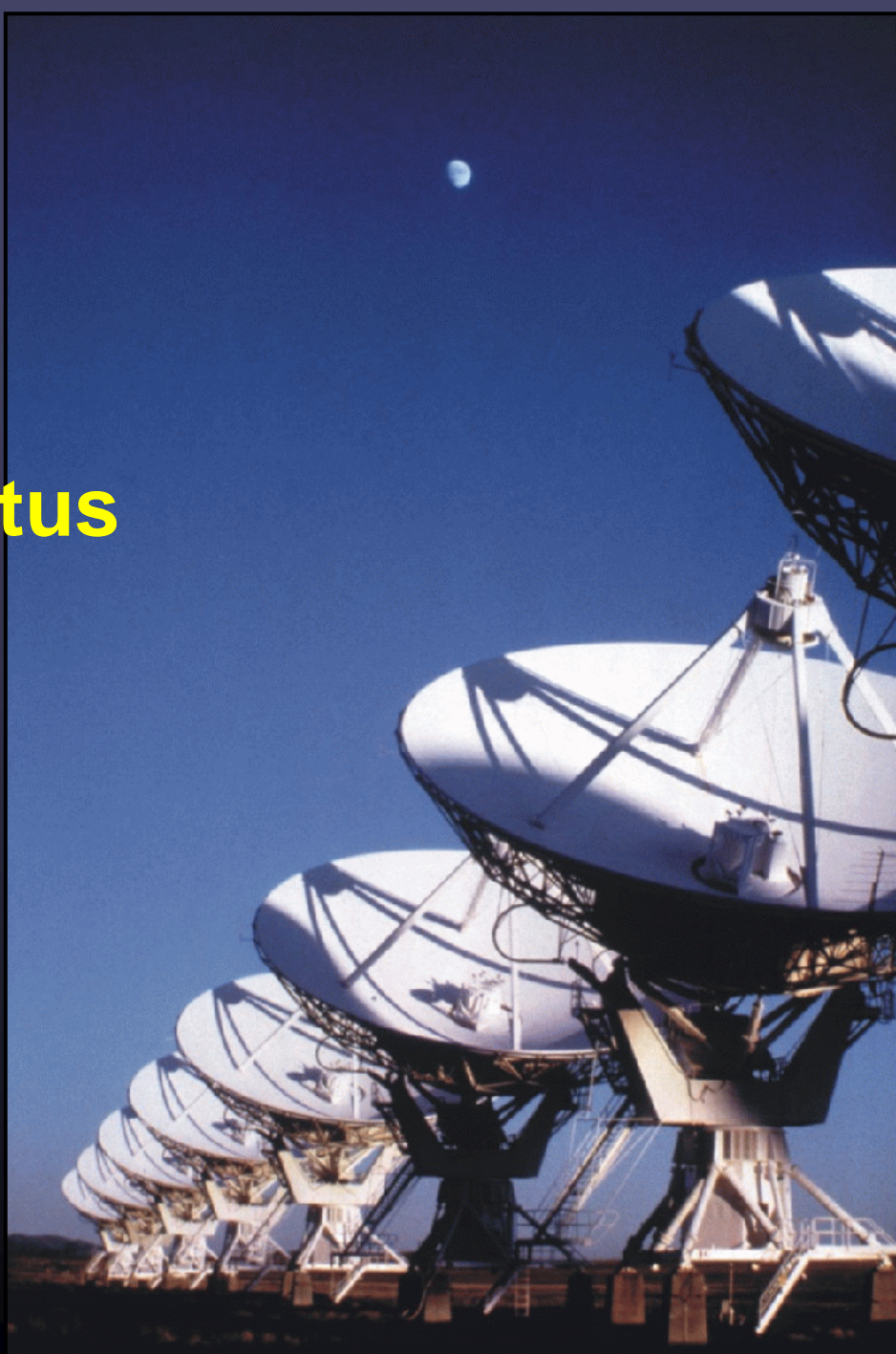




EVLA Construction Status

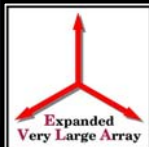
Mark McKinnon
EVLA Project Manager

SAGE meeting
Socorro, May 22-23, 2007



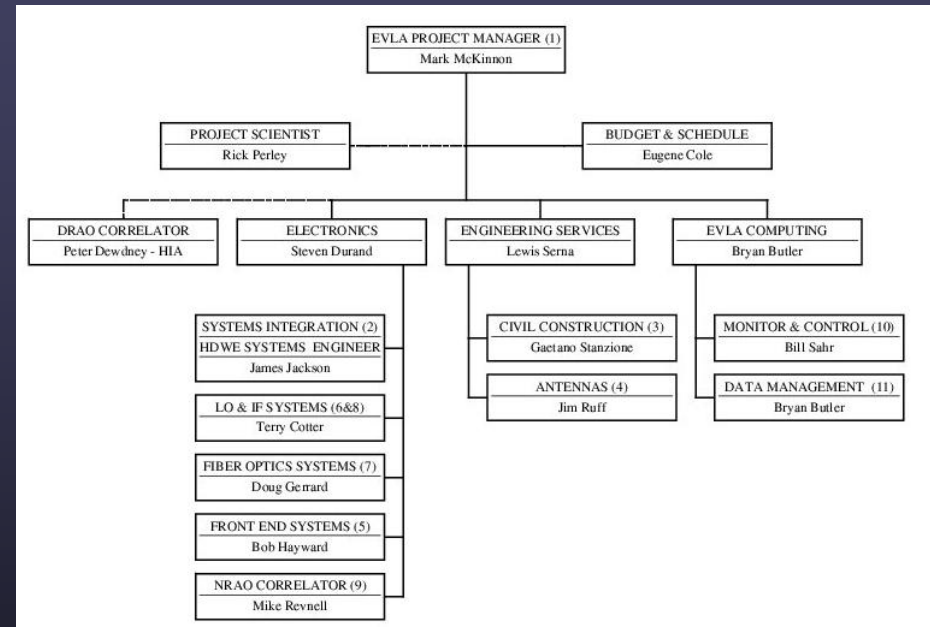
Key EVLA Project Goals

- Fundamental Goal: By building on existing infrastructure, multiply ten-fold the VLA's observational capabilities.
- Full frequency coverage from 1 to 50 GHz.
 - 8 frequency bands with cryogenic receivers.
 - Two separately-tunable polarization pairs, with no restrictions on their tuning (unlike current VLA).
