Science Verification Status

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Science Verification

- Goals:
  - End to End Test of ALMA as a telescope before Early Science
  - Provide data, images (and enthusiasm) to community
- Call for Suggestions
  - Not full proposals, just a couple of paragraphs
  - No full proposal review process, appropriate projects chosen by committee led by Project Scientist and DPS
- Data not proprietary
  - Images released through EPO department
  - Data available to any users who wish to try data reduction

Process

- Start with suggestions from users
- JAO Science Team members create Scheduling Blocks using “Science Goals” in OT and submit to Archive
- Execute SBs on the telescope in the most efficient way possible
- Extract data from Archive, fill to CASA and reduce manually with participation from CSV, DSO and ARCs
- Discuss amongst imaging groups, review calibration strategies
- Rerun if sensitivity not adequate or calibration needs improvement
- Tweak up control scripts as necessary to deal with new observing modes and calibration strategies
- Provide additional feedback to CIPT on OT and control scripts
- Discuss results and images with PS and Director (and Deputies)
- Release approved images through the EPO Group
- Release approved data through ARCs

Call issued in early January

Drafted with input from ASAC and Review Committees

"We are looking for suggestions from the community for sources to add to this list. The main critieria are that there are existing good data (ideally in numerical form, but this is not essential) in one of the frequency bands we are using and that the object has properties that will enable us to make quantitative tests of one or more of the above requirements. Obviously the objects need to be visible from the ALMA site (latitude -22 degrees) and for the present phase it would be best if they transit at night during the coming months (LST ~ 5 to 15 hrs). Since the data will be released publicly, making suggestions will not give you any special rights to the data but we will make sure that credit for the suggestion is given when the data are released and we will expect to involve you in the discussion of issues like the quality of the existing data. Please send your suggestions to sciverif@alma.cl"

http://www.almaobservatory.org/en/announcements-events/251-alma-scientific-verification

Response

•Between Jan 3 and Feb 21, we have received ~80 suggestions

•Various levels of effort put in, ranging from 2 pages with figures to a few sentences pointing to an existing paper.

•A few people looking for new science results or promotion of inter-observatory projects, but also many very appropriate suggestions, offering comparison data from SMA, PdBI or CARMA

•Suggestions still coming, we try to send acknowledgements and update the list once per week

Selection Criteria

- Sources must be appropriate to test particular aspects of ALMA, such as:

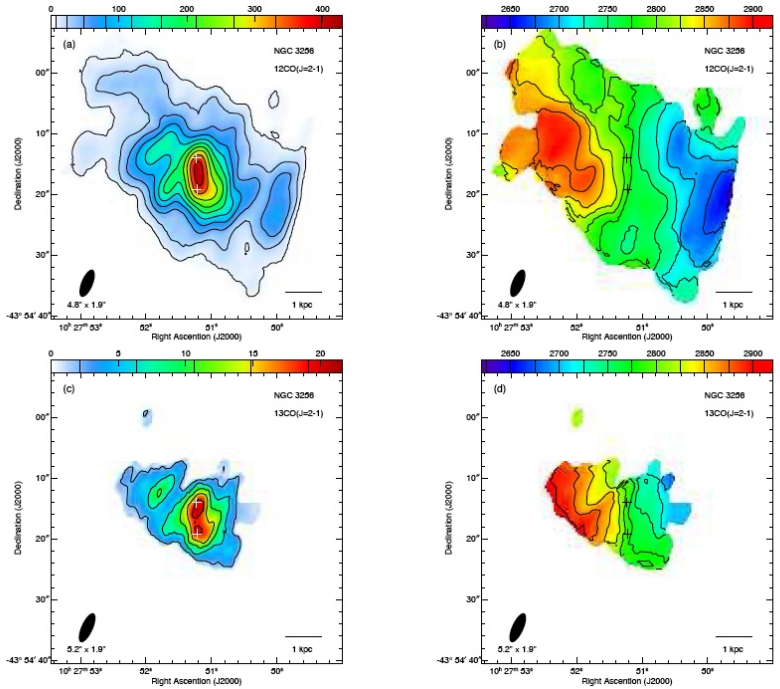
  Calibration accuracy (phase, amplitude, bandpass), dynamic range, spectral dynamic range, non-standard tunings, astrometry, image fidelity, etc
- Must be far enough south to provide a long track for good *u,v* coverage
- Must lie at the appropriate RA to transit rather late at night (testing activities in daytime and subsequent transition to science still time consuming)
- Comparable data (in frequency, angular and spectral resolution) must be made available to the Imaging groups, so published data preferred

