

M2O Newsletter, No. 12

The main news items this month:

- 1. Proposal deadlines:** EVN (1st June) [link](#); EAVN (15th June) [link](#); LBA (16th June) [link](#)
- 2. Chen et al.:** Progression to the second stage of peer review with Nature Astronomy!
- 3. Media:** We've been featured in Astronomy Now magazine ([link to online article](#)) which will go to print in the July 2020 edition. Its a popular UK monthly astro magazine, copies can be bought on the website.
- 4. EVN symposium postponed:** The new dates are 12-16 July 2021, registration will reopen soon.

1 Activity since the previous Newsletter

- **SamePage:** +0, total 62 members
- **Papers accepted:** +0. Total: 13
- **Papers under review:**
Chen et al., Nature Astronomy, second review stage.
Volvach et al., MNRAS, second review stage.
- **News on papers in prep:**
Several new additions shown in blue in Record Keeping
- **M2O targets:**

Name	Maser [GHz]	Pre-burst Flux [Jy]	Max Flux [Jy]	Current Flux [Jy]	Reported by	Reobserved by	Status
Orion S6	6.7	3.1	7.5	5	Yonekura	Ib, Tr, Sz, Hh	active
G85.411+0.002	6.7	12	88	88	Yonekura	Ib, Ef, Sz, Tr, Hh, Ky, Vs	active
G33.641-0.228	6.7	-	236	236	Bringfried	Hh, Ib, Vs	active
IRAS 16293-2422	22	-	30k	24k	Sunada, Mc	Vr, Mc, Hh, Sz, Ib	active
NGC2071	22	1k	7k	920	Sunada, Hh	Vr, Hh, Sz, Ib	post-burst
G53.22-0.08	22	3	800	30	Sunada	Vr, Hh, Ib	post-burst
G358.93-0.03	6.7	5	1000	48	Yonekura	Hh, Ib	post-burst
G24.33+0.14	6.7	-	800	10	Torun	Hh, Ib, Vs	post-burst
G25.65+1.05	22	-	60k	2150	-	Hh, Sz	post-burst

(Ib = Ibaraki) (Tr = Torun) (Sz = Simeiz) (Hh = HartRAO) (Ef = Effelsberg) (Ky = KVN Yonsei) (Vs = Ventspil) (Vr = VERA stations) (Mc = Medicina)

- **Follow-up observations conducted (see Record Keeping for details):**
[Orion-S6 and NGC2071](#), KaVA, K/Q/W/D, 11 May 2020
[G85](#), VLBA, L/C/Ku/K, 22 May 2020
- **New observing proposals:**
EVN revised triggerable ToO (RB), in prep. (deadline 01/JUN/2020)
KaVA revised triggerable ToO (RB), in prep. (deadline 15/JUN/2020)
LBA revised triggerable ToO (RB), in prep. (deadline 16/JUN/2020)
JWST triggerable ToO (A.C.o.G), in prep.
- **Active trigger proposals:**

Array	Code	Grade	Hours granted	Hours remaining	Active period	Resubmit deadline
EVN	RB007	1.3 / 5.0 (0 is best)	96	96	15/SEP/2019 - 15/SEP/2020	01/JUN/2020
KaVA	EAVN20A-160	7.3 / 10.0 (10 is best)	48	24	01/FEB/2020 - 01/JUL/2020	15/JUN/2020
LBA	V581	4.0 / 5.0 (5 is best)	-	-	-	16/JUN/2020
VLBA	BB418	1.82 / 10.0 (0 is best)	48	48	01/AUG/2020 - 01/AUG/2021	01/FEB/2021

