

SVOM Science Workshop
2019 May 18 – Gaochun (Jiangsu province)

SVOM and the half O3 campaign

4th SVOM Scientific Workshop, 2019-09-15, Nanning
Nicolas Dagoneau (nicolas.dagoneau@cea.fr), CEA/AIM

On behalf the SVOM MMA and GWAC teams



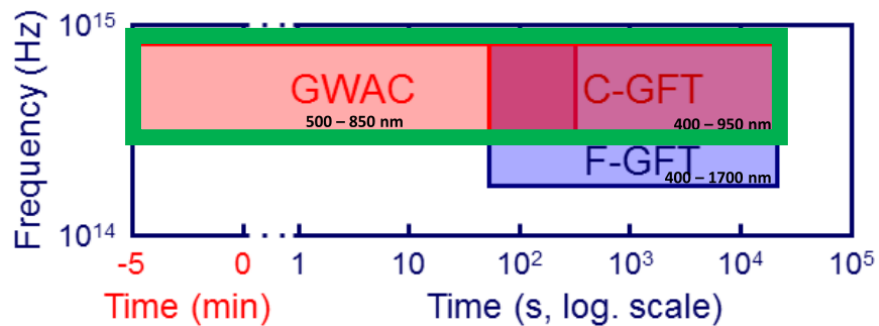
The SVOM instruments (already in operations)



1.2m C-GFT at Jilin



F60A, F30 and GWAC at Xinglong



The SVOM BA/MMA training

Main goal : **train our BA system** (and not science) including:

- Face unknown issues since we are the first to do real time operations between France and China
 - Communication with China (may be difficult, eg. Zoom Video Communication does not work since 08/09/19 → See Cyril's talk)
 - Follow-up procedure
- ➔ To be ready do to science by 2022, we have to train now.

The SVOM activities during 03: summary

1 Team of French and Chinese advocates (~ 30 people)

33 “real” alerts received (on 2019-09-30 before the 03 break → 2019-10-31):

- 12 were followed with GWAC (and possibly F30/F60)
- 6 were received during GWAC maintenance
- 14 were not observed (bad weather or not visible)
- 13 GCN circulars send (10 alerts)

Observations:

- Errorbox tilling with GWAC
- Galaxy targeting with F30/F60

The SVOM activities during 03: tools

3 different time scale → 3 different tools (have to be accessible from China)

Slack for the alert reception and chat about the follow-up



Server in China (NAOC) for the follow-up monitoring



Redmine as an archive

<https://forge.in2p3.fr/projects/multimessenger-wg/wiki/MMACT03>

+ WeChat

The SVOM activities during 03: Slack

SVOM-03 ▾
Nicolas Dagoneau

Accéder à... < >

Fils de discussion

Favoris

gwalert

Chaînes +

- # ba_web_interface
- # chat_with_oa
- # general
- # gwalert_followup_res
- # gwalert_obsplan
- # instrument_status
- # random
- # shifters
- # xinglongobsinfo

+ Ajouter une chaîne

Messages directs +

- ♥ Slackbot
- Nicolas Dagoneau (vous)
- Alexis Coleiro
- Chao WU
- Cyril Lachaud

#gwalert
★ | 28 | 0 | Ajouter un thème

Hier

Recherche

GW alert

GW NAME : S190924h Trigger Time: 2019-09-24T02:18:46.846654
Instruments: H1,L1,V1
EventPage: <https://gracedb.ligo.org/superevents/S190924h/view/>
Search: CBC
HasRemnant: 0.0
Delay since alert: 0:06:08.408828

incoming-webhook APPLI 5 h 04

new GCN notice

ID : S190924h with status Initial
EventPage: <https://gracedb.ligo.org/superevents/S190924h/view/>
Observation program launched

GW alert

GW NAME : S190924h Trigger Time: 2019-09-24T02:18:46.846654
Instruments: H1,L1,V1
EventPage: <https://gracedb.ligo.org/superevents/S190924h/view/>
Search: CBC
HasRemnant: 0.0
Delay since alert: 0:45:13.872291

Envoyer un message à #gwalert

The SVOM activities during 03: Slack

SVOM-03

● Nicolas Dagoneau

Accéder à... < >

Fils de discussion

Favoris

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#general | 37 | 1 | Annonces adressées à l'ensemble de l'entreprise et informations relatives au travail

Aujourd'hui

Recherche

ducoin Jean-grégoire 11 h 03

hi @Damien Turpin there is no mass gap classification in the web interface?!

ducoin Jean-grégoire 11 h 08

@Xuhui Han, There is no observations reported on the web interface for S190923y. Can you confirm me that no observation was made ?

