ALMA's Path to Early Science

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ALMA Deputy Director

Latest news

- 9 antennas at the AOS

Board statement

“At its meeting on 17-18 November 2010, the ALMA Board noted the tremendous recent progress in construction and commissioning of the array …

The Board enthusiastically endorses the conclusions of the reviews, and of the Director, that ALMA is on track to begin Early Science observations late in 2011, as planned. While many challenges remain, it is already clear that ALMA "works”.

It is anticipated that the ALMA Director will issue a Call for Proposals for Early Science in the first quarter of 2011. That announcement will provide more details of the expected timeline and capabilities to be offered.”

January Announcement

- 31 March 2011: CfP for ALMA Early Science Cycle 0 and release of offline Observing Tool
- 1 June 2011: Opening of archive for proposal submission
- 30 June 2011: Proposal Deadline
- Mid-September 2011: Latest date for feedback to proposers on the results from proposal review process
- 30 September 2011: Start of ALMA Cycle 0 observing
- February 2012: One month engineering shutdown
- 30 June 2012: End of ALMA Cycle 0

Cycle 0 high level issues

- Cycle 0 capabilities:
  - Base: 16 antennas, relatively short baselines, 21 correlator modes;
  - Stretch capabilities: single dish, polarization, long baselines, mosaics
- Most of the time still dedicated to engineering and Commissioning and Science Verification activities

- First Priority: Completion of the full array
- “Best Efforts” approach to Early Science with shared risk for the users

Access to ALMA: 5 elements

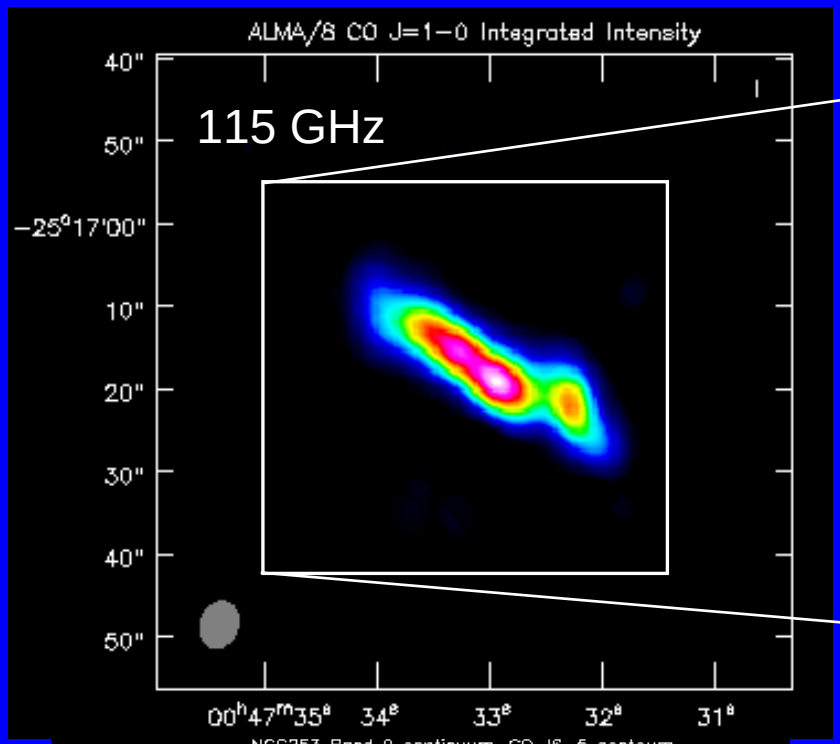
1. Proposal preparation: training and education
   - Via ARCs for the Regions
2. Proposal submission
   - requires Observing Tool (software); available to all
3. Common Proposal Review Process (PRP) for all
   - Assess quality
   - Deal with duplication
4. Access to data via archive at an ARC
5. Data analysis: software tools and user support
   - Via ARCs for the Regions

