ALMA Polarization Commissioning over next Year

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- Some early commisioning results

-- Fixed errors in XY YX connections
Eg labeled X3 with Y4 and X4 with X3 was really
X5 with Y2 and X4 with Y6.
Nothing made sense.
-- Feed orientation of all antennas at any band the same
-- Place feed orientation of feeds in data base.

Recent Commisioning Activities

-- Nagai showed examples of D-term versus time, Frequency and primary beam location.
-- George over last two days showed robustness of the Casa software and other procedures to <0.3% level
-- Your successful running of scripts shows that it is not 'too difficult' to obtain accurate I,Q,U,V images.
-- ALMA has no remainng concerns about offering Continuum pol at standard freq in bands 3,6,7, Single pointing with 65% Power sensitivity.
-- Need one or two Science Verification Observations and The associated casa guide.
Any suggestions? 3C286 one of them?
-- OT implementation has been defined for cycle-2

Suggested and probable activities over next 6-12 months.

-- Confirm observing mode of 'normal' phase referencing
Plus ~6 observations of strongly polarized sources
Every 30 min.

a. Enough parallactic angle coverage? Source dec
Range of -60 to +10 okay.

b. How to find/monitor ~15 quasars with at least 4% Polarization, greater than ~0.5 Jy.

-- Baselines out to 3 km. How to deal with weak phase calibrators with unknown polarization, exp band 7

-- Pushing angular size limit to ~40% of power pattern. Does Mosaicing help.

-- Always observe in all 4-Stokes unless the spectral Resolution is needed.

Suggested and Possible activities for cycle-3.

-- Begin testing more efficient pol observations
  Egs. Short obs of polarized cal and unpolarize cal
-- Monitor D-term solutions and check long-term stability
  Can we stop determining D-terms for standard freqs?
-- Analysis of high spectral resolution D-term determination.
  Can we obtain TDM results and interpolate to FDM?
-- Deeper mosaic studies:
  ACA + ALMA mosaics should not be a major problem.
  Add in SD polarization. Will be challenging.
-- Circular polarization accuracy and observing/reduction
  Methods needed.