Nicolas Leroy 11 h 33

@ducoin Jean-grégoire I need to add mass gap, will do it before the Nanning meeting

1

Damien Turpin 11 h 40

Yes @Nicolas Leroy quick quick before the LVC break ! 😊

Damien Turpin 11 h 45

@ducoin Jean-grégoire after discussing with @Xuhui Han normally no obs done because of moon constraints. @Xuhui Han told me he is going to check carefully tomorrow. From the web interface nothing has been reported, not good a sign for observations

ducoin Jean-grégoire 11 h 45

ok thx

Damien Turpin 14 h 46

Hi @Chao WU, the status of the observed tiles (at least GWAC) can be seen here http://cmm.svom.cn/SVOM_BA_interface/GRB_prompt_manage.php?trigger_IDinDB=4752 for S190924h

For S190923y if something happened the status is here : http://cmm.svom.cn/SVOM_BA_interface/GRB_prompt_manage.php?trigger_IDinDB=4729

@ducoin Jean-grégoire

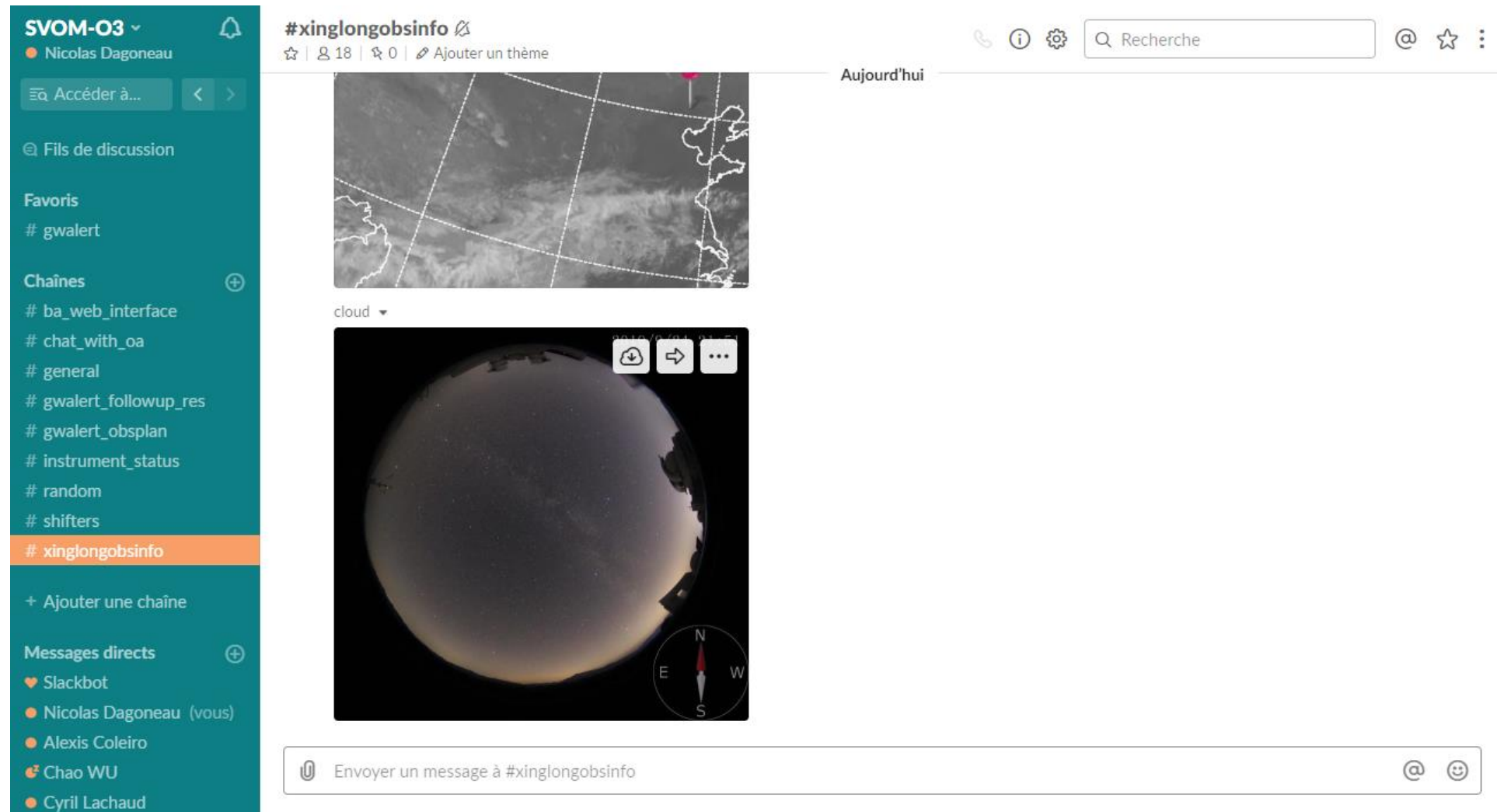
1

But for both alerts while the night is clear, the moon is too close normally

We are really not lucky

Envoyer un message à #general

The SVOM activities during 03: Slack



The SVOM activities during 03: server

We have to develop our own tool since it has to get data from Chinese server.

On this server, BA can :

- See shift calendar
- Monitor alerts reception and observation plan
- Monitor instruments status and weather
- Make a report

Bienvenue / 欢迎
Nicolas Dagoneau!

YOU ARE NOT ON DUTY.

Your next shift will be from **2019-10-21** to **2019-10-27** in **27.4** days.

Check the calendar of the BA shifts here: [BA CALENDAR](#)

CHOOSE THE MODE YOU WANT TO USE FOR THE SVOM BA TOOLS



This tool have been develop by Damien Turpin (NAOC) 9

The SVOM activities during 03: server

Remote Calendar						
Today		Jump to:		Go		
Day		Week		2 Weeks		Month
Sep 1, 2019	Mon 2	Tue 3	Wed 4	Thu 5	Fri 6	Sat 7
S190101ap 12:00am WEI Jianyan (... 10:00am Merieme Cha... 10:00pm WEI Jianyan (...	12:00am Xuhui HAN (Li... 10:00am Sarah ANTIER... 10:00pm Xuhui HAN (Li...	12:00am Xuhui HAN (Li... 10:00am Sarah ANTIER... 10:00pm Xuhui HAN (Li...	12:00am Xuhui HAN (Li... 10:00am Sarah ANTIER... 10:00pm Xuhui HAN (Li...	12:00am Xuhui HAN (Li... 10:00am Sarah ANTIER... 10:00pm Xuhui HAN (Li...	12:00am Xuhui HAN (Li... 10:00am Sarah ANTIER... 10:00pm Xuhui HAN (Li...	12:00am Xuhui HAN (Li... 10:00am Sarah ANTIER... 10:00pm Xuhui HAN (Li...
