external diversity review will be cancelled to allow the ODI Director time to transition into this role and assess current programs.

SCHEDULE: N/A

RISK & MITIGATION: N/A

POP MILESTONE # 13.7.11

Human Resources

Update WFM and Staffing

Cost

Schedule

Scope

COST: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 2px;">Labor Actuals</td> <td style="padding: 2px;">Expected</td> </tr> <tr> <td style="padding: 2px;">\$</td> <td style="padding: 2px;">\$</td> </tr> <tr> <td style="padding: 2px;">Material Actuals</td> <td style="padding: 2px;">Expected</td> </tr> <tr> <td style="padding: 2px;">\$</td> <td style="padding: 2px;">\$</td> </tr> <tr> <td style="padding: 2px;">Travel Actuals</td> <td style="padding: 2px;">Expected</td> </tr> <tr> <td style="padding: 2px;">\$</td> <td style="padding: 2px;">\$</td> </tr> </table>			Labor Actuals	Expected	\$	\$	Material Actuals	Expected	\$	\$	Travel Actuals	Expected	\$	\$	SCOPE: Update/revise WFM and Staffing Plans		
Labor Actuals	Expected																
\$	\$																
Material Actuals	Expected																
\$	\$																
Travel Actuals	Expected																
\$	\$																
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1 Update WFMP	3/31/2015	Q2 FY16															
Risk	Mitigation																
	Staffing Summit scheduled 9/14-9/19/15 in SOC with stakeholders. Upon completion of the meeting, WFMP will be updated																

22
QSU 4 FY2015

COST: N/A

SCOPE: Increased to include feedback from Division/Department Heads from Strategic Planning & Staffing Summit in mid-September.

SCHEDULE: Still in the process of approving staffing and budget requests from the summit. This milestone will be carried forward as an exception for FY16 (Q2).

RISK & MITIGATION: N/A

A strategic staffing summit was held September 14- 16, 2015 to bring stakeholders together to review FY15 and FY16 Staffing data. Facilitated discussions regarding FY17 – FY20 staffing needs to include new initiatives took place. We will incorporate discussions regarding succession planning, skills, skill gaps, new talent and effective recruitment strategies into the discussion. This was an Observatory-wide project where Division Heads who have responsibilities in carrying out mission critical work was involved in the strategic planning, prioritization of initiatives and staffing discussions.

POP MILESTONE #14.1.4

Communications

Publish 2014 NRAO Annual Report



Cost



Schedule



Scope

COST:

Labor Actuals	Expected
\$	\$
Material Actuals	Expected
\$	\$
Travel Actuals	Expected
\$	\$

SCOPE:

SCHEDULE:

Milestone	Schedule	Target
1		
2		
3		

RISK & MITIGATION:

Risk	Mitigation
1	
2	
3	

COST: N/A

SCOPE: N/A

SCHEDULE: An additional four weeks was required for internal review, delaying publication to 27 October 2015.

RISK & MITIGATION: N/A

POP MILESTONE # 15.6.1

Administration

Index & Box ALMA construction Files

COST:

Labor Actuals	Expected
\$	\$ In house labor
Material Actuals	Expected
\$	\$ Normal M&S costs
Travel Actuals	Expected
\$	\$

SCOPE:

ALMA construction records are stored in "cube-ville" in the Admin wing. The Effort was intended to free up space and establish permanent storage. The employee designated to handle this project left before his contract was up and did not start the project. The space is not needed at this time.

Milestone is cancelled.

SCHEDULE:

Milestone	Schedule	Target
1		
2		
3		

RISK & MITIGATION:

Risk	Mitigation
1	
2	
3	

COST: N/A

SCOPE: N/A

SCHEDULE: The primary focus of the NRAO team has been to complete the ALMA Construction Report and prepare for the capitalization of the project. At present the materials are adequately stored and there is no immediate need for the space. The project plan will be revisited in Q1 2016 and it will be determined whether to maintain the present storage or move the materials elsewhere. Milestone is cancelled.

