



Evolving Paradigms:

Program Review Process & Commissioning, Science Verification, Early Science

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Movement Toward Single PRC

PRC = Program Review Committee

** This is not a TAC because of dynamic scheduling

Most recent discussions described in ASAC March 2002 , Oct. 2004, & 2005 reports. Two more recent reports lay out ways to achieve parity through regional PRCs while still preferring single international PRC

Primary advantages of single PRC include uniform international peer review and cost savings.

ASAC recommendations concerning regional PRCs include concept of Uber International PRC to minimize significant duplication and handle possibility of large international projects

This summer ALMA Board adopted a baseline of a single PRC for budgeting purposes, but requests exploration and clarification of procedures, pros/cons, and costs



Outstanding Issues

Interim project scientists (Wooten, Wilson, Kawabe) have crafted a proposed structure for a single PRC. Main issues:

- Number of panels
- Division of panels into subpanels
- Number of referees per panel/subpanel
- Type of PRC meeting (f2f, telecon, email)
- Frequency of Proposal Calls
- Frequency of PRC Meetings
- Regulation of Partner Parity
- Treatment of multi-partner proposals

- Regional partner concerns
- Open skies issue

Note that number of referees will need to be large to provide scientific coverage and reduce strain on any one referee = costly



A Voice of Dissent

ALMA-J (including Taiwan) is not in favor of a single PRC, they state as their primary concerns: diversity of ALMA science and success of the regional centers

- Each region has its own scientific flavor and style which may be lost in single PRC
- International PRC may lean unfavorably toward “safe” projects
- Perception by regional funding agency that regional concerns and priorities not met could lead to funding crisis
- In particular matters of support for graduate students, young researchers, average size of programs, and what fraction of large programs to accept are important issues for which regional requirements and specialties should be considered



Decisions, Decisions

Subcommittee of ALMA board is in the processes of evaluating desirability of a single PRC chaired by Fred Lo

This subcommittee will present its recommendations at the November board meeting in Madrid

The ASAC has considered this at some length (ASAC charges next talk)

Does the ANASAC wish to consider this issue and help ASAC come up with a North America consensus?



Commissioning and Science Verification

AIV = Assembly, Integration, Verification

CSV = Commissioning and Science Verification

AOS = Array Operations Site (high Site)

- Both the ASAC and ANASAC have expressed concern that Early Science not adversely affect the completion of ALMA
- This premise is gaining wide acceptance within the project
- A proposal has been made to push Early Science later to CSV + 20 months (used to be 13)
- CSV begins when a “verified” 3-element interferometer is handed over at AOS, it is currently projected for **2008 Q4**
 - This change also implies that when the first call is made, there will be significantly more capability:
 - >16 antennas and more observing modes.



Science Verification and ALMA Public Images

SV = Science Verification = e2e test of ALMA observing mode

- Despite push back of early science, early demonstration of fantastic capabilities of ALMA is highly desirable
- The SV process requires an astronomical target. If a small sample of interesting science targets/projects were chosen, and those targets are observed throughout SV, a significant amount of data would be accumulated over time for “free”
 - These data would be public as soon as quality assurance completed
 - Accumulated data will be used to construct “ALMA Public Images”
 - Time allocated for Science Verification will be ~10%
 - The procedure for choosing the science verification projects is not yet well defined, it will be carried out by JAO
 - **THE PROCESS CANNOT SIGNIFICANTLY IMPACT THE PROJECT**
 - **ONLY EXPERTS PLEASE**



Community Involvement in CSV

- The pace of CSV needs to be very rapid
- Procedures and knowledge base will change even from week to week
- CSV team cannot invest time in training/bringing up to speed even the most expert *short term* visitors: to maximize cost-to-benefit ratio, CSV only wants visitors for periods of 3 months or longer
- There is *currently* money in the JAO budget for ~6 external astronomers per year world wide to join in CSV activities (assuming 3 month stays)
- These people will be selected by the JAO/project scientist
- Intent is to issue a “Request for Letters of Interest” as far in advance as possible (> 1 year) to allow time for arranging sabbatical leaves etc.

**NOT YET
BOARD
APPROVED**

Projected Science Summary Schedule

(Data as of 2006Aug06)

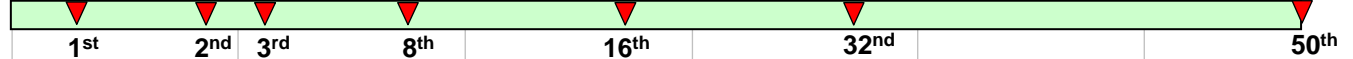
2006				2007				2008				2009				2010				2011				2012			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

SE&I
Reference

ATF Testing

Time Now ▼ Nov '06 ATF First Fringes

OSF Integration – Start dates



ATF

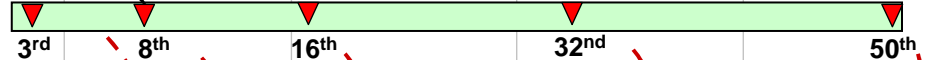
ATF Testing Support

SCIENCE SUMMARY

Site Characterization

Science Support OSF

Commissioning Antenna Array – Finish dates



OSF/AOS

March '09
Limited call for
SV proposals
+6 antennas

Science Verification

Evaluation of
Early Science
Array Complete

Sept '09 Early Science Decision Point

Call for Proposals / Early Science Preparation

July '10 Early Science (+24)

Sept '12 Start of Full Science ▼

Legend

- Time Now
- Milestones
- Interface Milestone
- Critical Milestones
- Critical Interface Milestone
- Activity Description
- Critical Activity
- Progress to date

Logical Relationships

- Non-Critical Link
- Critical Link



Current Projected Timeline



2006 Continue Prototype System Testing,

2006 NAASC testing of observing tool, offline reduction software, pipeline heuristics

Early 2007 First antenna arrival and testing at ALMA site

Early 2009 Commissioning Begins with 3-element array

Mid 2009 Call for Science Verification projects

- 6+ antennas, 2+ bands, continuum & spectral line, 1km baselines
- Off line data reduction

Early 2010 Call for Early Science Proposals (24+ antennas)

2012 Pipeline images for standard modes

2012 Baseline ALMA Construction Complete