8	9	10	11	12	13	14
12:00am Xuhui HAN (Li... 10:00am Sarah ANTIER... 10:00pm Xuhui HAN (Li...	12:00am Liping Xin (Xu... 10:00am Nicolas Leroy ... 10:00pm Liping Xin (Xu...	S190910d S190910h 12:00am Liping Xin (Xu... 10:00am Nicolas Leroy ... 10:00pm Liping Xin (Xu...	12:00am Liping Xin (Xu... 10:00am Nicolas Leroy ... 10:00pm Liping Xin (Xu...	12:00am Liping Xin (Xu... 10:00am Nicolas Leroy ... 10:00pm Liping Xin (Xu...	12:00am Liping Xin (Xu... 10:00am Nicolas Leroy ... 10:00pm Liping Xin (Xu...	12:00am Liping Xin (Xu... 10:00am Nicolas Leroy ... 10:00pm Liping Xin (Xu...
15	16	17	18	19	20	21
S190915ak 12:00am Liping Xin (Xu... 10:00am Nicolas Leroy ... 10:00pm Liping Xin (Xu...	12:00am Damien Turpi... 10:00am David Corre (... 10:00pm Damien Turpi...	12:00am Damien Turpi... 10:00am David Corre (... 10:00pm Damien Turpi...	12:00am Damien Turpi... 10:00am David Corre (... 10:00pm Damien Turpi...	12:00am Damien Turpi... 10:00am David Corre (... 10:00pm Damien Turpi...	12:00am Damien Turpi... 10:00am David Corre (... 10:00pm Damien Turpi...	12:00am Damien Turpi... 10:00am David Corre (... 10:00pm Damien Turpi...
22	23	Today 5:35pm	25	26	27	28
12:00am Damien Turpi... 10:00am David Corre (... 10:00pm Damien Turpi...	S190923y 12:00am chao wu (Da... 10:00am Jean-Gregoire... 10:00pm chao wu (Da...	S190924h 12:00am chao wu (Da... 10:00am Jean-Gregoire... 10:00pm chao wu (Da...	12:00am chao wu (Da... 10:00am Jean-Gregoire... 10:00pm chao wu (Da...	12:00am chao wu (Da... 10:00am Jean-Gregoire... 10:00pm chao wu (Da...	12:00am chao wu (Da... 10:00am Jean-Gregoire... 10:00pm chao wu (Da...	12:00am chao wu (Da... 10:00am Jean-Gregoire... 10:00pm chao wu (Da...
29	30	Oct 1	2	3	4	5
12:00am chao wu (Da... 10:00am Jean-Gregoire... 10:00pm chao wu (Da...	12:00am Xiang-Gao Wa... 10:00am Cyril Lachaud... 10:00pm Xiang-Gao Wa...	12:00am Xiang-Gao Wa... 10:00am Cyril Lachaud... 10:00pm Xiang-Gao Wa...	12:00am Xiang-Gao Wa... 10:00am Cyril Lachaud... 10:00pm Xiang-Gao Wa...	12:00am Xiang-Gao Wa... 10:00am Cyril Lachaud... 10:00pm Xiang-Gao Wa...	12:00am Xiang-Gao Wa... 10:00am Cyril Lachaud... 10:00pm Xiang-Gao Wa...	12:00am Xiang-Gao Wa... 10:00am Cyril Lachaud... 10:00pm Xiang-Gao Wa...