RISK & MITIGATION: N/A

POP MILESTONE # 15.6.13

Administration

Collaborate with UVA and NRAO software imaging designers to gauge interest in medical imaging conference

COST:

Labor Actuals	Expected
\$ 0	\$ 0
Material Actuals	Expected
\$ 0	\$ 0
Travel Actuals	Expected
\$ 0	\$ 0

SCOPE:

Milestone cancelled – no interest from UVA at this time

SCHEDULE:

Milestone	Schedule	Target
1		
2		
3		

RISK & MITIGATION:

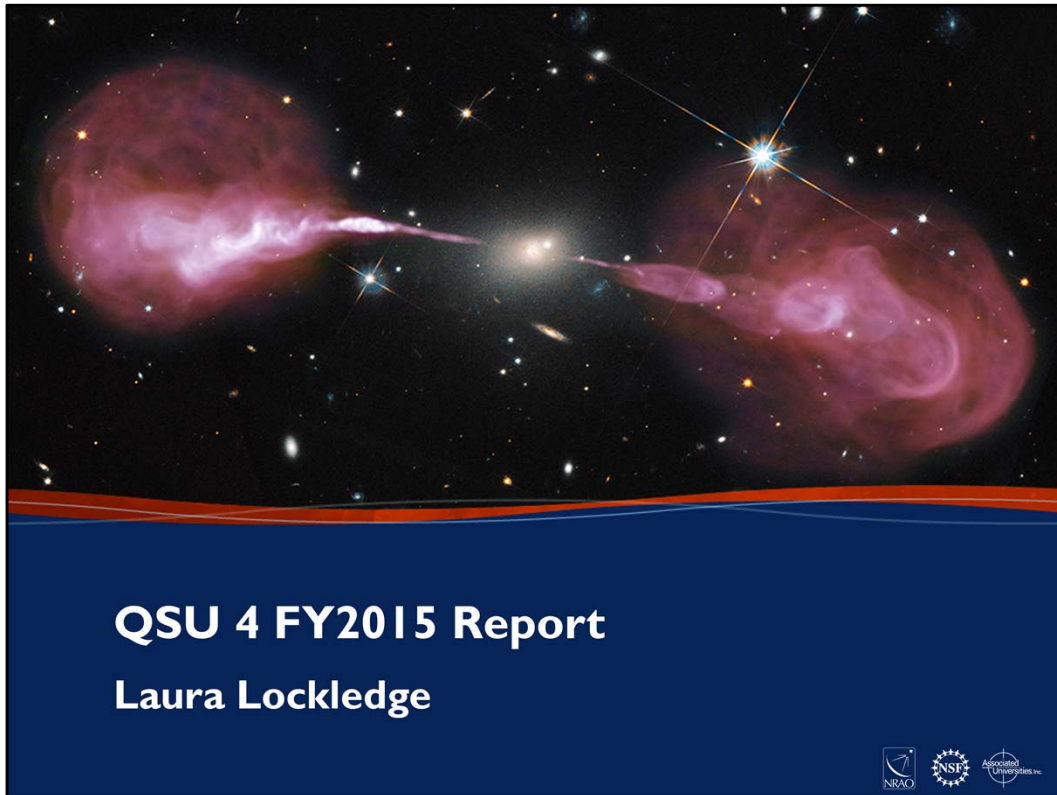
Risk	Mitigation
1	
2	
3	

COST: N/A

SCOPE: N/A

SCHEDULE: Jeff Pixton discussed this idea with UVA and found no interest at this time to plan and host a conference. Milestone cancelled.

RISK & MITIGATION: N/A



Q4 FY15 Summary

- Overall Status
 - Benefits ended year at 34.9% final rate, budgeted rate was 35%.
 - ICC currently over-recovered for actual expenses. Very small over-recovery when factoring in Open Commitments
- NRAO Ops
 - Budget includes distribution of FY15 over-guidance & carry-forward items.
 - Reserve for FY16 carried in Admin. (Infrastructure reserve).
 - Met external revenue targets.
 - NRAO Ops 99.9% expended against budget including open commitments

