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**FOR  
INFORMATION**

**COUNCIL**

**Negotiations with the National Astronomical Observatory of Japan  
on Enhanced ALMA**

**Status Report #2**

## **Negotiations with the National Astronomical Observatory of Japan on Enhanced ALMA**

### **Status Report #2**

Various technical meetings took place over the summer period, followed by a meeting of the negotiating teams on 24-25 September in Washington. It is now clear that Japan expects and intends to join ALMA on terms essentially as set by ESO and NSF some time ago.

#### **ALMA Japan Status**

1. The Ministry of Science and Technology has forwarded the ALMA-J budget request to the Cabinet unchanged. The request was for 25.6B Yen (200 M€) for 8 years from 1 April 2004. The request for 2004 was 1.08B Yen (8.4 M€). Contingency has been factored into the request.
2. This request covered the compact array (ACA) and its correlator, and three additional receiver bands for all antennas, but it did not cover internal staff costs or infrastructure, which would have to be found within the NAOJ internal budget. The Power Plant (estimated at \$15M) was not included, and work will continue to see if it can be funded, in whole or in part, by NAOJ. Operations were not included.
3. Once the total request is put to Cabinet by the Finance Ministry, and the 2004 Budget is formally approved, the project can be considered securely funded. This should be known by the end of December 2003.

#### **Agreement with Japan**

4. Following the recent meetings there appears to be broad agreement on the text, but work remains to be done on costs and Values of the enhancements to ALMA to be provided by NAOJ. These go into the Annexes, which are an intrinsic part of the Agreement.
5. The issue of operations and how it would be included in the Agreement was left to be resolved once the Operations Plan now being developed and an updated estimate of the cost of Operations were available. But it was once again made clear that Japan is expected to pay for the increment in operations brought about by their contributed enhancements.
6. Based on the ALMA assessment of current Values, NAOJ would receive about 25% of the observing time of the enhanced ALMA. This has not yet been discussed with NAOJ.
7. A revised text of the Agreement was produced after the meeting and is now being discussed by ALMA and NAOJ.

**Proposed Scope of NAOJ Contributions**

8. Following recent technical meetings and an extended discussion it was decided that:
  - further discussions should continue at a technical level, reporting to the Director;
  - a small increase in the Value of the Band 10 receiver could be negotiated;
  - the proposed NAOJ ACA correlator could be accepted with no increase in Value over a quadrant of the ALMA correlator;
  - the proposed NAOJ LO would not be accepted, and if used would carry no Value and the costs of operation and maintenance would fall entirely on NAOJ;
  - the Power Plant would be discussed further with ALMA experts, and that a cash contribution towards its purchase by ALMA could be acceptable.
9. Further work is required to obtain agreement on the cost and Value of goods and services to be supplied by ESO and/or AUI as part of Enhanced ALMA, and on the payments to be made by Japan for goods and services and for Additional Costs incurred by ESO and/or AUI. Agreement must be obtained by early 2004.
10. The next full meeting of the negotiating teams is expected to take place on 25-26 February 2004, preceded by several telecons.
11. NAOJ hope to be able to sign the Agreement immediately before the ALMA Board on 22-23 June. The final text would then be presented to Council at its June 8-9 meeting.
12. A further update will be given to Council in December.