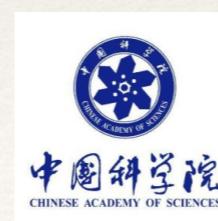


The SVOM Follow-up Network Facilities for O3: Status and Observation Strategy

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Guangxi University. 2019

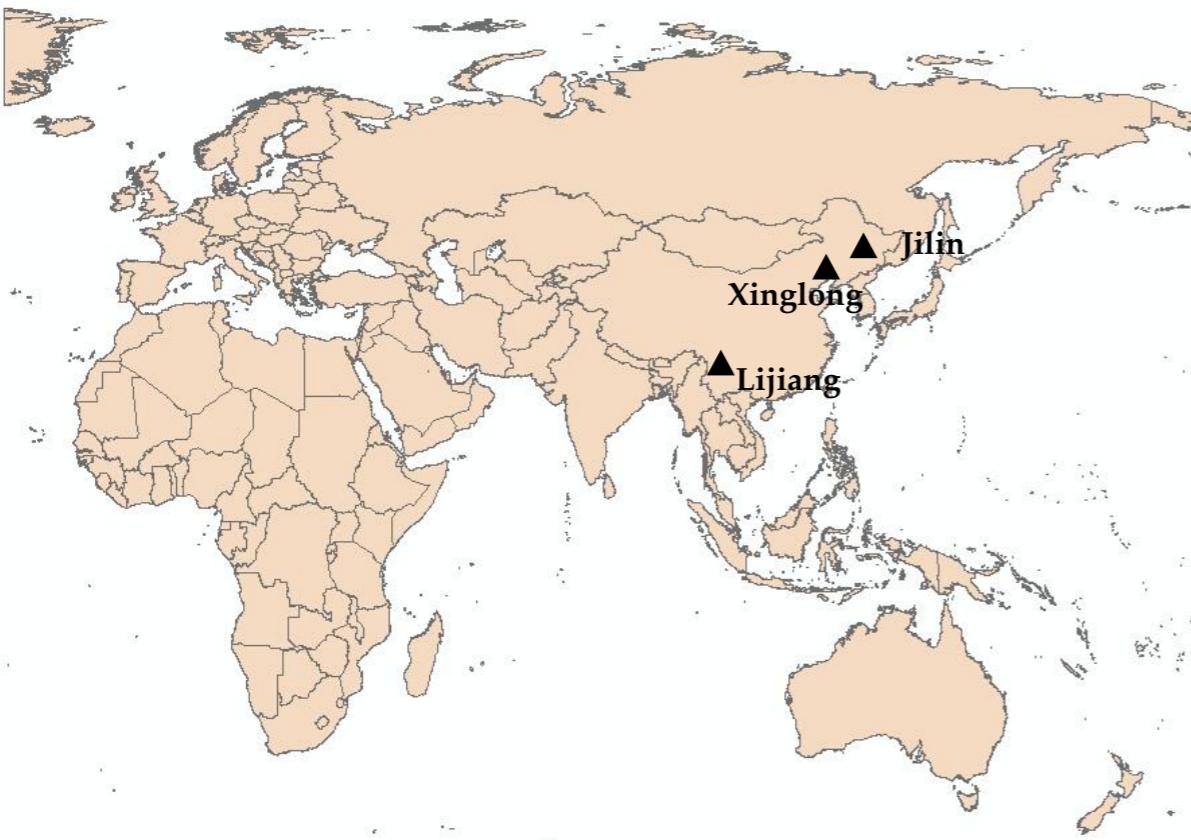


Outlines

- ❖ SVOM Follow-up Network Facilities Overview
- ❖ Facility Status
- ❖ Observation Strategy

SVOM follow-up network overview

Present...



