

Feedback from Extragalactic breakout session

Chris Wilson and Yu Gao, session leads
(16 participants present)

Note: names attached to ideas indicate the person who started the discussion on a particular topic

Extension/follow-up of existing surveys: JINGLE

- Increase the number of galaxies with both CO (gas) and dust (850) observations (Chris Wilson for JINGLE team)
- Expand the parameter space
 - Galaxies above star forming main sequence (Mark Sargent, raised previously via email)
 - Green valley (Hsi-An Pan), red misfit (Chris Wilson), post-starburst galaxies (Hao Chen)
 - Galaxy pairs (Hsi-An Pan)
- Target galaxies that MaNGA has already observed (Ting Xiao)
 - 700 with HI observations from GBT
 - CO would give total cold gas

Extension/follow-up of existing surveys: MALATANG

- Observe HCN 3-2 with RxA at HCN 4-3 detections (Chris Wilson)
- HCN and/or HCO+ 4-3 observations of M31(Qinghua Tan)
 - Would probe L(IR) range between Galactic clouds and MALATANG scales
- *With a new HARP with more pixels, could do larger and more sensitive maps of MALATANG and other galaxy targets (Yu Gao)*

Some ideas from previous large proposal discussions

- Edge-on galaxies co-ordinated with X-ray observations from CHANDRA: galaxy halos
- Dwarf galaxies
 - For example, dwarf galaxy pairs from the TINY TITANS survey (Yinghe Zhao)
 - CO or SCUBA-2 observations would probe cold ISM (targets already have HI from VLA)

Other ideas: Active Galaxies

- Narrow-line Seyfert 1 galaxies (Feng Gao)
 - Different accretion mode proposed
 - Do they have outflows?
 - Could survey in CO J=2-1
- LIRGs/ULIRGs (Chris Wilson, Qinghua Tan)
 - CO 3-2 and/or SCUBA-2 of GOALS sample (~200 galaxies)
 - Some previously observed but not all
- AGN-active Early-Type Galaxies (Feng Gao)
 - Not common in ATLAS-3D sample

Very nearby galaxies: various ideas

- Deep SCUBA-2 map of M31 (also M33)? (Chris Wilson)
 - Combine with existing Herschel data for better dust mass, temperature, etc
- SCUBA-2 survey of nearby equatorial galaxies (Chris Wilson)
 - complementarity/synergy with ALMA (can't get large-scale continuum emission yet)
- CO 3-2 maps to combine with Nobeyama large program on CO 1-0 of nearby galaxies (Hsi-An Pan)
 - Could also do dense gas tracers
- SCUBA-2 map of Herschel Reference Sample galaxies (Chris Wilson)

“Blue Sky” ideas

- Paul says “think aggressively”
- SCUBA-3: 850 micron map of the entire H-ATLAS survey area (many 10’s of square degrees) (Chris Wilson)
- Large maps of CO, HCN, HCO+ of nearby galaxies with HARP++ (Yu Gao)
- Blind CO J=2-1 survey of 10,000 galaxies (Chris Wilson)

Present at Nanjing session

- Chris Wilson, McMaster; Hsi-An Pan, ASIAA; Mark Rawlings, EAO;
- Yu Gao, Qinghua Tan, Chentao Yang, Xue-Jian Jiang, PMO
- Zongnan Li, Hao Chen, Nanjing University
- Qian Jiao, Tzanwen Cao, Li Xiao, NAOC
- Yinghe Zhao, YNAO
- Yang Gao, Feng Gao, Ting Xiao, SHAO