- 1 μ Jy point-source continuum sensitivity (most bands)
- New correlator with 8 GHz/polarization capability
 - 16384 minimum channels/baseline with full polarization
 - Full recirculation capability for increased flexibility
 - 128 independently tunable frequency slots.
- Noise-limited full-beam imaging in all Stokes parameters.



Organization

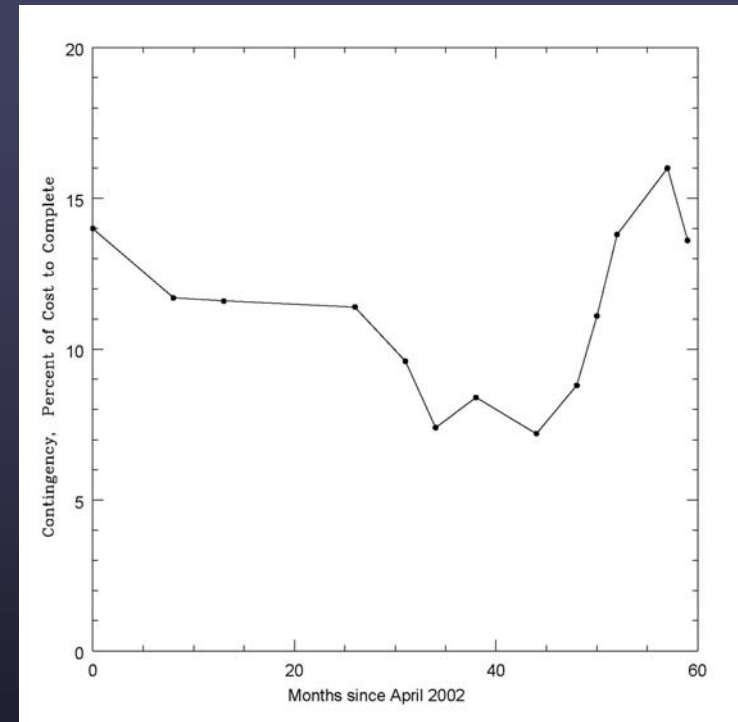
- Work on EVLA is subdivided into 11 WBS elements
- EVLA project is embedded within NRAO-NM Operations
 - Benefits from effort contributed by operations
 - But, can be adversely affected by low operations budget