1 Chinese + 1
French advocates
per week (+ 2
backup)

The SVOM activities during 03: server

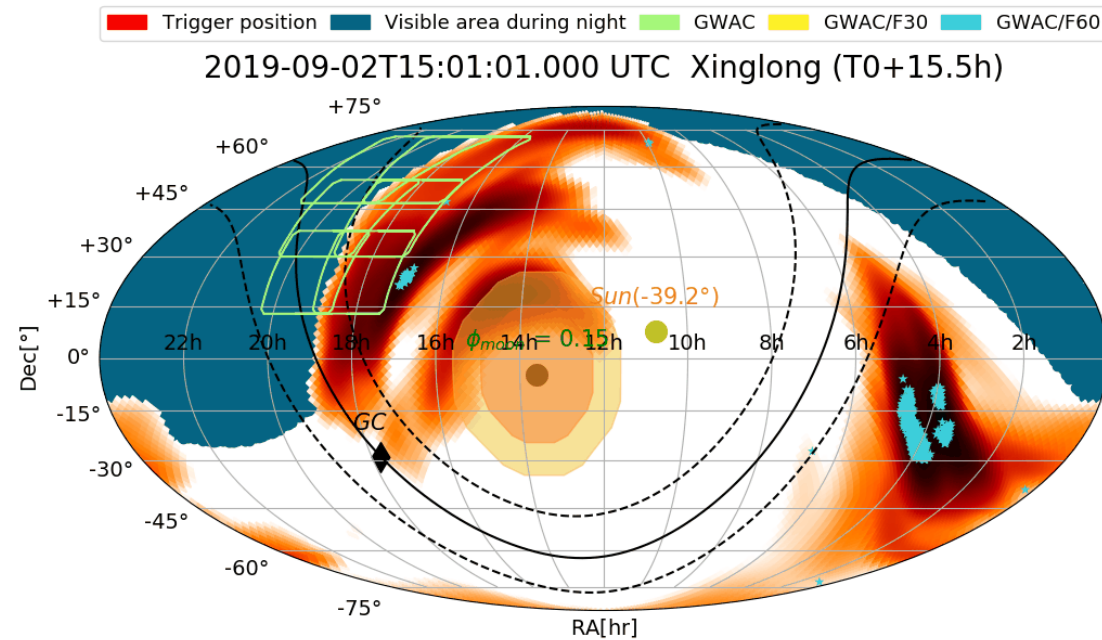
	Chinese (0am - 10pm / 10pm - 12 pm)														French (10am - 10pm)										
UTC	SEP 25	1 am	2 am	3 am	4 am	5 am	6 am	7 am	8 am	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	4 pm	5 pm	6 pm	7 pm	8 pm	9 pm	10 pm	11 pm	
Paris (UTC+2)	2 am	3 am	4 am	5 am	6 am	7 am	8 am	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	4 pm	5 pm	6 pm	7 pm	8 pm	9 pm	10 pm	11 pm	THU SEP 26	1 am	
Beijing (UTC+8)	8 am	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	4 pm	5 pm	6 pm	7 pm	8 pm	9 pm	10 pm	11 pm	THU SEP 26	1 am	2 am	3 am	4 am	5 am	6 am	7 am	

