

From rsimon@cv3.cv.nrao.edu Wed Jan 12 16:54 EST 2000  
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To: jwebber@NRAO.EDU  
Subject: ALMA Budget for 2000 (Webber)  
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John,

We have completed the budgeting process for ALMA in calendar year 2000. This note includes a cover note from Bob Brown summarizing the budget situation and priorities, a brief summary of the specific funds available for your efforts, and links to the detailed budget tables, personnel plans, and reports to be found on line.

#### ALMA BUDGET FOR 2000 (Robert Brown)

##### Overview Remarks:

The 2000 budget was assembled from our previous bottom-up planning enlightened by the NSF decision not to provide additional funds to us for (1) a larger prototype antenna, (2) additions to the Project Management staff, and (3) additional tasks resulting from an international partnership. Instead, I believe what the NSF has done is add a fourth year to the Design and Development phase in the expectation that some of these additional costs could be picked up in the course of that year's activity. In any case, with the prospect of additional funds coming our way in 2000 becoming very bleak, we've written the 2000 budget to an amount that allows the currently-funded Project to end December 2000 having spent no more than the allocated \$26M.

This has had a profound effect on our previous plans because we had been led to believe that we could anticipate several million more in 2000. With your help we have created a budget for 2000 that does meet the \$26M sum required through the end of 2000 and Richard has included it here - I hope there are no surprises. The priorities in creating this budget were:

- Maintain the Project staff working productively;
- Respect the budgetary estimates for 2000 that were provided by the Division Heads;
- Contract for the prototype antenna with delivery in CY2001;
- Maintain the schedule for deliveries to the test interferometer;
- Maintain the international partnership;
- Defer to 2001 any tasks and/or contracts for which this is possible;
- Defer to the European group any tasks and/or contracts for which this is possible.

I listed the Project staff first in the list above because I believe they are the heart and soul of our effort. Planned additions to the staff should also

be recruited with the highest priority. Richard has updated the personnel listing, attached, showing all those positions that are presently open or which we expect to open in the next year. Funds for relocating new employees are held in the Administrative travel account - don't worry that your own travel accounts don't appear to have the money for relocating your new employees.

Finally, please review carefully the budget and personnel tables. With few caveats this information should look very familiar to you, but errors should be corrected as early in the year as possible. Let's get this as close to right as possible: we'll have to live with these figures.

Thanks for your help,

Bob

# BUDGET SUMMARY FOR ALMA ACCOUNTS (Richard Simon)

The following accounts cover work related to ALMA efforts in the US.

WBS	Account Description	Account Number	Balance	
		remaining		
1.2.3	CDL Rental Space & Remodel	12001.3030.0203	43,583	
4.1.2	Sideband Source Plates (M&S)	12004.3030.0102	75,174	62,946 ← ??
4.1.3	Room Temperature IF Plates	12004.3030.0103	10,194	10,595
4.1.4	Cryogenic IF Plates (M&S)	12004.3030.0104	7,527	7,652
4.1.5	Dewar Instrumentation (M&S)	12004.3030.0105	69	-99
4.1.6	LO Plates (M&S)	12004.3030.0106	22,444	21,878
4.1.7	Equipment Rack (M&S)	12004.3030.0107	-23,755	14,018 ← ??
4.1.8	Mixers (M&S)	12004.3030.0108	443,983	239,122 - adjusted
4.1.10	UVa Wafer Evaluation (M&S)	12004.3030.0110	20,068	19,855
4.1.11	Integrated IF (M&S)	12004.3030.0111	9,308	120,887 - adjusted
4.1.12	Vacuum Windows (M&S)	12004.3030.0112	15,884	14,249
4.1.13	Fourier Transform Spectr.	12004.3030.0113	120,000	120,000
4.1.14	Noise Test Plate (M&S)	12004.3030.0114	21,116	21,000
4.1.15	Lab Equipment (M&S)	12004.3030.0115	-680	8,664
4.1.16	Lab Supplies (M&S)	12004.3030.0116	85,818	89,309 ← ??
4.1.17	Lab Software (M&S)	12004.3030.0117	14,708	14,142
4.1	SIS Mixers (Trav.)	12004.3060.01	25,000	17,010 ← ??
5.3	Multiplier Chain LO (M&S)	12005.3030.03	11,001	13,698
5.3.2	Tunable phase-locked src R&D	12005.3030.0302	14,455	146,507 - adjusted
5.3.3	Multiplier R&D (M&S)	12005.3030.0303	281,733	
5	LO System (Trav.)	12005.3060	20,000	
8.2	Test Correlator (M&S)	12008.3030.02	2,611	10,652 ← ?? -12K = -1400!
8.3	Preliminary Design (M&S)	12008.3030.03	44,489	64,070 ← ??
8.5	Finite Impulse Response Filt	12008.3030.05	11,247	11,674
8.7	Correlator Chip (M&S)	12008.3030.07	91,700	
8	Correlator (Trav.)	12008.3060	6,000	

Note that personnel costs and related benefits are covered by other accounts. Relocation expenses and travel are excluded from the travel accounts for

particular ALMA US divisions.

On line budget and personnel details:

As usual, all of the documents listed below are available as links from  
<http://www.cv.nrao.edu/mmaplan>

Some of the links below are restricted for obvious reasons; if you are unable to access the links please let me know, and we can arrange something.