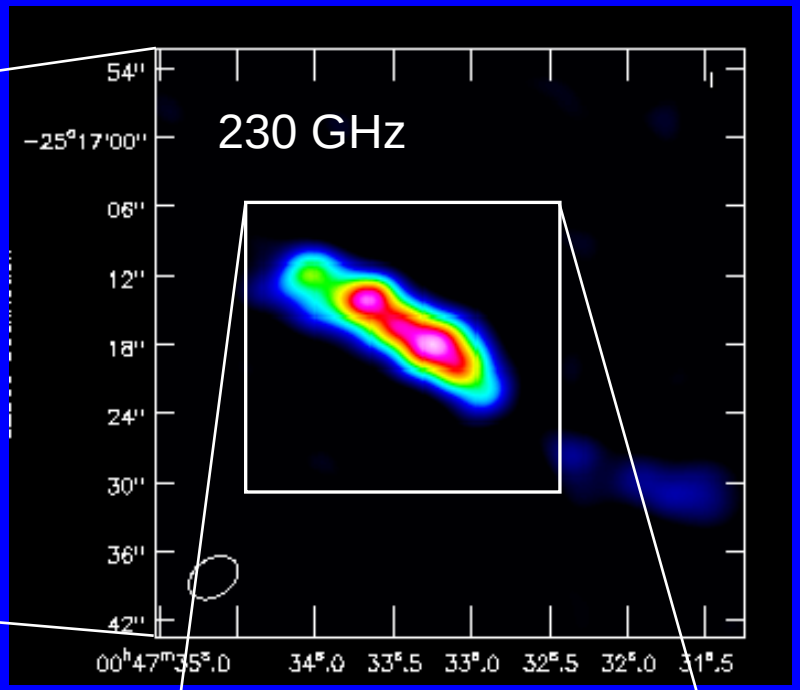
Progress since November

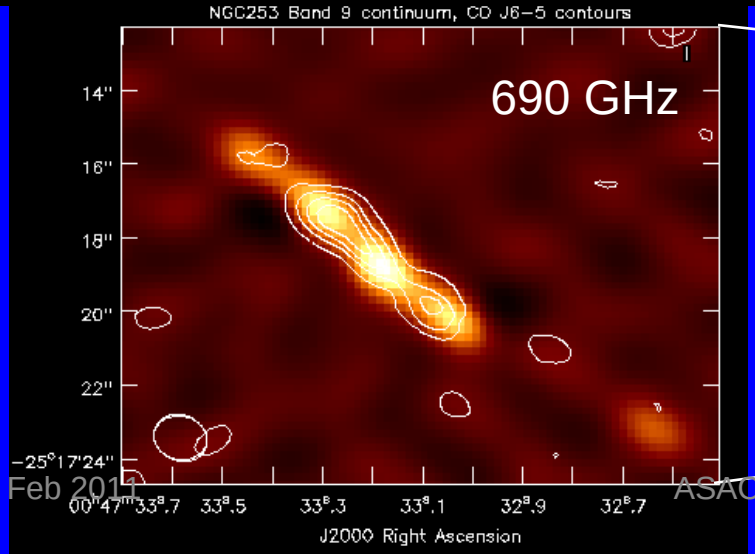
Array

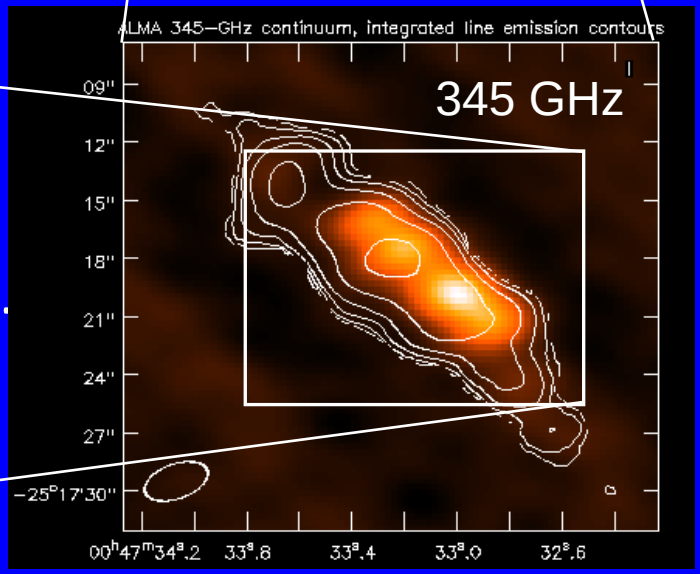
- 8 antennas then
  9 antennas now
  (~12 forecast)
- Forecast date for
  16 antennas
  end-April ➔ mid-July
- Limited CSV progress
  over past 2 months
  (R8.0, weather)