The SVOM activities during 03: redmine

All alerts received are stored in the archive with summary of operations.

Trigger	Nature	Facility	Distance Mpc	90% area deg2	SVOM 1st obs. after T0	GWAC cov.	F30 Tiles Obs/Prog	F60 Gal Obs/Prog	Spectro	GCN
S190930t	NSBH	L1	108	24220	-	-	-	-	No	No
S190930s	MassGap	H1,L1	752	1998	0 min	77.2%	No	No	No	Yes
S190915ak	BBH	H1,L1,V1	1557.21	528.13	No obs	No	No	No	No	No
S190910h	BNS	L1	241	24226	No obs	No	No	No	No	No
S190910d	NSBH	L1,H1	632	2482	No obs	No	No	No	No	No
S190901ap	BNS	L1,V1	242	4176	~T0+21h	21.1%	50/50 (need to check)	500/500 (need to check)	No	Yes
S190829u	retracted									
S190828l	BBH	H1,L1,V1	1609	948	~T0+5h30	9.5%		No	No	Yes
S190828j	BBH	H1,L1,V1	2276	587	~T0+5h	19.6%		No	No	Yes
S190822c	 retracted									
S190816i	retracted									

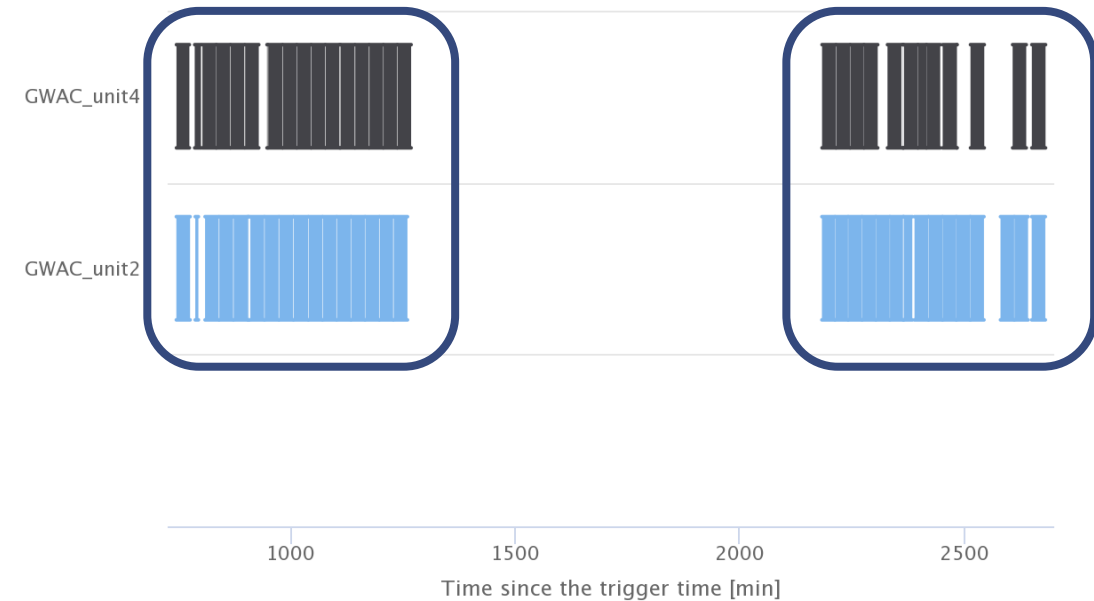
Example for S190901ap



Observations made for the trigger : S190901ap

First night (T0+12.5h)

