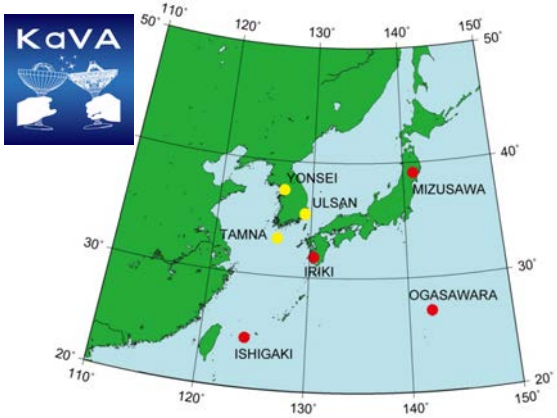
Proposal writing workshop

Tips from one of successful users (and some reviews point of view)



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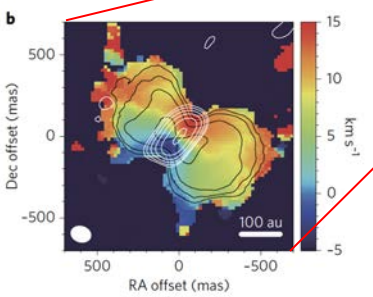
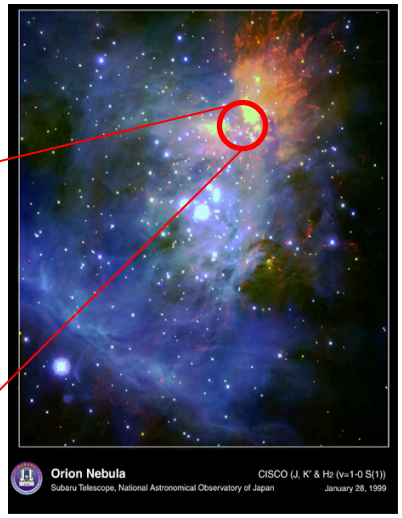
Preface

- Based on my proposals strongly biased to
  - High mass star-formation (Orion KL)
  - Chemistry
  - Masers, VLBI
  - Some collaborations (20/cycle)





- Experiences of ARP member (category 3 in cycle 3, 4, 5)
  - Some comments based on reviews point of view
  - But wait for Saito-san's talk
- Not good at English, no illustrated presentation
  - Maybe make you misunderstood
- Similar to or less experiences than some of you
  - Maybe make you boring

My proposal history

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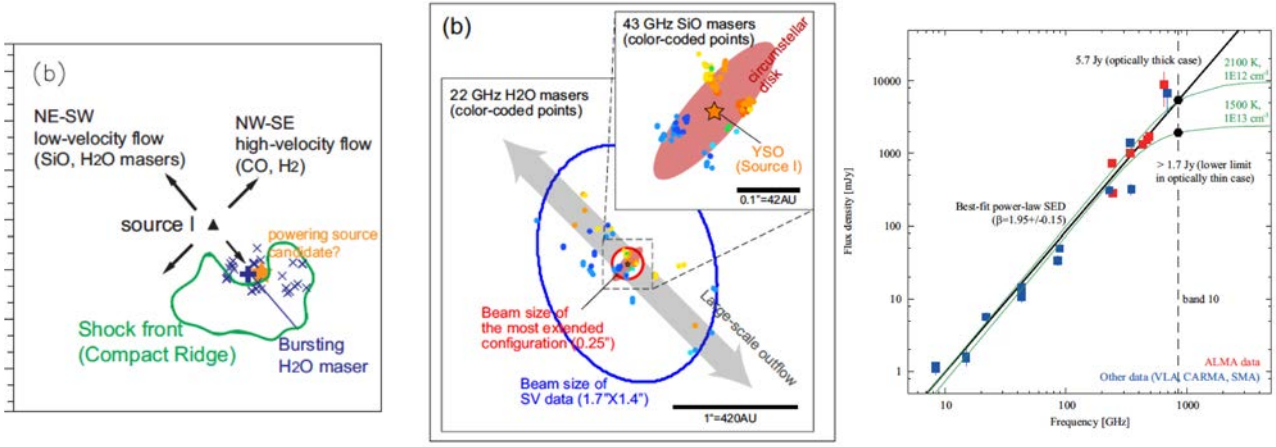
- Not always successful: 65% success rate
- **Don’t trust me too much**

Proposal weakness 1/4

- No detailed comment on science (unlike review of papers)
- Not very serious as they are all for successful proposals
- Lack of broader context, uniqueness and/or generality
  - Connection between a broader context needs to be more clear
  - The relevance of this particular source in the context of high-mass star formation would strengthen the proposal
  - How unique or typical their target is, and how general the conclusions will be?
  - Lacks a description on how observations have a broader impact on astrophysics

Proposal weakness 2/4

- Not fatal, but need to be improved (red are for rejected one)
- Discussion on how to achieve science goals
  - How observations clarify the nature of other high-mass protostars?
  - How initial questions will be addressed quantitatively?
  - Simulations should be performed to demonstrate feasibility
  - No discussion of how physical properties could be derived
  - Not clear how new observations will clarify nature and mechanism



Primitive models/predictions used in the past proposals

Proposal weakness 3/4

- Maybe declined by these comments (red are for rejected)
- **Insufficient discussion on capability/feasibility**
  - Still limited by the phase scatter so the positional accuracy might be overstated
  - Big jump in angular resolution w.r.t. previous observations
  - Not clear whether both bands 9 and 10 are needed
  - The need for high resolution observations is not well justified
  - Why didn't they request band 7 or 6 with higher resolution where the sensitivity would help?
  - How much bandwidth is removed when line the forest is removed?