FY15 YTD by Major WBS Category

NRAO Ops – Q4

	FY15 POP Budget	FY15 Rev. Budget	FY15 YTD Actual	YTD % Rev Budget
NSF	40,000	43,140	43,140	100.0
Telescope Time Sale	2,391	1,915	1,881	98.2
Carryforward/Other	1,750	4,908	5,027	102.4
Total CSA-I Revenues	44,141	49,963	50,048	100.2
Telescope Ops	17,966	19,397	18,772	96.8
Development	2,787	2,759	2,622	95.0
Science Ops	5,475	5,861	5,691	97.1
Admin Services	14,255	15,685	15,428	98.4
Director's Office	3,488	3,635	3,418	94.0
FY15 , Total	43,970	47,337	45,931	97.0
FUND SOURCE ADJUSTMENTS			(40)	
FY15 NRAO OPS NET	171	2,626	4,157	
OPEN COMMITMENTS			1,388	
Carryforward to FY16 Operations			2,769	

- Fund source adjustments includes benefits credit.
- High open commits includes GBT & NM track items (see exceptions)

FY15 YTD by Major WBS Category

ALMA Ops – Q4

	FY15 POP Budget	FY15 Rev. Budget	FY15 YTD Actual	YTD % Rev Budget
Telescope Ops	23,607	25,919	23,185	89.5
Development	5,626	8,081	3,615	44.7
Science Ops	6,627	6,973	5,729	82.2
Admin Services	4,460	4,460	4,749	106.5
Director's Office	2,949	3,367	2,931	87.1
FY15 , Total	43,269	48,800	40,209	82.4
Development Reserve	1,231			
Open Commits	4,406		3,521	
C/F For FY15 Fuel		1,800		
C/F for Future Years	4,950	3,256		
All ALMA Resources	53,856	53,856	43,730	81.2
FUND SOURCE ADJUSTMENTS			(12)	
ALMA, NET			43,718	
Net vs. Budget			10,138	

- Development Reserve & Open Commitments are reflected in the revised budget.
- See analysis of Net, next page

FY15 ALMA Ops Net Analysis

FY15 NET vs. Budget		10,138
less Canadian Support, not passed through		(1,676)
Actual Residual		8,462
FY15 Fuel Reserve		(1,800)
PPS Reserve		(1,000)
Development Reserve, Committed	(2,402)	
Development Reserve, Uncommitted	(1,986)	
Development Reserve		(4,388)
Construction Warranty Reserve		(845)
Carryforward to FY16 Operations		429

FY15 YTD by Major WBS Category

ICC – Q4

	FY15 POP Budget	FY15 Rev. Budget	FY15 YTD Actual	YTD % Rev Budget
Telescope Ops	68	69	98	142.0
Development	779	787	711	90.3
Science Ops	1,722	1,744	1,806	103.6
Admin Services (Gross)	10,911	11,170	10,748	96.2
Director's Office	1,367	1,368	1,261	92.2
FY15 Total, Non CSA Sources	14,847	15,138	14,624	96.6
Admin Recoveries (CSA's)	(13,654)	(13,945)	(13,532)	97.0
External Recovery	(1,193)	(1,193)	(1,371)	114.9
FY15 NET	(1)	-	(279)	





- Status: Over-recovered
- Excludes open commitments of \$245K
- External recovery ahead primarily due to ALMA-C

FY15 Budget Exceptions not related to Overguidance

- FY15 Diversity expenditures moved from Unallowable to program funds, FY15 spend was \$175K.
- Additional expenditures undertaken in Q4 based on availability of funds. (Reflected in Open Commitments)
 - Purchase of ballast/rails for NM track \$200K
 - Purchase of steel for GB track \$245K

FY15 Budget Exceptions

Overguidance Funding Approach

- Review POP & fund items id'd as next to be done/what had to be given up 
- Strategically position GB & VLBA for their post-CSA life
 - * invest in new business development
 - * invest in key infrastructure maintenance items
 - * secure key personnel/skills
- Prepare for initiatives of the new contract
 - * Position development efforts for VLA NBT 
 - * Diversity Initiatives 
- Pre work on VLA infrastructure to enable move up of VLA NBT
- Matters arising 