Record keeping

2 M2O Publications

No.	Target	Facility	Author	Frequency (GHz)	Status	Ref	Journal
1	W49N	Sm, Tr	Volvach+	22.2	Published	(1)	MNRAS_L
2	W49N	Sm, Tr, Mc, Ef	Volvach+	22.2	Published	(2)	A&A
3	W49N	Sm, Tr, Mc, Ef, Kvazar	Volvach+	22.2	Published	(3)	Ast.Rep.
4	W49N		Volvach+		2nd review		MNRAS
5	G25	VLA	Bayandina+	6.7, 12.2, 22	Published	(4)	ApJ
6	G25	Sim/Hh/Tr	Volvach+	22	Published	(5)	MNRAS_L
7	G25	KVASAR	Volvach+	22	Published	(6)	Ast.Rep.
8	G25	EVN	Burns+	22	Published	(7)	MNRAS
9	G25		Aberfelds+	22	in prep		-
10	G25		Bayandina+	12.2, 23.1	in prep		-
11	G25		MacCleod+	6.7, 22	in prep		-
12	G358	ATCA	Breen+	mm	Published	(8)	ApJ
13	G358	ALMA-SMA	Brogan+	mm	Published	(9)	ApJL
14	G358	Hh	MacCleod+	New Methanol masers	Published	(10)	MNRAS
15	G358	LBA	Burns+	6.7	Published	(11)	Nat.Ast.
16	G358	VLA	Chen+	multiple lines methanol	Published	(12)	ApJL
17	G358	VLA	Chen+	Methanol	in review		Nat. Ast.
18	G358		MacCleod+	6.7 GHz monitoring	in prep		-
19	G358		MacCleod+	6.2, 12.2, 20.3, 20.9	in prep		-
20	G358	VLA	Bayandina+	6.7, 12.2, 22.2	in prep		-
21	G358	SOFIA	Stecklum+	FIR	in prep		A&A_L
22	G358	Sm and Hh	Volvach+	19.9, 20.9	Published	(13)	MNRASL
23	G358	ATCA	Breen+	Rare transitions	in prep		-
24	G24.33	EVN, VLBA	Olech+	6.7, 12.2, 22.2	in prep		-
25	G24.33	Tr	Olech+	OH, Meth	in prep		-
26	G24.33	Hh	v. d. Heever+		in prep		-

References

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- [2] Volvach, L. N. *et al.* Flaring water masers associated with W49N. *A&A* **628**, A89 (2019).
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- [4] Bayandina, O. S., Burns, R. A., Kurtz, S. E., Shakhvorostova, N. N. & Val'tts, I. E. JVLA overview of the bursting H₂O maser source G25.65+1.05. *arXiv e-prints* arXiv:1812.11353 (2018). [1812.11353](https://arxiv.org/abs/1812.11353).
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- [11] Burns, R. A. *et al.* A heatwave of accretion energy traced by masers in the G358-MM1 high-mass protostar. *Nature Astronomy* **10** (2020).
- [12] Chen, X. *et al.* ¹³CH₃OH Masers Associated With a Transient Phenomenon in a High-mass Young Stellar Object. *ApJL* **890**, L22 (2020).
- [13] Volvach, A. E. *et al.* Monitoring a methanol maser flare associated with the massive star-forming region G358.93-0.03. *MNRAS* (2020).