Proposal weakness 4/4

- Maybe declined by these comments (red are for rejected)
- **Unclear science goals**
  - Not explained why it could not be constrained using previous observations
  - Unclear whether some of the science goals could be met with the current data
  - This proposal is presented as a mixture of two goals, making it somewhat unfocussed.

- **Lessons learned**
  - **Science goals must be clear and well focused**
  - **Capability/feasibility must be clearly justified**
  - **Importance from broader context (not too specific, not too unique) and method to achieve science goals would strengthen the cases**

Positive comments 1/2

- Unique/well-justified strategy
  - The source is very interesting and unique
  - Further frequencies requested will help to break the degeneracy
  - Allow the characterization with precision that has never before been possible
  - Justified why ALMA is the only instrument that can achieve their science goals
  - Included convincing discussion of the utility of non-detections
  - Timely proposal for cycle 0 --- H2O maser burst
    - Possibility of 13 years periodicity
    - ”Cannot wait until ALMA cycle 13!”
    - **Thanks to referees for understanding!**

Positive comments 2/2

- Combination with VLBI
  - The observations are coordinated with VLBI network in EA
  - There is considerable ancillary (VLBI and ALMA) data
  - Well justified case and motivations from ALMA and other telescopes
- Utilizing previous ALMA data
  - Good progress with data received and justification for continuation
  - The analysis done on the SV data looks convincing
  - The proposal is well-written and builds well on previous data
  - Clearly justify the need for high angular resolution using ALMA data
  - The (previous) results are good motivation for the small pilot study
- All based on continuous publications from VERA and ALMA
  - Hirota+2007, 2011, 2012, 2014ab, 2015, 2016ab, 2017, Kim+2008
    - **Probably giving positive impression for reviewers**
    - **Probably making others hesitate to submit conflicting proposals**

Practical issue

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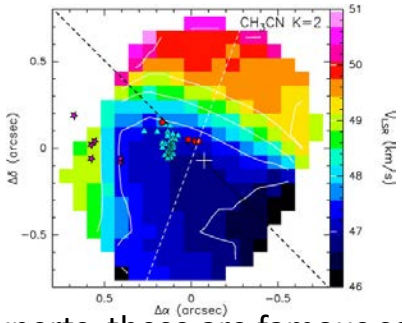
- Always with long(est) baseline at high(est) frequency
  - **Byproducts; no need to check duplication!**
  - But high risk projects are still difficult to be completed

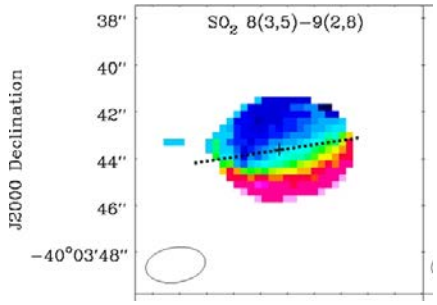
How to reduce risks in observations

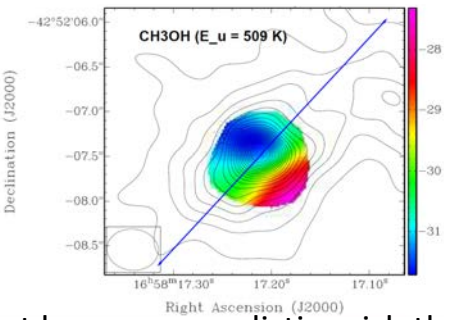
- Not necessary to get higher grade (rather disadvantage)
  - **The goal is not to be accepted but to be observed**
  - Sometimes filler is better for your science (in my experiences)
    - Not to be transferred to next cycle
    - Not to be fallen behind competitors
  - Lower frequency is much better than higher bands
    - Even in case of non-standard mode (e.g. polarization)
- Reconsider whether you really need what you request
  - Some referees think ALMA would be better no matter how it can be done by using other instruments, but . . .
  - Can it be done by degrading request, or by using other telescopes?
    - It will make your proposal stronger and more feasible with minimum requirement

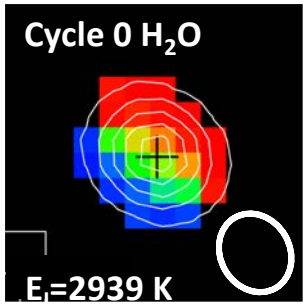
Imagine who is your reviewers

- **Neither always experts, nor interested in your sciences**
  - Similar preparatory studies, targets, lines, goals, etc.
  - How to be distinguished among many proposals?
  - **Should be unique, but not too much**
  - **As simple as possible, never ask to read references**
- **Sometimes expertise your sciences**
  - Don’t give negative comments on previous works
  - Don’t insist your idea too much, proposal is not a paper
  - **The goal is not to present your science but to get data**









For experts, these are famous sources and excellent sciences. But how can you distinguish them if you are non- expert?

Summary

- Not to become weak proposal,
  - Science goals must be clear and well focused
  - Capability/feasibility must be clearly justified
  - Importance from broader context and method to achieve science goals would strengthen the cases
- To get more chance for observations,
  - Consider how to reduce risk in observations (e.g. lower-frequency)
  - The goal is not to be accepted but to get data
- To give positive impression for reviewers,
  - Consider who will be your reviewer
  - The goal is not to present your science but to get data