CGFT telescope @ Jilin
observatory, China



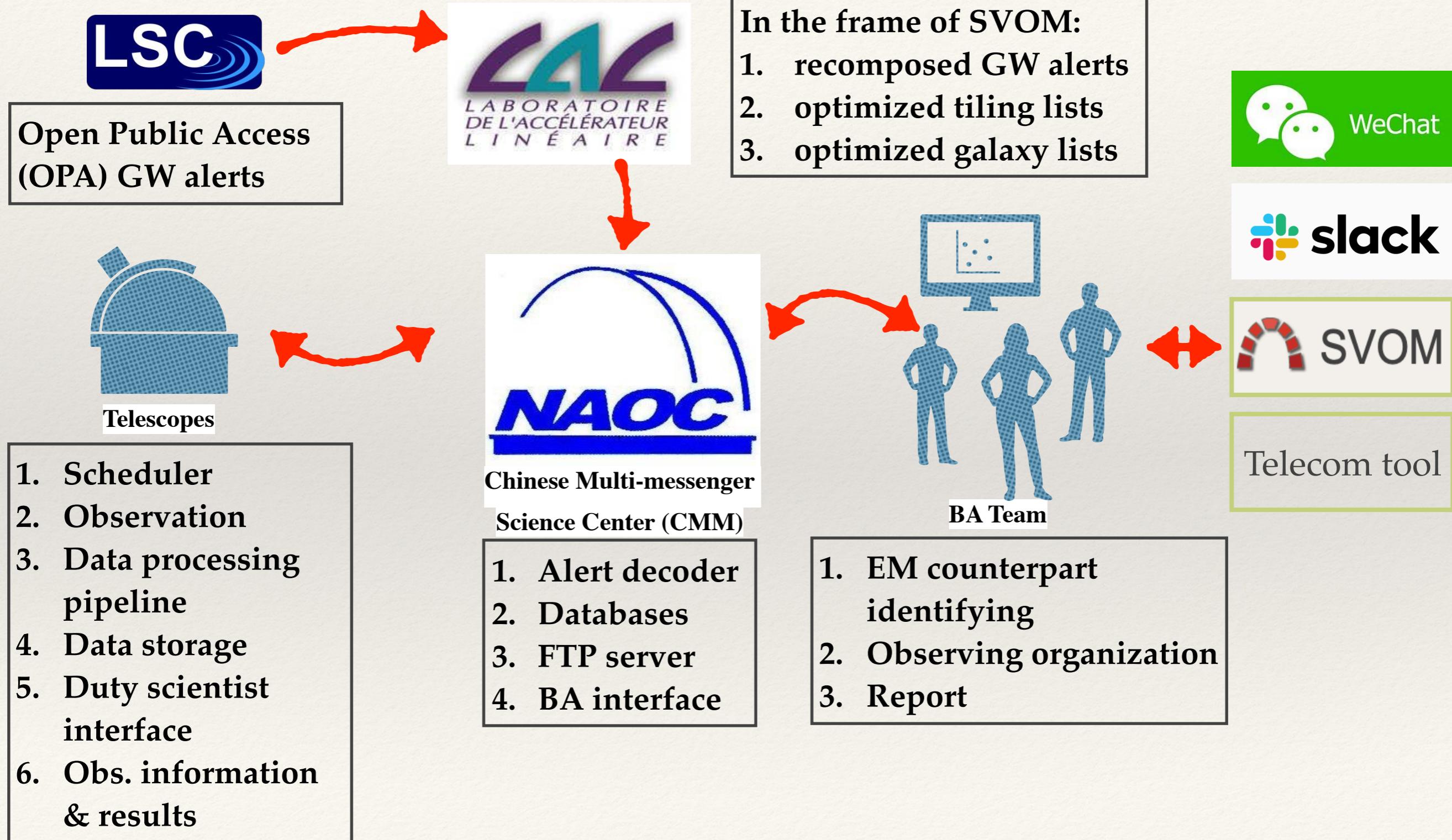
GWAC, 2.16m telescope @ Xinglong
observatory, China



