ALMA Cycle 1 Science Capabilities

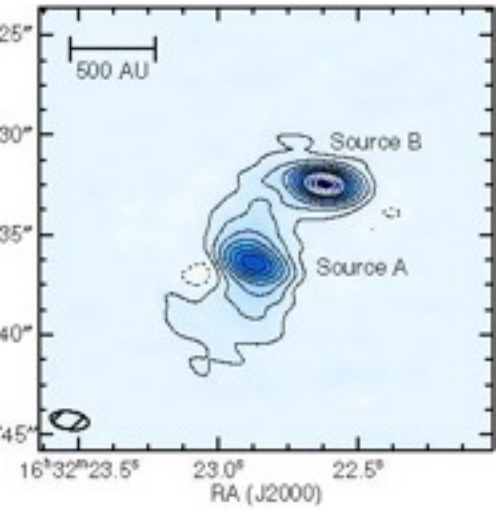
- 25 Jun 2012
- Leonardo Testi

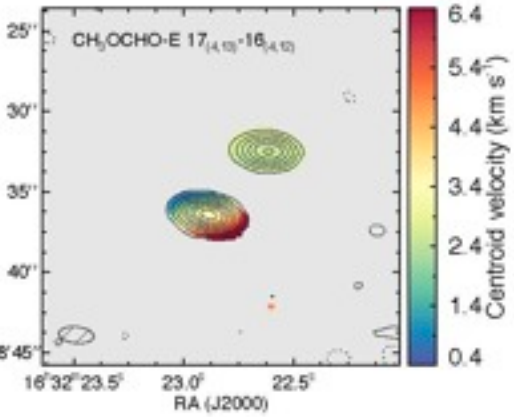
Cycle 1 capabilities

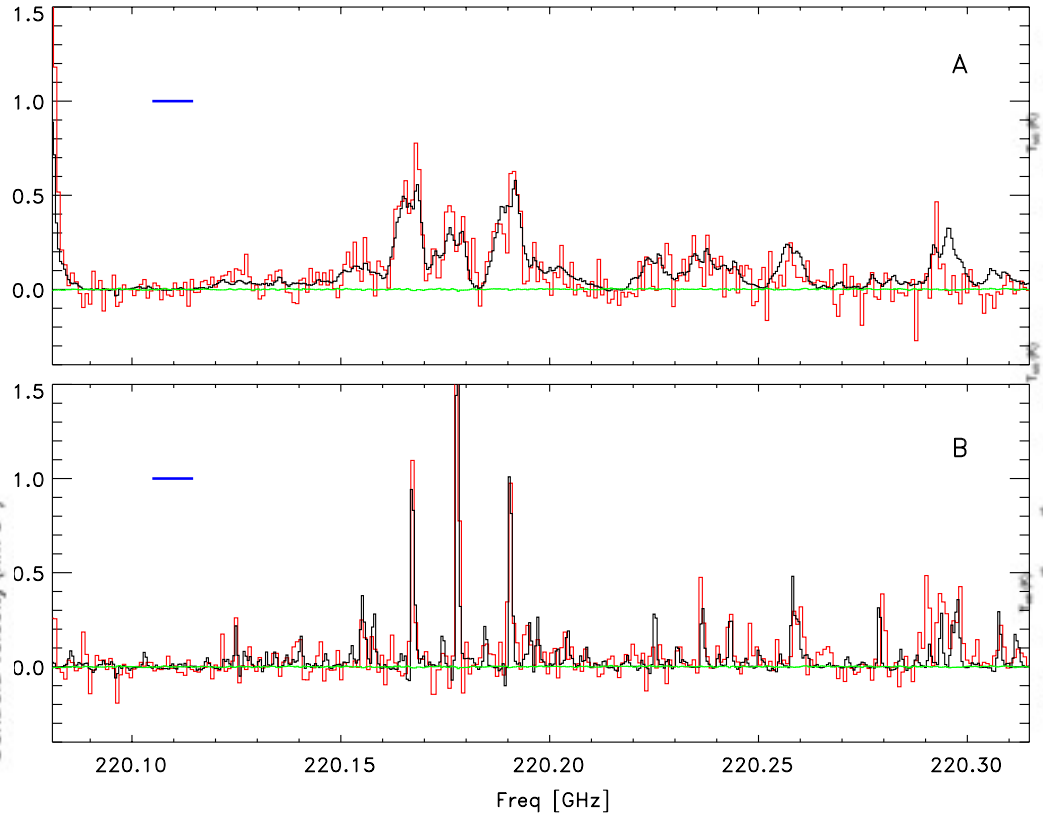
- Antennas/Configurations
  - 32 Antennas
  - Baselines up to ~1km, in six configurations
- Frequency Bands
  - 3,6,7 and 9 as for Cycle 0
- Correlator
  - Increased flexibility (line+cont), but not full flexibility yet
- Mosaicing/Pointings
  - Max 150 pointings/proposal
  - Max 5 Science Goals/max 15src per sg (max 5 vel)
- ACA
  - 9x7m antennas (no stand alone projects)
  - 2x12m Single dish line (no stand alone projects)