NGC 253: All four available bands work



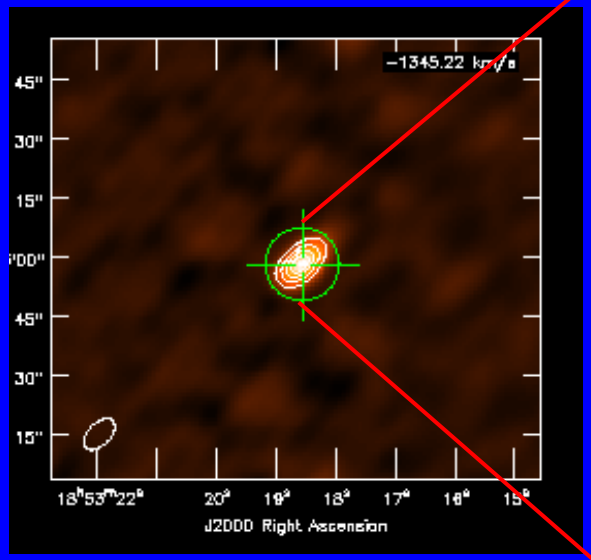


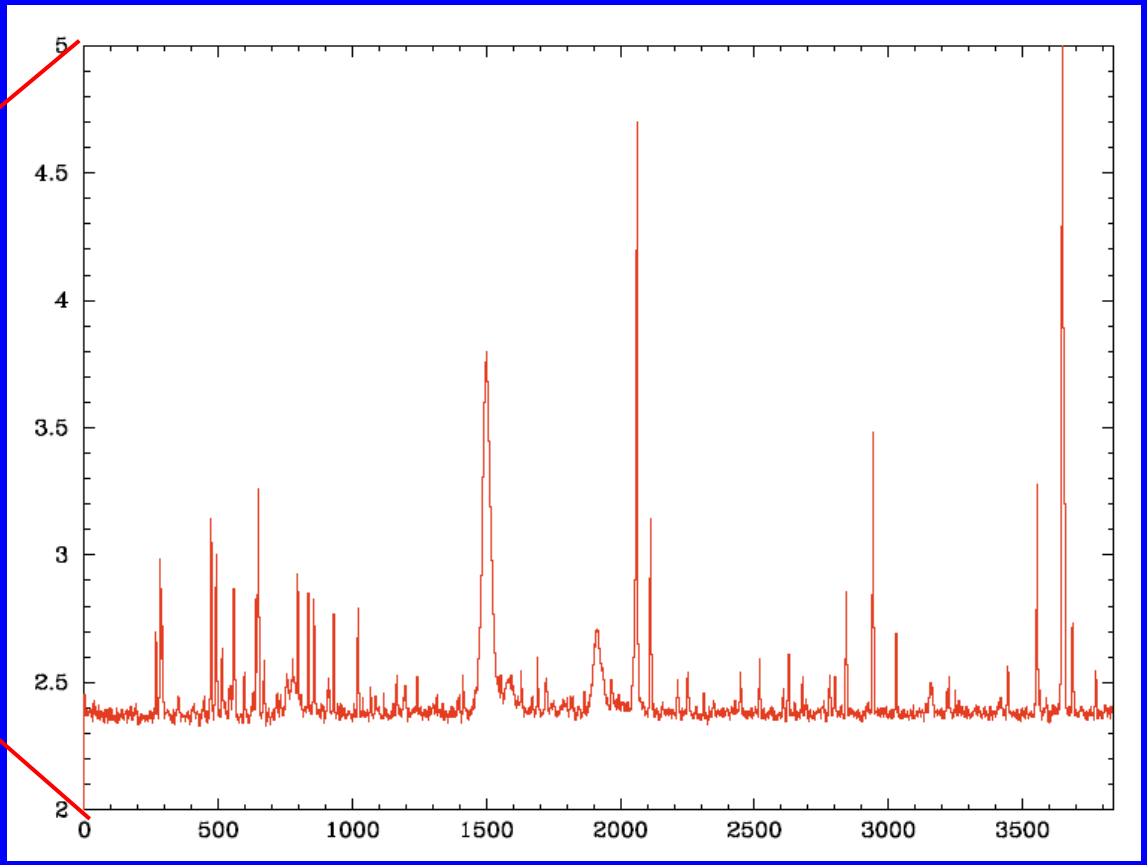




Spectral Line Results

- G34.26+0.15 Band 3





Molecular hot core
~100GHz

Progress since November

Science Operations

- Good progress on submissions, proposal review
- Extensive community interactions by ARCs
- Integrated test 3
- Towards Early Science subproject established

Next steps

- Friday 4 March: decision on Cycle 0 capabilities
- Friday March 11: TES subproject meeting
- Tuesday March 15: Call for Proposals content finalized
- March 31: Issue Call for Proposals
- End-March First e2e test on the array

What is set in stone?

- Dates for CfP, opening proposal submission, proposal deadline, proposal assessment are firm
- Cycle 0 capabilities will soon be decided
- First priority “Completion of the full array” is very clear
- Target date of the start of Cycle 0 observing remains 30 September 2011
- Actual date may slip if necessary
  – decision by JAO Director

The ALMA Dream

www.almaobservatory.org

The Atacama Large Millimeter/submillimeter Array (ALMA), an international astronomy facility, is a partnership of Europe, North America and East Asia in cooperation with the Republic of Chile. ALMA is funded in Europe by the European Organization for Astronomical Research in the Southern Hemisphere (ESO), in North America by the U.S. National Science Foundation (NSF) in cooperation with the National Research Council of Canada (NRC) and the National Science Council of Taiwan (NSC) and in East Asia by the National Institutes of Natural Sciences (NINS) of Japan in cooperation with the Academia Sinica (AS) in Taiwan. ALMA construction and operations are led on behalf of Europe by ESO, on behalf of North America by the National Radio Astronomy Observatory (NRAO), which is managed by Associated Universities, Inc. (AUI) and on behalf of East Asia by the National Astronomical Observatory of Japan (NAOJ). The Joint ALMA Observatory (JAO) provides the unified leadership and management of the construction, commissioning and operation of ALMA.