Second night



Highcharts.com

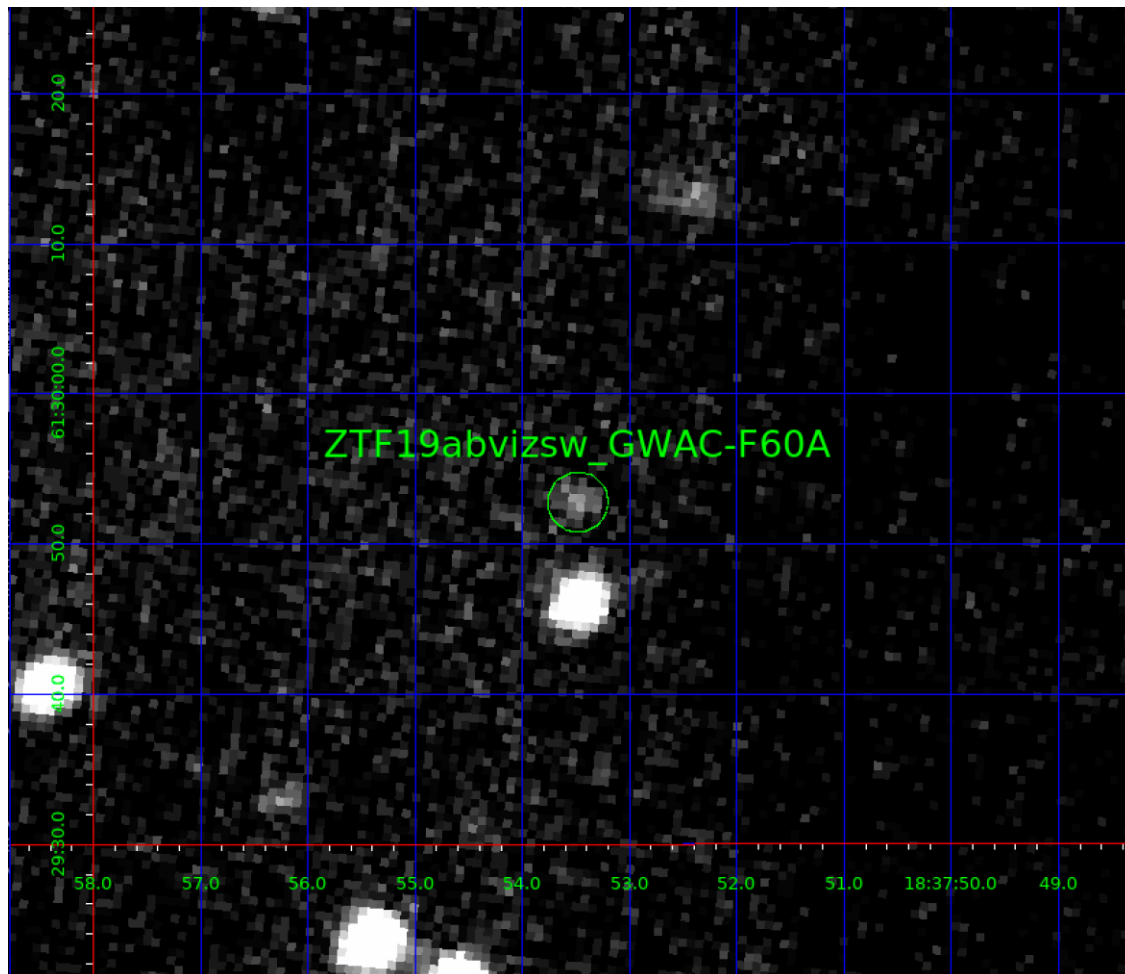
Example for S190901ap

Obs ID	Field ID	RA mount [deg]	dec mount [deg]	Pointing grade	Obs. type	Telescope	Status	Last update	#images	#OT
551	12010765	120.13	76.5	0.0031	tiling	GWAC_unit4	break	2019-09-03 14:52:54	✗	✗
553	7590425	75.99	42.5	0.0043	tiling	GWAC_unit4	break	2019-09-03 16:54:16	✗	✗
560	29310425	293.11	42.5	0.0088	tiling	GWAC_unit4	break	2019-09-03 14:54:46	✗	✗
564	16810765	168.18	76.5	0.012	tiling	GWAC_unit2	break	2019-09-03 14:54:55	✗	✗
565	21620765	216.23	76.5	0.0147	tiling	GWAC_unit4	break	2019-09-03 14:53:49	✗	✗
552	4700255	47.06	25.5	0.0034	tiling	GWAC_unit2	complete	2019-09-03 16:21:27	✗	✗
554	30030595	300.32	59.5	0.0044	tiling	GWAC_unit4	complete	2019-09-03 16:16:38	✗	✗
555	29170255	291.75	25.5	0.007	tiling	GWAC_unit4	complete	2019-09-03 15:45:48	✗	✗
556	26420765	264.28	76.5	0.0072	tiling	GWAC_unit4	complete	2019-09-03 15:26:44	✗	✗
557	9900085	99	8.5	0.0077	tiling	GWAC_unit4	complete	2019-09-03 20:11:17	✗	✗

BA can follow observation status (received, complete, break).