First Choice NGC3256

(Extragalactic, CO kinematics, RA~11h)

Observing parameters:

Extended line emission, multiple lines,
Kinematics, extended continuum, multiple peaks
Time estimate: 8 hours for good *u,v* coverage



(SMA data)

Suitable for public data release:

Yes, straightforward calibration, comparable data already published

Comparable data provided to us:

Band 6 (Sakamoto et al. 2006: ^{12}CO (2–1), ^{13}CO (2–1), C^{18}O (2–1), 1.3mm continuum, spectral resolution of 0.81 MHz).

First choice TW Hya

(Protoplanetary Disk)

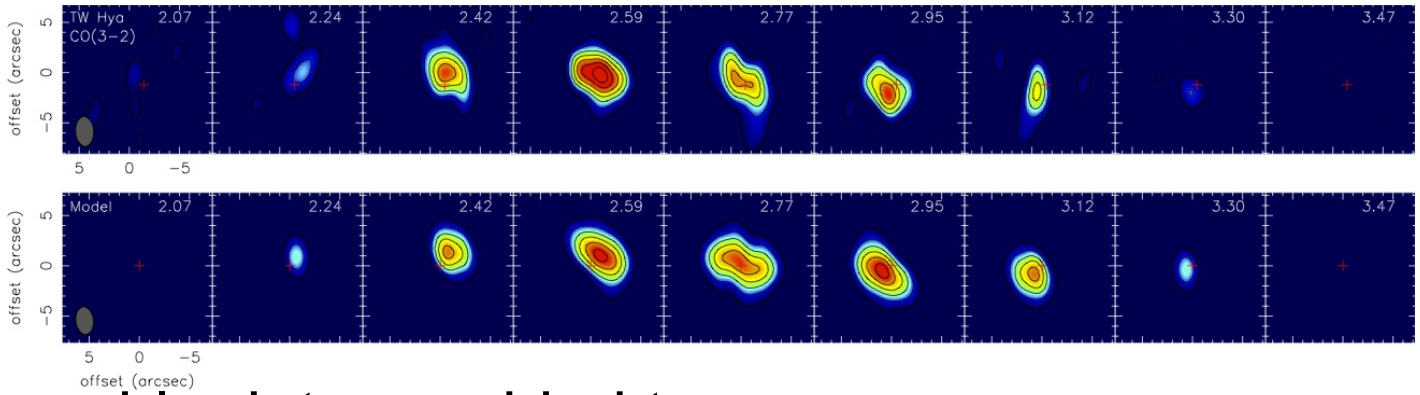
Observing parameters:

Multiple lines, kinematics, all bands including B9

Time estimate: 8 hours x 4 Rx bands for good *u,v* coverage

Suitable for public data release:

Advanced: calibration using broad bandwidth, comparable data already published



(SMA)

Comparable data provided to us:

Band 3 (Wilner et al. 2003: HCO+(1-0), 3mm continuum, 0.3 km/s channels).

Band 6 (Qi et al. 2004: 12CO(2-1), 1.3mm continuum, 0.27 km/s channels).

Band 7 (Hughes et al. 2010: 12CO(4-3), 850um continuum, 0.044 km/s channels).

Band 9 (Qi et al. 2006: 12CO(6-5), 450um continuum, 0.35 km/s channels).

Data so far. Not much

We are ~5 weeks behind, the horrible weather has seriously jeopardized our goal of releasing SV data with the call for proposals at the end of March.

This is still a very high priority, but we would prefer to hold off release for a month rather than allow ourselves insufficient time to thoroughly investigate any possible problems with the data.

Go/no go decision for data release March 31 should be taken on March 15.

Next 4 projects?

Despite the weather, we still need to plan for the next few SciVer projects to start setting up for a later data release. We have attached the list of targets to the ASAC agenda

We would very much appreciate input on these from everyone familiar with the sources! Discussion session, or email comments to Alison…?