The monthly budget report, including all accounts except personnel related accounts, is located at:

<http://www.cv.nrao.edu/mmaplan/budget/budget.pdf> (2 pages)

The current personnel plan summary is on line at

<http://www.cv.nrao.edu/mmaplan/internal/staffing.pdf> (1 page)

The budget amounts above are derived from a combination of detailed budget submissions and/or projections of spending rates. These details, including recent changes and adjustments, are kept on line at

<http://www.cv.nrao.edu/mmaplan/internal/ddbudget.pdf> (17 pages)

A one page summary of the ALMA US budget is available, for use or distribution only within the US part of ALMA. It includes both the current 2000 numbers and very preliminary numbers for 2001. The 2001 numbers are not reliable at all; they represent the costs we would see in 2001 if we continued present efforts at about the same level of effort. The NSF has not yet given us any guidance on what to expect in 2001, beyond an indication that there will be a fourth year of D&D rather than the start of construction.

<http://www.cv.nrao.edu/mmaplan/internal/budgetsummary.pdf> (1 page).

I appreciate that this may be a lot of information to digest; please email or call if you have questions or concerns. In particular, please let me know as soon as possible about any problems or errors you see in these budgets.

Regards,

Richard Simon

Remarks and explanation:

1.2.3	CDL Rental Space & Remodel 12001.3030.0203	43,583
This includes both the rent required for ALMA's share of the CDL labs (~2K/month) and ~23K for furnishings, computers, and supplies.		
4.1.2	Sideband Source Plates (M&S) 12004.3030.0102	75,174
4.1.3	Room Temperature IF Plates 12004.3030.0103	10,194
4.1.4	Cryogenic IF Plates (M&S) 12004.3030.0104	7,527
4.1.5	Dewar Instrumentation (M&S) 12004.3030.0105	69
4.1.6	LO Plates (M&S) 12004.3030.0106	22,444
4.1.7	Equipment Rack (M&S) 12004.3030.0107	-23,755

These seven account represent the requested budget amounts. 4.1.5 is essentially complete, and no more charges are anticipated. 4.1.7 is complete, but an accounting error seems to have been made that must be corrected to balance the account and charge the proper account. For each of these seven tasks, the amount budgeted represents carryover from earlier years with no additional allocation in 2000.

4.1.8	Mixers (M&S)	12004.3030.0108	443,983
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This covers the full costs through 2000-Dec-31 for SIS Contract work at UVa and Stonybrook, assuming that a new Stonybrook contract begins 2000-Jan-14 at a rate of 293.6K/year (283.6K funded this year), and a new UVa contract begins 2000-Jul-01 at a rate of 320K/year (160K funded this year).

4.1.10	UVa Wafer Evaluation (M&S)	12004.3030.0110	20,068
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Carryover from earlier years; no additional allocation in 2000.

4.1.11	Integrated IF (M&S)	12004.3030.0111	9,308
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Includes requested amount, reduced by a negative carryover from 1999.

4.1.12	Vacuum Windows (M&S)	12004.3030.0112	15,884
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Includes requested amount for 2000 and carryover from earlier years.

4.1.13	Fourier Transform Spectr.	12004.3030.0113	120,000
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Carryover from earlier years; no additional allocation in 2000. Can this be deferred into 2001 or later?

4.1.14	Noise Test Plate (M&S)	12004.3030.0114	21,116
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Small 2000 allocation combined with carryover from earlier years.

4.1.15	Lab Equipment (M&S)	12004.3030.0115	-680
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Completed, no additional allocation expected. A small accounting correction needed to balance this account.

4.1.16	Lab Supplies (M&S)	12004.3030.0116	85,818
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Includes requested amount for 2000 and carryover from earlier years.

4.1.17	Lab Software (M&S)	12004.3030.0117	14,708
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Includes requested amount for 2000 and carryover from earlier years. Allows for anticipated software purchases in 2000.

4.1	SIS Mixers (Trav.)	12004.3060.01	25,000
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No detailed travel request was received. This is an estimate for 2000, based on prior years. The following people should nominally charge their ALMA related travel to this account:

- Crady, WK
- Ediss, G.
- Effland, J
- Horner, N
- Kerr, AR
- Lambeth, M
- Lauria, EE

Marshall, AA  
Pan, SK  
TechSpecII SIS Mixer Grp

Travel for relocation, if any, should not be charged to this account, but should instead be charged to 12001.3063.

5.3 Multiplier Chain LO (M&S) 12005.3030.03 11,001  
Carryover from earlier years; no additional allocation in 2000.

5.3.2 Tunable phase-locked src R&D 12005.3030.0302 14,455  
Carryover from earlier years; no additional allocation in 2000.

5.3.3 Multiplier R&D (M&S) 12005.3030.0303 281,733  
This includes both a substantial carryover from prior years plus \$180K budgeted towards a collaborative multiplier chip development with JPL and Caltech. Can \$50K of this latter be deferred into 2001?

5 LO System (Trav.) 12005.3060 20,000  
No detailed travel request was received. This is an estimate for 2000, based on prior years. The following people should nominally charge their ALMA related travel to this account:

Boyd, DE  
Bradley, RF  
Breyerton, E  
Stagoski, M  
Thacker, DL

Travel for relocation, which is not anticipated for this effort, should not be charged to this account, but should instead be charged to 12001.3063.

8.2 Test Correlator (M&S) 12008.3030.02 2,611  
8.3 Preliminary Design (M&S) 12008.3030.03 44,489  
8.5 Finite Impulse Response Filt 12008.3030.05 11,247  
8.7 Correlator Chip (M&S) 12008.3030.07 91,700

These accounts were funded at the requested level, except for a 12K reduction in the Test Correlator account.

8 Correlator (Trav.) 12008.3060 6,000  
No detailed travel request was received. This is an estimate for 2000, based on prior years. The following people should nominally charge their ALMA related travel to this account:

Broadwell, C  
Escoffier, RP  
Greenberg, J  
Treacy, R  
Webber, J

Travel for relocation, if any, should not be charged to this account, but should instead be charged to 12001.3063.