→ Soon, we can get images and OT search results.

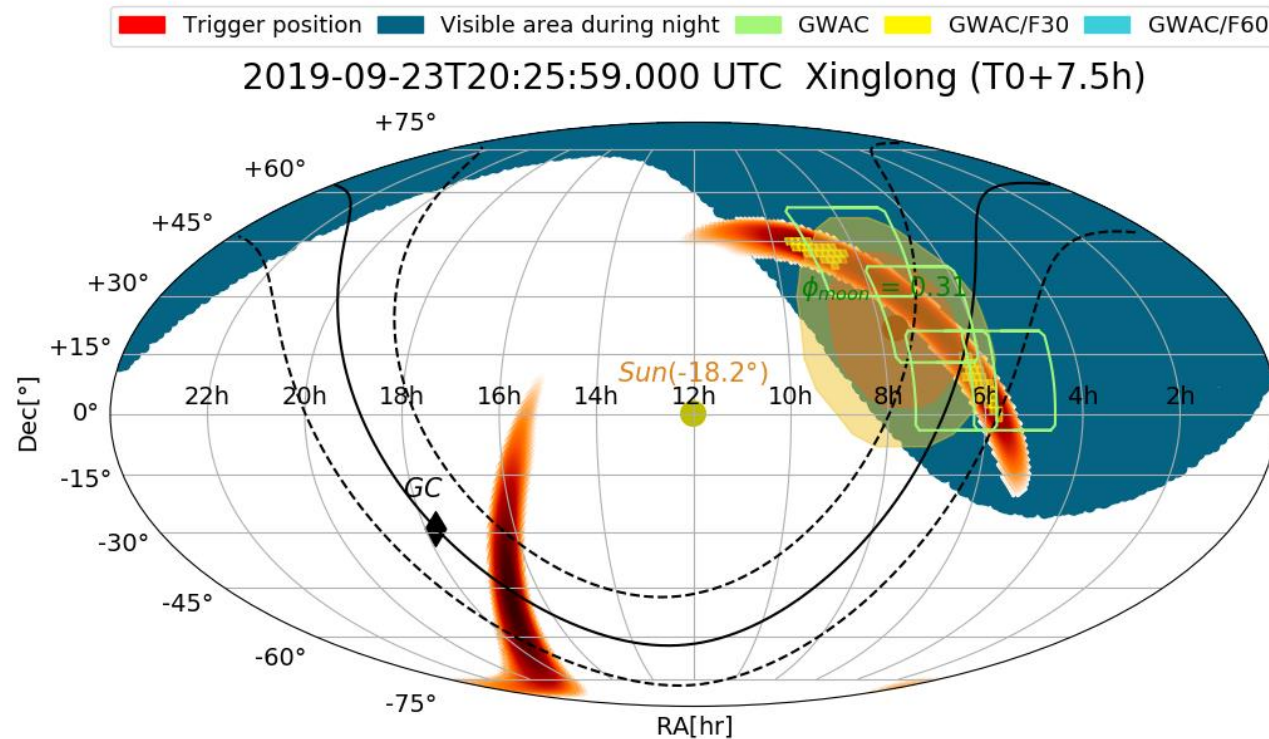
Example for S190901ap



F60A followed ZTF19abvizsw candidate (GCN 25640) on first night ($T_0 + 17\text{h}$).

- Observations from 17:28:07 to 18:45:07 UT on 02th, Sep. 2019.
- Stacking images: 31 x 150 sec
- $R = 20.53 \pm 0.16 \text{ mag}$

Another example for S190923y



This one was not observed due to
Moon constrains

What's next?

- Continue the training
- Continue the development of the “homemade” tools (results of observations, images, OTs...)
- Write specifications for the development of “official” tools (by end of October)

Thank you!