FY15 Exceptions

Overguidance Funding Items: NRAO Ops

Item	FY15 Base Cost	FY16 Base		Base +	Total Cost
		Base +	Cost		
Reserve			265,000	344,500	344,500
FY16 Raises 3%			574,035	746,245	746,245
FY16 Page Charge Support			64,000	83,200	83,200
GB Infrastructure	100,000	137,000			137,000
VLA Infrastructure: 3 ACU's	112,800	146,640	-	-	146,640
Next Gen VLA Start Up	200,000	274,000	300,000	411,000	685,000
CDL Research Engineer Start Up (100K equip + 1 tech)	95,563	131,064	235,895	323,530	454,594
NAC/NINE FY15 & 16	49,600	68,026	53,600	73,512	141,539
STEM Education Lead (4/12 in 2015)	33,750	46,288	103,275	141,642	187,930
FY16 NanoGRAV Revenue Timing			210,000	210,000	210,000
Total	591,713	803,018	1,805,805	2,333,629	3,136,648

FY15 Exceptions

Overguidance Funding Items: ICC

ICC Expenses	FY15 Base Cost	FY16 Base Cost	Total Cost
ICC Increment	177,514	478,741	656,255
FY16 Raises		196,641	196,641
Operational Rollback	44,000	41,000	85,000
HR Head	47,250	144,200	191,450
CDL Head (8 months in 2016)		157,500	157,500
Maintain Env Safety (ESS) Adjustments		16,000	16,000
Contingency for Senior Hires		9,664	9,664
ICC Net	86,264	-	(86,264)



POP MILESTONE # 4.4.2

WV Operations; GBT Development

Commissioning of ARGUS Receiver



COST:

Labor Actuals	Expected
\$	\$
Material Actuals	Expected
\$	\$
Travel Actuals	Expected
\$	\$

SCOPE:

Update for Exception Report

The new Dates are: 1. Receive ARGUS from Stanford: November 15, 2015 2. Complete NRAO lab tests: December 31, 2015 3. Install ARGUS on GBT: January 15, 2016 4. Complete basic commissioning: February 28, 2016

SCHEDULE:

Milestone	Schedule	Target
1 Commissioning of ARGUS Rx	3/31/15	2/28/16
2		
3		

RISK & MITIGATION:

Risk	Mitigation
1	
2	
3	

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QSU 4 FY2015



COST: N/A

SCOPE: N/A

SCHEDULE: The project executed a Change Request for schedule extension because the Stanford led collaboration is late in their integration process. They encountered technical problems that made the integration take longer than originally planned, delaying the delivery of the receiver to NRAO.

RISK & MITIGATION: N/A



Human Resources/Budget

NRAO Planning Activities

- A 3 day strategic & staffing planning meeting was held in Socorro, Sept. 14-16.
- 37 participants including AD's, deputies, key department heads
- Goals:
 1. Articulate & Refine the Strategic Direction of NRAO & Affiliated Activities
 2. Define & articulate skills/staffing needed to achieve the goals.
 3. Provide AD's and DH's with the tools & information needed to prepare staffing plans and set divisional goals.
 4. Enable strategic planning at the departmental level.

Human Resources/Budget

NRAO Planning Activities

Outcomes

- 5 Cross Observatory Goals & next steps identified
- Key positions proposed and preliminary review

Next Steps

- Communication – ongoing, draft document underway
- Observatory Staffing (Workforce management) plan – ongoing, draft document underway



EPO: STEM Education



Your Very Large Array

You are standing inside the world's most powerful *radio astronomy* telescope, an array of 27 giant dish antennas aimed at the Universe surrounding our planet Earth.

Since its first observations in 1975, the Very Large Array has scanned the skies to learn cosmic secrets invisible to even the most powerful optical telescopes.

The VLA shows us the vast chaos caused by black holes, maps ice on the scorched planet Mercury, watches suns form inside their dusty gas cocoons, and even found a billion light year hole in the Universe!

This telescope was funded by the National Science Foundation, and anyone in the world can use it – if your science case is strong enough.

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QSU 4 FY2015

NRAO NSF Associated Universities Inc.

Total visitor numbers at Green Bank: 18,145 visitors

Total visitor numbers at VLA: 7353 visitors

Huge Open House at the Green Bank site: 825 participants, beat previous record by 100 people! Plus 61 volunteers – incredible support!

Space Morning at the Parkview Elementary School: entire student body plus over a dozen NRAO staff volunteers!

New temporary exhibit panels installed in the VLA Visitor Center to test story flow.