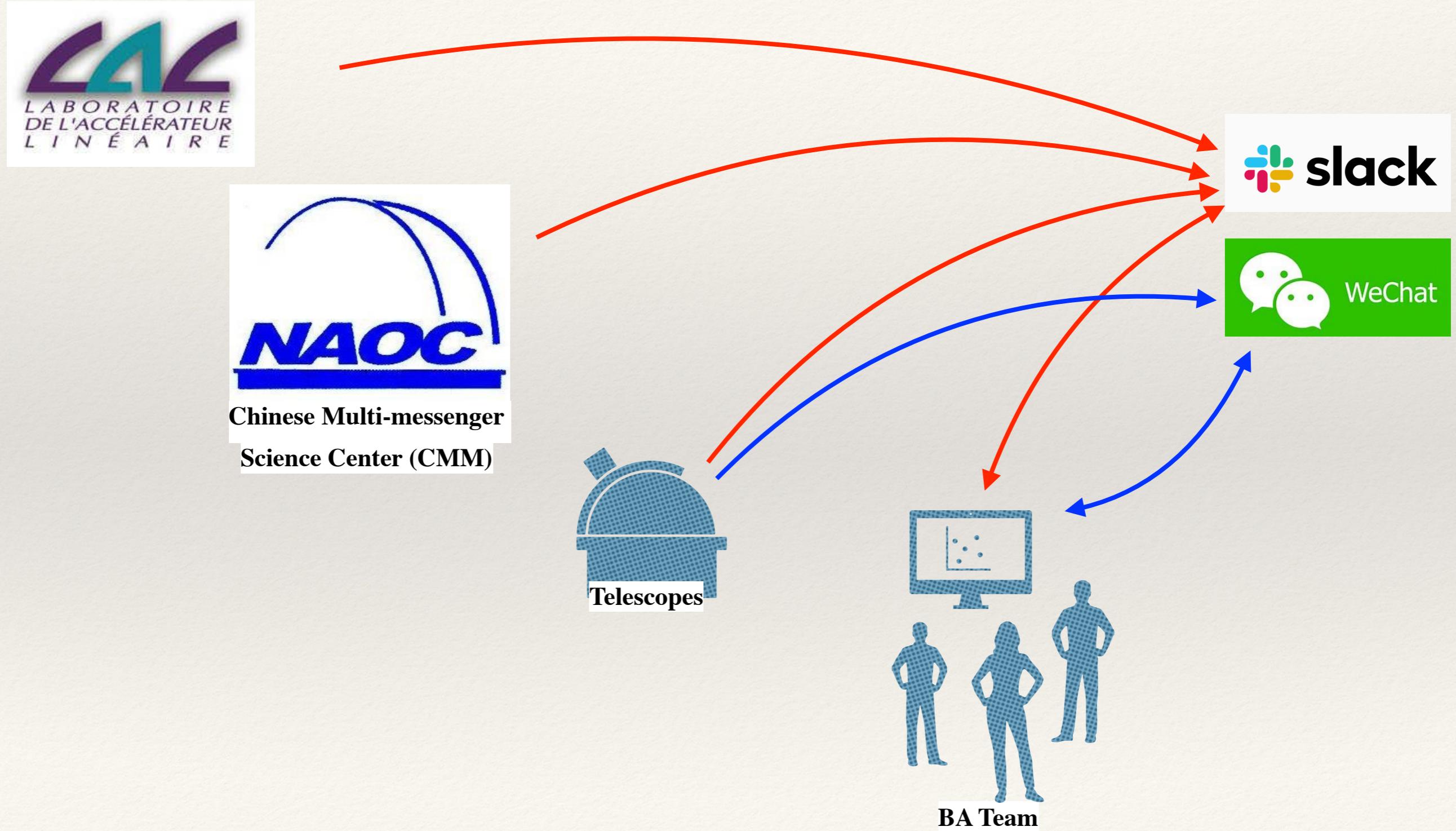
2.4m telescope @ GMG
(Lijiang) observatory, China



