

# EAO JCMT Large Programs

## Large Program Allocations

Large Program	Instrument	Hours awarded
A Transient Search for Variable Protostars	Sc-2	150
S2-COSMOS: An EAO SCUBA-2 survey of 1,000 SMGs in the COSMOS field	Sc-2	223
SCOPE: SCUBA-2 Continuum Observations of Pre-protostellar Evolution	Sc-2	300
A magnetic field survey of the Gould Belt clouds	Pol-2	224
JINGLE: the JCMT dust and gas In Nearby Galaxies Legacy Exploration	Sc-2/RxA	780
STUDIES: SCUBA-2 Ultra Deep Imaging EAO Survey	Sc-2	330
MALATANG: Mapping the Dense Molecular Gas in the Strongest Star-forming Galaxies	HARP	390
Total		2397

## Hours awarded per weather band

Large Program	Band 1	Band 2	Band 3	Band 4	Band 5
Transient	50	50	50		
S2-COSMOS		111	112		
SCOPE			150	150	
Gould Belt (pol-2)		224			
JINGLE		57	123	200	400
STUDIES	330				
MALATANG		40	100	250	
Total	380	482	535	600	400

# A Transient search for variable protostars – How Do Stars Gain Their Mass?

Gregory Herczeg (KIAA/Peking University), Doug Johnstone (NRC Canada),  
Geoff Bower (ASIAA), Yuri Aikawa (University of Tsukuba), Jeong-Eun Lee  
(Kyung Hee University).

- Most protostars have luminosity lower than that expected for steady accretion.
- Episodic accretion? If so, what are the time scale and amplitude?
- Long term SCUBA-2 monitoring of several nearby star-forming regions to detection variability.

# SCOPE: SCUBA-2 Continuum Observations of Pre-protostellar Evolution

Coordinators: Tie Liu (KASI, S. Korea), Mark Thompson (University of Hertfordshire, U.K.), Sheng-Yuan Liu (ASIAA, Taiwan), Gary Fuller (The University of Manchester, U.K.), Ken Tatematsu (NAOJ, Japan), Yuefang Wu (Peking University, P. R. China), Di Li (NAOC, P. R. China)

- SCUBA-2 followup of all-sky Planck cold clumps to study the earliest stage of star formation.
- ~1000 cold clumps selected across different Galactic environments.
- SCUBA-2 can resolve the substructure where Planck and Herschel can't.

# A Magnetic Field Survey of the Gould Belt Clouds

D. Ward-Thompson, R. Furuya, D. Li, R. Rao, W. Kwon, P. Bastien

- Pol-2 polarization mapping of the densest parts of the Gould Belt star forming region.
- To use dust polarization to map magnetic field.
- To understand the role of magnetic field in filaments and outflows at 1000 AU scale.

# MALATANG: MApping the dense moLecular gAs in the sTrongest stAr-formiNg Galaxies

Yu Gao (Purple Mountain Observatory), Zhiyu Zhang (The Royal Observatory, Edinburgh and European Southern Observatory), and Thomas R. Greve (University College London)

- HARP-B mapping of HCN and HCO+ ( $J=4-3$ ) of 23 nearby, IR-bright galaxies.
- spatially resolved (0.2-2.8 kpc) dense gas tracers over various environments (galactic centers, disks).
- role of dense gas and star formation (Kennicutt-Schmidt law).

# JINGLE: The JCMT dust and gas In Nearby Galaxies Legacy Exploration – A new local galaxy evolution legacy survey

A. Saintonge (UK), C. Wilson (Canada), T. Xiao (EAO/China)

- SCUBA-2 imaging of 190 galaxies plus CO(2-1) RxA flux measurements of a subset of 75 galaxies
- Galaxies selected with MaNGA IFU targets and Herschel surveys.
- Study global properties of galaxies (dust properties, gas mass, star formation, stellar mass, metallicity,...)

# S2-COSMOS: A SCUBA-2 survey of 1,000 SMGs in the COSMOS field

Ran Wang (CN), Scott Chapman (CA), Yuichi Matsuda (JP), Yujin Yang (KR),  
**Ian Smail (UK)**, Wei-Hao Wang (TW)

- SCUBA-2 850  $\mu\text{m}$  mapping of the 2 deg $^2$  COSMOS area. (COSMOS is one of HSC's ultra deep pointings.)
- Will detect  $\sim$ 1000 submm galaxies to a flux limit of 4.5 mJy ( $\sim 5 \times 10^{12} L_\odot$ ).
- Very powerful for clustering analyses of submm galaxies, and multiwavelength studies of galaxies.

# STUDIES: SCUBA-2 Ultra Deep Imaging EAO Survey

Scott Chapman (CA), Xianzhong Zheng (CN), Hyunjin Shim (KR), Tadayuki Kodama (JP), Ian Smail (UK), **Wei-Hao Wang (TW)**

- SCUBA-2 450  $\mu\text{m}$  mapping of a portion of the COSMOS-CANDELS area.
- Will reach confusion limit in the map center, to provide the deepest ever far-IR selections of high-z galaxies.
- To understand the typical galaxies that produce the far-IR extragalactic background.

# JCMT Large Program Open Enrollment Period

## Now - February 1<sup>st</sup> 2016



Calling all astronomers from EAO regions and partners:

If you are interested in Star Formation, Nearby Galaxies or Cosmology now is the chance to get involved with any of our seven newly approved Large Science Programs!



For more information or to express interest in joining one of the seven projects email:  
[JCMTLargePrograms\\_join@eaobservatory.org](mailto:JCMTLargePrograms_join@eaobservatory.org)

Visit: [www.eaobservatory.org/jcmt/science/large-programs/](http://www.eaobservatory.org/jcmt/science/large-programs/) for more information

To get involved with any of the above programs please email:

[JCMTLargePrograms\\_join@eaobservatory.org](mailto:JCMTLargePrograms_join@eaobservatory.org)

Please include your name, institution (please note only astronomer from EAO regions and partners will be permitted to join), and a brief – one paragraph – explanation as to your interest and what you feel you can contribute to the project.