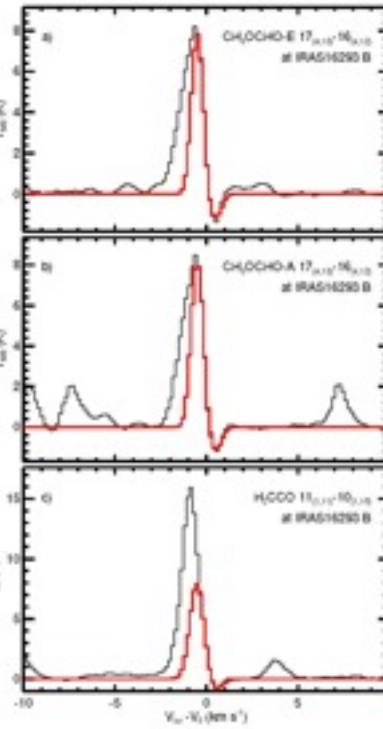
Science Capabilities

- The multiple protostar IRAS16293
  - Jorgensen et al. 2012; Pineda et al. 2012







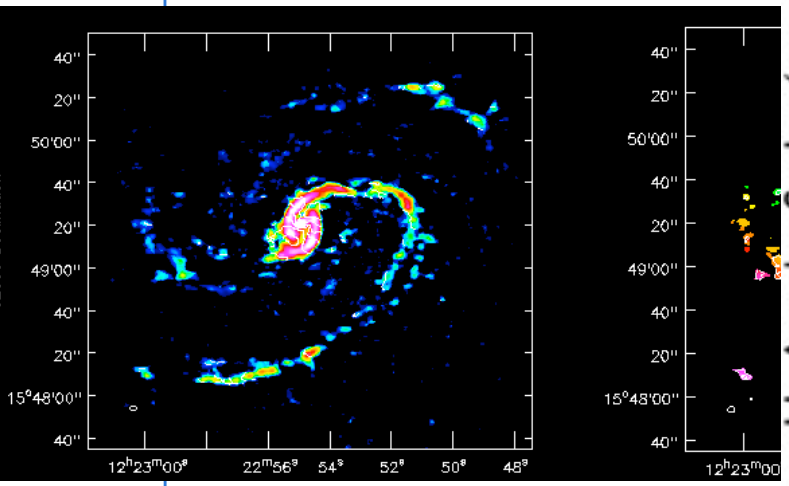


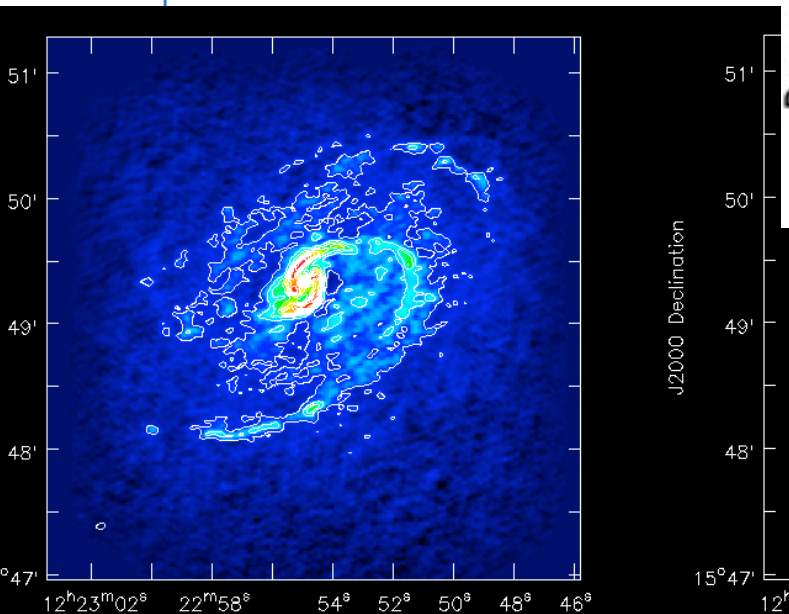
Science Capabilities

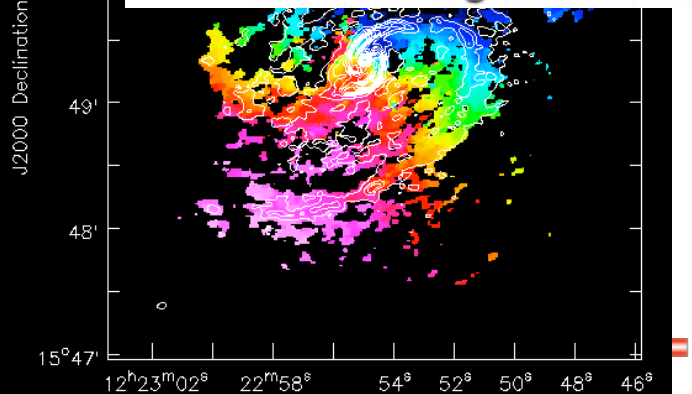
WFI/APEX/ESO/MPG

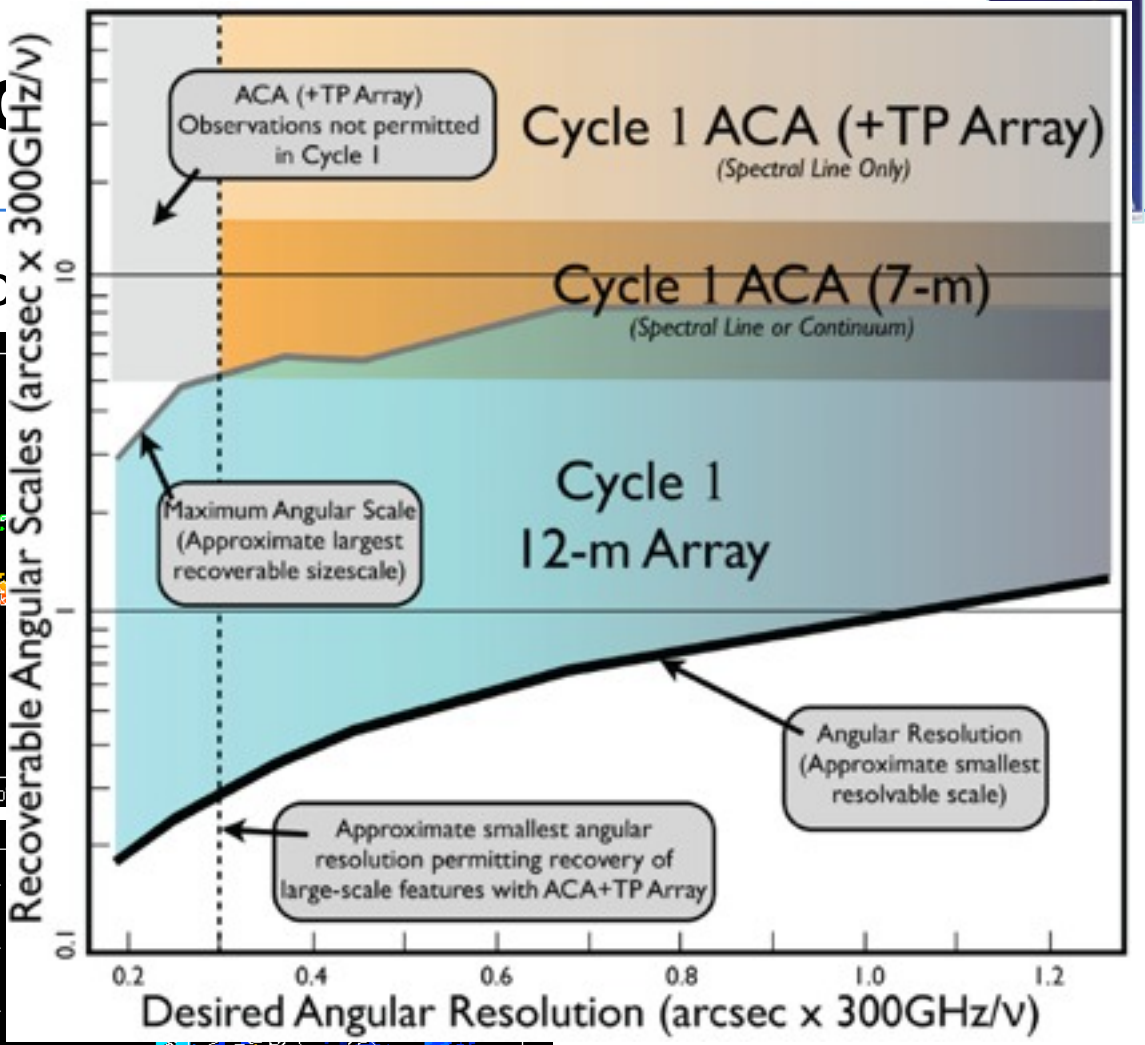
Scienc

- ACA main array cc









Cycle 1 Constraints

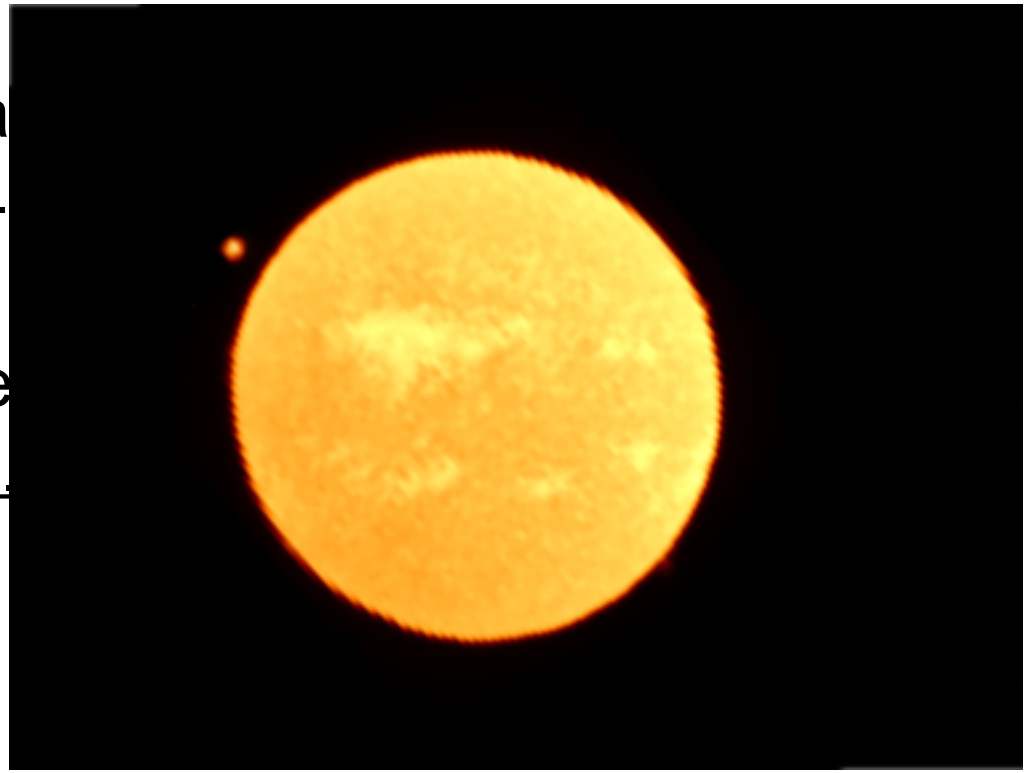
- Cycle 1 observations will be scheduled from Jan through October 2013
  - One month shutdown in Feb 2013
- 800h of 12m array to high priority projects
  - up to 1/3 of this for projects requiring ACA
- Proposals: Standard, ToO, DDT (<5%)
  - ToO predictable event, unknown timing, reaction time can be as large as ~3weeks
  - DDT: unexpected, new developments, quick followup
- Cycle 1 is still Early Science
  - Best effort
  - Mostly night-time observing
  - No carry over to Cycle 2

Outlook on future

- Starting from Cycle 1 ALMA will try to move to regular 1year cycles
- Additional capabilities will be tested in the coming year beyond Cycle 1, with an outlook into Cycle 2 and Full Science
  - Polarization, Solar, Long baselines, additional bands
- Inauguration/FullScience
  - Expected for 2013

Coming up

- Solar Campaign end of June
  - Tests of filters and observing modes
  - Possibly attempt interferometric observations
  - Solar SV campaign (ongoing)
- Polarization campa
  - Results from mini-
- New set of Science
  - www.almascience.



The First Year of ALMA Science

Puerto Varas, Chile
December 12-15, 2012

Exciting results from ALMA Early Science observations,
from the Solar System to the high-redshift Universe,
with an outlook to the future

Scientific Organising Committee

Leonardo Testi (ESO, Chair)
Paola Andreani (ESO)
Lewis Ball (JAO)