M2O follow-up data

No.	Target	Facility	Date	Frequency (GHz)	Code	PI/comment
1	G25	VLA	Oct 2017	6.7, 12.2, 22	17B-408	OB / Reduced
2	G25+W49N	EVN	Oct 2017	22	RB004	RB / Reduced
3	G25+W49N	KaVA	Oct 2017	22	K17RB01A	RB / Reduced
4	G25+W49N	VLBA	Oct 2017	22	BO058	GO / Reduced
5	G25	VERA	2007-2013	22, 16 x epochs	[archival]	K. Motogi / mostly Reduced
6	G358	VERA	31 Jan 2019	6.7	-	SY / Reduced
7	G358	VERA	3 Mar 2019	6.7	-	SY / Reduced
8	G358	VERA	1 Apr 2019	6.7	-	SY / Reduced
9	G358	VERA	3 May 2019	6.7	-	SY / Reduced
10	G358	LBA	2 Feb 2019	6.7	vc026a	RB / Reduced
11	G358	LBA	3 Feb 2019	23.1	vc026b	GO / QuickLook
12	G358	LBA	28 Feb 2019	6.7	vc026c	RB / Reduced
13	G358	EVN	13 Mar 2019	6.7, <u>6.18</u>	RB005	RB / QuickLook
14	G358	KVN	25 Mar 2019	22, 44, 95, 120	n19rb01a	RB / QuickLook
15	G358	VLBA	19 May 2019	6.7, 12.2, 23.1	BB414	RB / QuickLook
16	G358	VLBA	7 Jun 2019	6.7, 12.2, 20.7	BB412	RB / Correlated
17	G358	LBA+E.Asia	17 May 2019	7.6, 7.8	vx028a	GO,SE / QuickLook
18	G358	SOFIA	30 April 2019	50...120 μ m		BS,JE
19	G358	GROND	8 Feb 2019	NIR		HL,BS,AC
20	G358	SMA	several 2019	mm		THunter,CB
21	G358	ALMA	several 2019	Bands 5,6,7		CB
22	G358	VLA	2019	GHz	-	OB
23	G358	VLA	2019	GHz	-	OB
24	G358	VLA	2019	HNCO	-	XC,AS
25	G24	LBA	8 Sep 2019	6.7	vx026d	RB,MO / not correlated
26	G24	LBA	13 Sep 2019	6.7	s002a	RB,MO / not correlated
27	G24	LBA	28 Sep 2019	6.7	v581a	RB,MO / not correlated
28	G24	EVN	22 Sep 2019	22	RB006A	RB,MO / QuickLook
29	G24	EVN+Merlin	7 Oct 2019	6.7	RB006B	RB,MO / QuickLook
30	G24	EVN+Merlin	17 Nov 2019	1.667	RB007	RB,MO / correlated
31	G24	VLBA	27 Sep 2019	6.7, 12.2, 22	BB416A	RB,MO / QuickLook 1,0,1
32	G24	VLBA	27 Oct 2019	6.7, 12.2, 22	BB416B	RB,MO / correlated
33	G24	VLBA	02 Dec 2019	6.7, 12.2, 22	BB416C	RB,MO / correlated
34	G24	ALMA	26 Sep 2019	Band6	-	THirota / QuickLook
35	G24	SOFIA	25 Oct 2019	FIR		BS,JE
36	G24	ATCA	26 Nov 2019	K-band	C3321	GO,SB
37	G24	ATCA	27 Nov 2019	C-band	C3321	GO,SB
38	NGC2071, Ori-S6	KaVA	13 Mar 2020	22/44/95/130	a20d3a	RB / QuickLook
39	NGC2071, Ori-S6	KaVA	16 Apr 2020	22/44/95/130	a20d3b	RB / not correlated
40	NGC2071, Ori-S6	KaVA	11 May 2020	22/44/95/130	a20d3c	RB / not correlated
41	G85	VLBA	22 May 2020	L/C/Ku/K	BB421B	RB / QuickLook
42	G85	VLBA	24 Apr 2020	L/C/Ku/K	BB421A	RB / not correlated

Reminder:

All **G358** papers should include a member from the [Ibaraki](#) team in the author list and an acknowledgement of their funding.

All **G24.33** papers should include a member from the [Torun](#) team in the author list and an acknowledgement of their funding.

All **Orion-S6** papers should include a member from the [Ibaraki](#) team in the author list and an acknowledgement of their funding.

All **NGC2071** papers should include a member from the [VERA / Sunada](#) team in the author list and an acknowledgement of their funding.

All **G85** papers should include a member from the [Ibaraki](#) team in the author list and an acknowledgement of their funding.

Data:

If you are interested in any of the data listed above do not hesitate to contact the PI.

Next Newsletter / Telecom: 30th June 2020, 18:00 JST