

# Minutes: M2O telecom, No. 6

April 23, 2019

minutes: Ross Burns

## Figures to be found in the reports (follow hyperlinks)

Text from the original Agenda will be in black, new material added as Minutes will be in blue. The G358 event expanded M2O activities, especially those involving new members. Many thanks to those who have joined us. Welcome!

## 1 Recent maser activity (Non-G358)

- Orion KL, NGC 2071, RhoOphiu, G25, W49N, IRAS16293-2422, others?

IRAS16293-2422 undergoing a continuously evolving water maser burst - being monitored with single dish. No other maser observations at different transitions reported. The source is a low mass class 0 protostar. VLA observations have been made and a lot of ALMA data exists. Is there any apatite for VLBI images? If so, we can propose in June to East asian and Aus VLBI arrays.

No discussion on any other maser sources

## 2 G358: Observation reports

Note that the light-blue texts are hyperlinks to PDFs that contain reports

- Single dish [PDF](#), [MacCleod \[hyperlink\]](#)

\* Fannie: G358 Spectrum constantly evolving. Checking all JPL lines available to Hart - seeing consistency in the spectrum shape accross several lines.

\* Shari Breen: Mopra observed several lines, but moved swiftly to the compact array. If anyone has lines that they want observed with ATCA (1-100 GHz, but missing  $\sim 12$  GHz), please contact.

\* Jan Brand: got 30 epochs of time on Medicina to monitor for the expected flare of the 22 GHz water maser.

\* Fannie: Hart will also be able to monitor (up to daily) to follow the water burst.

\* Huib: Deuterated methanol detection very interesting from 3 - 12.5 GHz spectrum report of Yonekura.

- JVLA [PDF](#), [Bayandina \[hyperlink\]](#)

B-configuration maps of 6.7, 12. 23 GHz methanol masers shown in the report. Considering a new proposal of different lines and configuration(s).

\* Shari: Two lines of  $^{13}\text{CH}_3\text{OH}$  have been mapped by the VLA and one line with ATCA (3-antenna array)

- SMA

\* Crystal Brogan (via email): SMA observations conducted on the 14, 22, 26th of March.

- 14 methanol maser transitions from 199 to 362 GHz detected from  $v_t = 0, 1, \text{ and } 2$  states.

- Few, weak thermal lines detected, hopefully this situation will change if we get ALMA data.

- 1.4 mm continuum composed of  $\geq 6$  sources, brightest harbors the millimeter masers.

- All the mm masers arise from the same position.

- SMA has several issues, compounded by [incorrect astrometry of J1744-3116](#).

(Olga: position issue affecting JVLA noted - will be fixed).

- ALMA DDT and regular proposal to be submitted (DDT has since been approved).

- VLBI PDF, Burns [\[hyperlink\]](#)

KVN detected: the 23.1 GHz methanol, 22.7 GHz Ammonia maser - see report above

EVN detected: the 6.7 GHz methanol, 6.18 GHz methanol maser - see report above

LBA observed: 3 epochs (2x Cband, 1x Kband) but not correlated

VLBA approved: DDT C/Ku/K/Q

\* Shari: Beware - some masers detected by ATCA are not associated with G358 and are simply in the field

\* Sugiyama: 6.7 GHz VERA 4 epochs (end of Jan, beginning of March, beginning April, beginning May) - first two epochs correlated, results to be reported soon.

- Others

ALMA DDT proposal

- How best to record and share results (considering sensitive data)

### 3 G358: Interpretation of results so far

Open discussion

G358 is an accreting massive star with high column density and IR radiation field. However it is maybe too early to interpret the results.

### 4 G358: How to proceed

- More proposals? (more epochs) [followup KVN monitoring (KeeTae)]

#### Astrometry

\* Sugiyama: Intend to submit VERA parallax of 22 GHz line

\* Ross and Hirota: Possible to do parallax using the 23.1 GHz methanol maser? We can try a fringe check for feasibility.

#### Continuum luminosity

\* Huib: We need to estimate the luminosity change pre-/post-burst

\* Gabriele: We need a continuum survey of accretion burst candidates to secure pre-burst data

\* Shari: It may be possible to get pre-burst ATCA data from MMB followup and and more data DDT ATCA data

\* Decision: Use available DDT ATCA time for now and write a regular proposal to ATNF by the June deadline

- More proposals (other instruments outside radio/millimeter)  
Nothing discussed
- How to group observational efforts (star formation, chemistry, a balance of both)
- An M2O meeting (Y/N, if Yes: Where? when? what topics?)  
Plan to hold the **first M2O meeting** in Europe before/after the SKA-VLBI and ALMA meetings in October 2019. This will save money for attendees. We will doodle poll dates. I still want to hold a meeting in Tokyo, maybe 2020.
- Slack and the new website

Domain name bought and some progress with setting up a mailing list, more soon. Also, a logo is close to being decided

## 5 Other business

- Visits / collaborations
- Interesting meetings in 2019

SKA-VLBI workshop, Manchester, 14-17 Oct [\[hyperlink\]](#)

ALMA2019, Cagliari, Oct 14-18 [\[hyperlink\]](#)

EAVN symposium to be held in Ibaraki, Japan - maybe end of September 2019

East asian SKA workshop in Shanghai End of May

East asian SKA workshop in Tokyo first week of September

- Other announcements

\* James: reports funding approval of a large machine at Hart for archiving long-term maser monitoring data, and running periodicity searching programs.

### • POLICY

Up to now our publications and data sharing has relied on trust and coordination by email communication. But the scope of M2O has grown much quicker than expected and now we need some 'official' procedure for sharing/publishing results in order to protect observatories by appropriately giving credit, and maximise science impact by coordinated publication.

To be drafted by a small group, then refined (and approved) by the M2O community as a whole.