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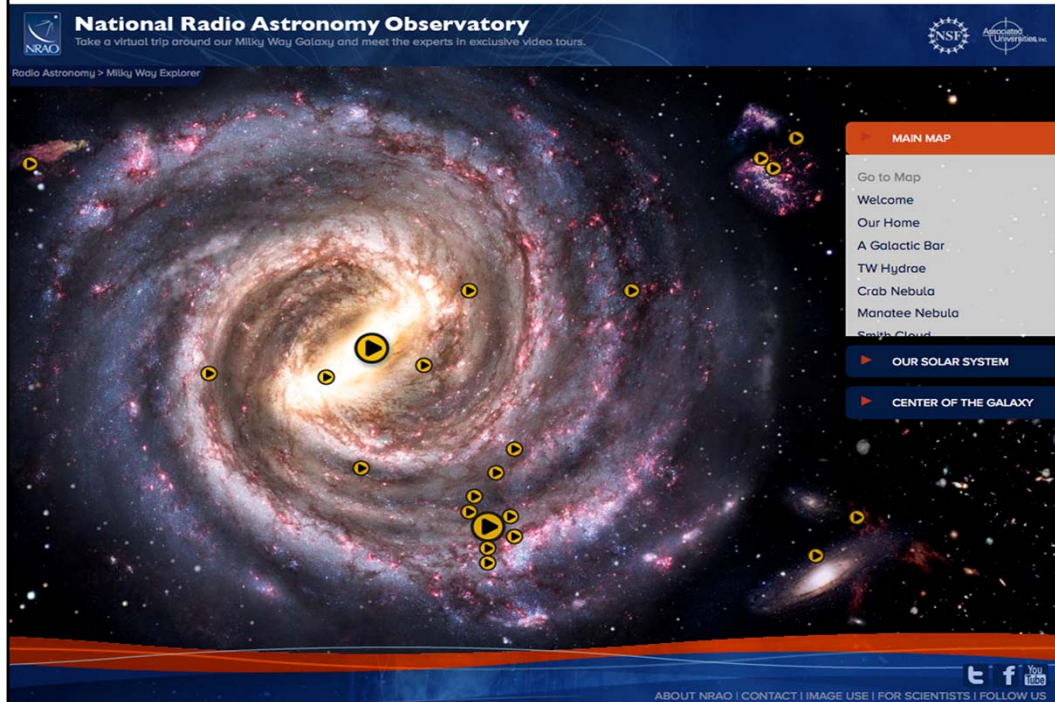
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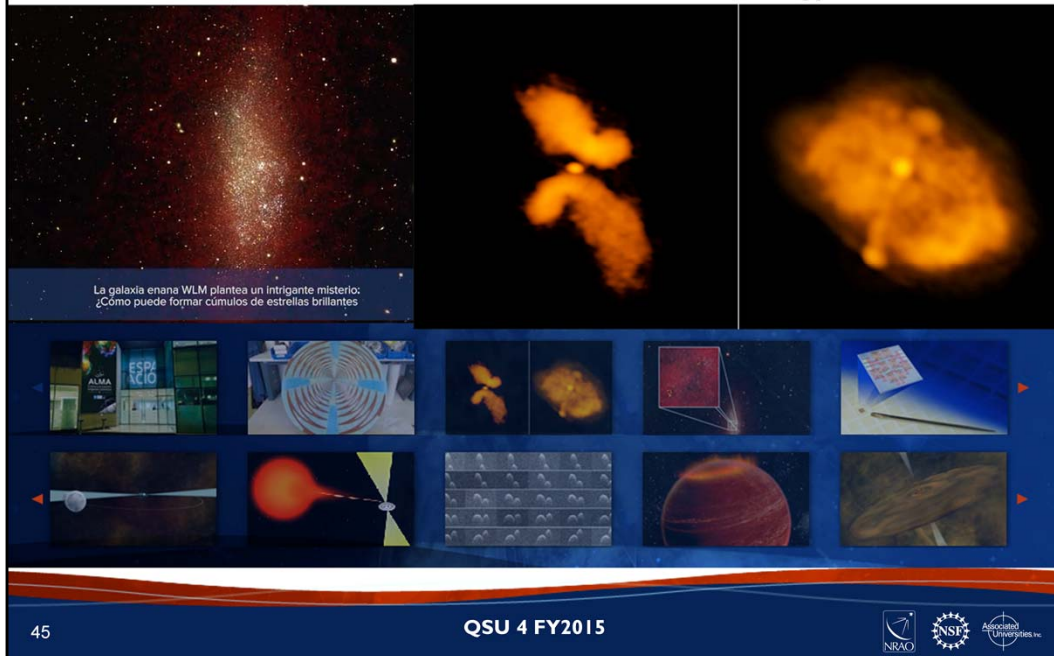
EPO: STEM Education