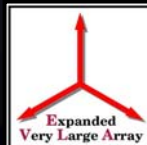
EVLA Organization Chart

Budget

- Funding
 - \$59M total from NSF @ ~\$5M/year through 2011
 - WIDAR correlator (~\$17M) from Canadian partner
 - \$2M from Mexican partner
 - ~\$16M in NRAO-Ops contributed effort
- Project contingency
 - In January 2007, contingency increased to highest level in project history (16% of cost to complete)
 - Currently, contingency is estimated at \$2.9M (11.3%)
 - Could be as low as \$2.2M (8.6%) depending upon outcome of upcoming negotiation on joint software development effort with ALMA
- Descope Options
 - Not considering at this time
 - Possibilities:
 - Solar mode ... \$0.2M
 - X-band ... \$1.0M
 - Ku-band ... \$1.3M

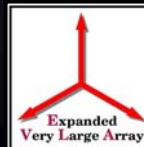
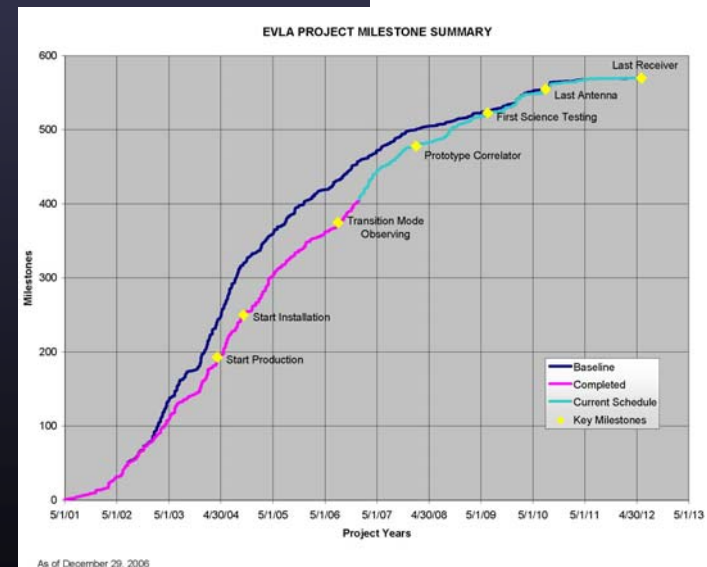
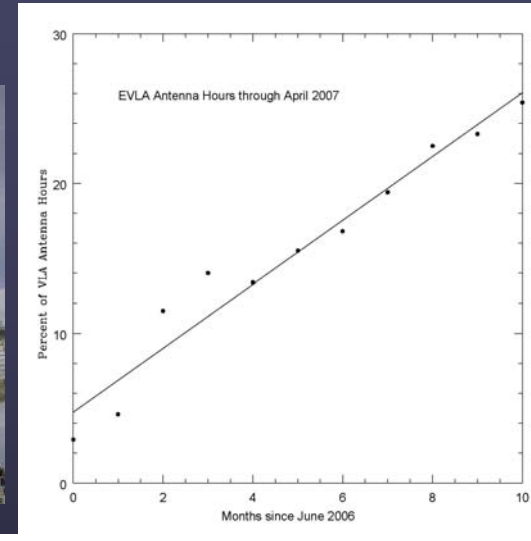


Project contingency, as percent of cost to complete the project, for all actions approved by the control change board as of March 2007



Schedule

- Coarse schedule:
 - Last antenna - Q2 2010
 - Correlator operational – Q3 2010
 - Last receiver (X) - Q3 2013
- On track to achieve goal of retrofitting 12 antennas to the EVLA design by Sep 30, 2007 (see Perley talk)
 - Account for over 25% of VLA antenna hours
 - In Sep 2006, accelerated rate for antenna retrofits as schedule recovery measure
- Correlator delivery paces “real” EVLA capability (see Rupen talk)
 - Install prototype correlator (testing only) – Q2 2008
 - Begin board installation for final correlator – Q2 2009
 - Complete installation – Q2 2010



EVLA Emphasis in FY2008

- Maintain antenna retrofiting rate
 - Potential impact of VLBA tiger team visits in summer 2007
- Continue to expedite receiver production
 - Continue focus on C-band OMT and Ka-band receiver for new, early, science capability?
- Closely monitor correlator progress, and expedite schedule where possible
- Ensure software delivery is matched to hardware capabilities (see Butler talk)
 - Near term: Monitor and control, observation preparation, and post-processing software for prototype correlator
 - Mid term: Ongoing development of user-facing software
 - Long term: Algorithm development for wide-band, wide-field imaging

