

# Status of KaVA Star-Forming Regions (SFRs) sub-WG

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# Activities

- Test observations, mainly 44 GHz CH<sub>3</sub>OH masers
  - Fringe-check survey with KVN
  - Imaging test with KaVA
- Discussion about “Large Project”
  - Science case of sub-projects by using 6.7GHz methanol, 22 GHz water, and 44GHz methanol masers
- Planning of initial project observations from October
  - 50 hours of allocation for KaVA
  - 12 sources associated with 44 GHz methanol masers
  - Follow-up observations with VERA and KVN

# Uniqueness and advantage

- Multi-transition study, phase-referencing, ...
- Most important advantage is imaging capability of extended emission with shorter baselines
- 44 GHz methanol masers are detectable with KaVA
  - Unique tracer of star-forming regions
  - See next talk by Matsumoto-san

# Summary of sub-projects in our Large Project

Short title	22 GHz	44 GHz	6.7 GHz	Num. sources	Phase -referencing	Monitor	Note
Multi-maser	?	V+K	JVN	10	Abs. proper motion	Abs. proper motion	Sugiyama
Jet masers	V+K	-	-	21 8 high priority	Parallax for unknown D	Int. proper motion	Kim
Jet masers	V+K (V)	-	-	4	Abs. proper motion	Abs. proper motion	Motogi
44 GHz survey	-	V+K	-	13	Parallax for 44GHz only src.	Int. proper motion	Kim
Merging	V+K	-	-	9	Abs. proper motion	Abs. proper motion	Chibueze
NRO Multi-maser	-	V+K	JVN	35	?	?	Shino, new proposal
Statistics	-	-	-	Total 80, overlap removed	-	-	Hirota, Combine above
Multi-maser	?	V+K	?	0	Abs. position, Parallax for unknown D	Int. proper motion	Kim, Not proposed
EGO	Y	N?	-	0	?	Y	Minh, Not reviewed
Accretion	V+K	-	-	0	Abs. proper motion	Abs. proper motion	Imai, excluded in initial phase

# Summary and future

- We will continue discussion about our “Large Project” for observational study of SFRs with masers
- We will have first project observations with KaVA as well as follow-up survey with VERA and KVN
  - 50 hours of allocation for 12 sources associated with bright 44 GHz methanol masers detected with KVN-FC
- The first paper of VLBI observation of the 44 GHz methanol maser will be submitted soon
- We will welcome collaborators!