New role model-hosted Milky Way Explorer videos about Local Group launched this quarter: <https://public.nrao.edu/explorer/milkyway>

EPO: News and Public Info

Press releases covered science and technology



Q4 News Productions

13 Press releases in Q4 (4 GBT, 4 ALMA, 3 VLA, 2 CDL/HQ)

2 tip sheet items (More stories were given full press release treatment in 2015)

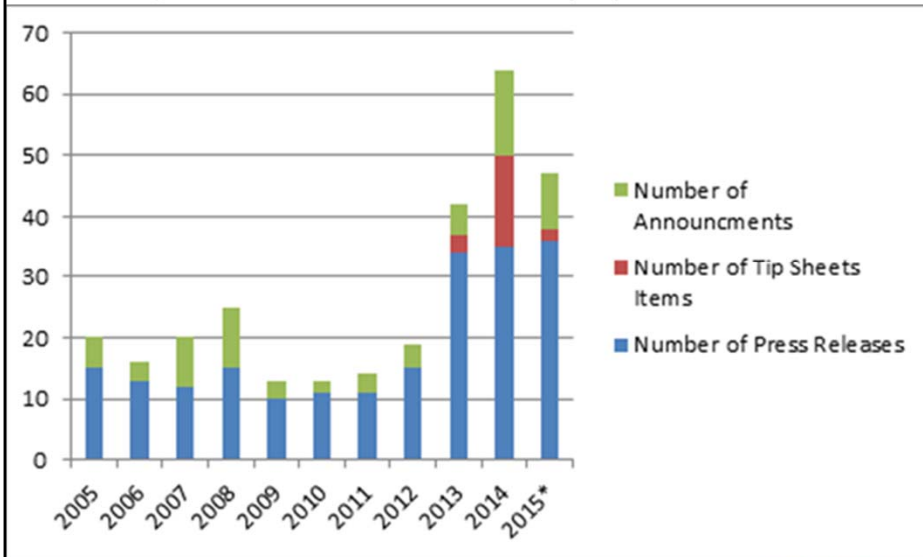
3 announcements

News animations and videos: <https://vimeo.com/138093800> and in Spanish!

<https://vimeo.com/138117125>

EPO: News and Public Info

Ending FY w/Record Number (45) of Press Releases!



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QSU 4 FY2015



FY 2015 News Production Totals

45 press releases for the FY2015 (2 CDL, 2 VLBA, 9 GBT, 12 VLA, 20 ALMA)

2 tip sheet items (More stories were given full press release treatment in 2015)

14 announcements – many of which received media coverage

EPO: News and Public Info



Stop | Explorer Home

Kelley Hess @K-Hesser 3d
Just downloaded 3x25 Mb archival @VLArray data sets. Took ~12 secs. I <3 old school data sets. They're so small, cute, and easy to deal with!

Action Scientist @geoffnotkin
Major #BucketList day at @VLArray @TheNRAO #RadioAstronomy #science #JodieFoster #SpaceTweeps



Emily Indebetouw describes the gigantic star forming region inside the Large Magellanic Cloud

Jennifer Jackson
Meet Jennifer Jackson, a Technical Specialist who builds the complex cartridges that hold the state-of-the-art receivers inside our radio telescopes.




9/25/15, 10:51 AM



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QSU 4 FY2015



First suite of 12 role model videos now online! <https://public.nrao.edu/people>
 18% increase in Twitter followers
 118,506 visitors reached this quarter by [Facebook.com/TheNRAO](https://www.facebook.com/TheNRAO)
 Werner Herzog films documentary about Green Bank



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*The National Radio Astronomy Observatory is a facility of the National Science Foundation
operated under cooperative agreement by Associated Universities, Inc.*