



Owens Valley, California

# NRAO Status Report



Hancock, New Hampshire

Brewster, Washington

North Liberty, Iowa

Jon Romney

EVN TOG Meeting  
2012 June 28

Los Alamos, New Mexico

Kitt Peak, Arizona

Ple Town, New Mexico

Fort Davis, Texas

St. Croix, Virgin Islands



# RDBE / PFB Operational for Subset of Observations

## Operational status taking hold.

Projects requiring 2-Gbps data to achieve scientific success observed routinely, although on a shared-risk basis.

Two key-science monitoring projects beginning “transitional piggyback” phase, next 2 runs observed with legacy/upgrade systems in parallel.

## PIs prepare schedules.

Updated SCHED documentation available.

Overall, scheduling seems to be working quite well.

## Very positive feedback from some PIs.

L. Loinard: Theoretical noise level achieved; source detected.

J. Miller-Jones: A great success; in-beam calibrator worked well.

A. Marscher: Successfully spliced 512 & 2048 data.

## Operators making effective use of monitor and alert screens.

## Mark 5C disk-drive failures limiting throughput.



# Recently Encountered Problems

**Most have been diagnosed and fixed quickly**

Frequent bank switch failures.

Occasional RDBE personality load failures.

Operators' displays and alerts not always updating properly.

**Ongoing issue**

**Mark 5C disk-drive failures limiting throughput.**

Remediation effort by Conduant and Western Digital completed;  
very few failed drives detected and replaced.

New failures continue to occur in drives with suspect SNs.

Staffing limitations currently constraining adequate in-house media management and testing.





# RDBE / DDC Personality Under Development

## Current version

4 sub-bands, individually selectable from either input IF.

Bandwidths: 128 / 64 / 000 / 1 MHz.

Band-edge frequencies specifiable to 15,625-Hz precision.

Output rate proportional to overall bandwidth.

## Tests to date ...

... revealed substantial aliasing of out-of-band signals, with increasing magnitude at narrower bandwidths.

Now believed to be solved.

Results pending from most recent test.



# HSA Issues from Pending Call for Proposals

## NRAO Semester 2013A CfP

... to be issued July 9; deadline August 1.

## Phased VLA is back!

EVLA's Widar correlator supports functions equivalent to VLBA's RDBE.

Data recorded on Mark 5C, in VDIF format.

4 channels, as 2 sub-band polar pairs.

Four channelizations offered in CfP:

Channel Bandwidth	VLA Data Rate	VLBA Data System	VLBA Data Rate	Notes
128	2048	DDC	2048	Shared risk
64	1024	DDC	1024	Shared risk
32	512	PFB	2048	
16	256	Legacy	512	



# HSA / Global Issues

## All other HSA stations (GB/EB/AR) ...

... have acquired VLBA RDBE units and Mark 5C recorders.

... have [had] to adapt station control systems to operate new instrumentation.

VLBA uses extended version of EVLA control system; generally not suitable for other stations.

GBT adapted 'Astrid'; available with same modes as VLBA.

Effelsberg adapting Field System: test pending on July 4.

Arecibo had initial success with manual operation in RDBE/Mark5C commissioning test last June; no recent information.

## Global Network stations: current status from this meeting!

## New instrumentation imposes new tuning limitations

RDBE/PFB particularly inflexible.

VLBA first-LO system exacerbates situation.

New synthesizer under development, should alleviate situation once available.

New Global agreements on standard frequencies may be required.

Subject for another meeting!





Owens Valley, California



Brewster, Washington



North Liberty, Iowa



Hancock, New Hampshire



Maunakea, Hawaii



*Thank you*



Los Alamos, New Mexico



Kitt Peak, Arizona



Pie Town, New Mexico



Fort Davis, Texas



St. Croix, Virgin Islands