SVOM follow-up network overview



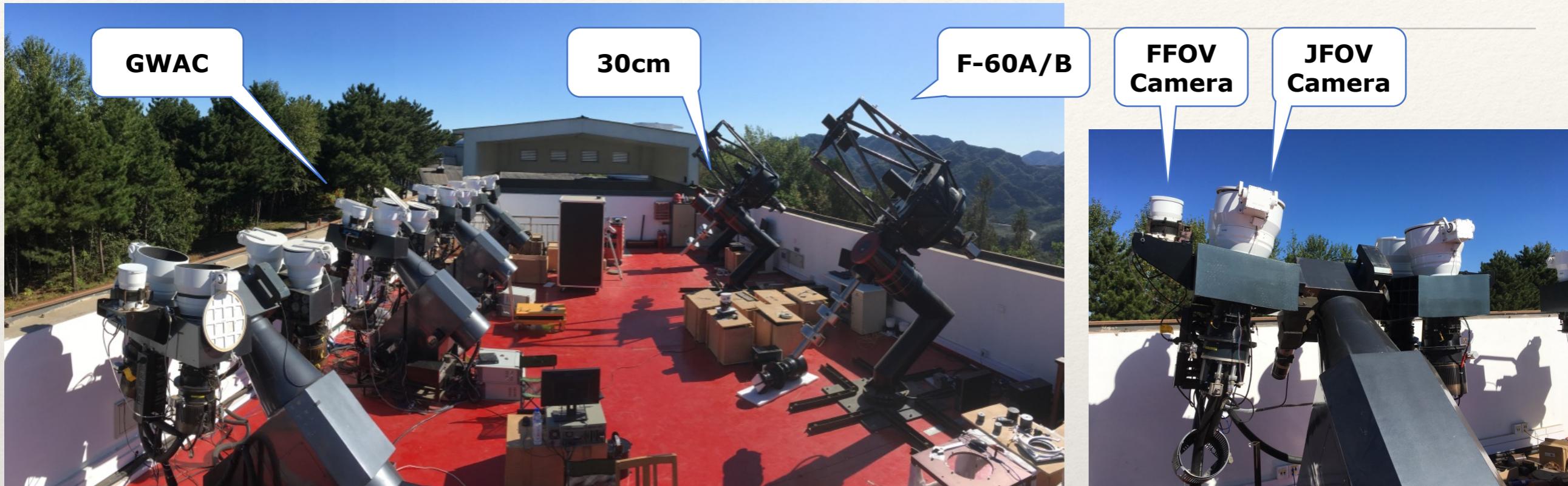
SVOM follow-up network overview



Outlines

- ❖ SVOM Follow-up Network Facilities Overview
- ❖ Facility Status
- ❖ Observation Strategy

Facility Status: GWAC



Telescope	Num	Location	Aperture (cm)	FoV	Filter	m_{limt} [Single/Stack]	Camera Num	Obs. mode for ToO
GWAC	3 / 4	Xinglong	18 (JFOV)	12.5°x12.5°	Clear	16/17	12	Tiling
			3.5 (FFOV)	25°x25°	Clear	?	3	Tiling
F-60A/B	2	Xinglong	60	10'x10' (1K CCD) 18'x18' (2K)	Clear, BRI	18/19		Galaxy targeting
30cm	1	Xinglong	30	1.8°x1.8°	Clear,BRI	16.5/17		Tiling

Facility Status: GWAC

Hardware Status

GWAC

Available: 2 GWAC, Not available: 1 GWAC has CCD, shutter problem

GWAC CCD

Update: liquid cooling. Problem: dew condensation

F60A/B

Available: 1 F60, Not available: 1 F60's CCD is being repaired

F30

Available



Facility Status: GWAC

Software Status

Telescope Controling

Automatic. F60 controller needs to be updated for GW follow ups.

Scheduling

Dynamic scheduling

Observation Strategy

Joint tiling & galaxy targeting

Data Process

Realtime data processing. To be updated for GW counterpart searching

Data management

To be updated for GW or ToO data management

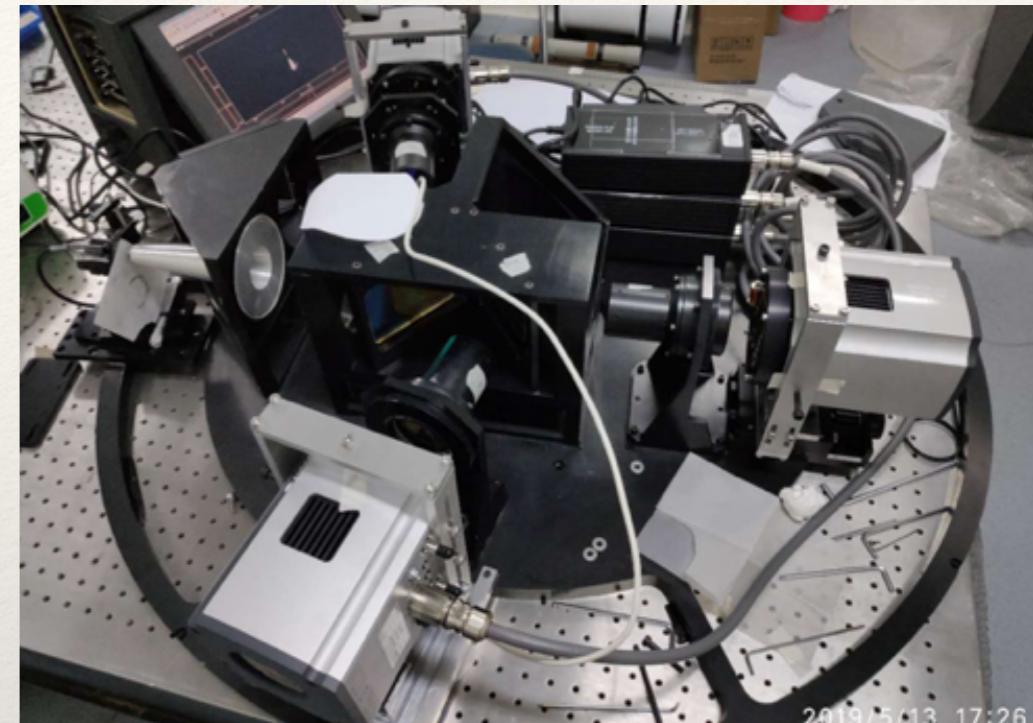
CMM Server

Ready for O3

BA System

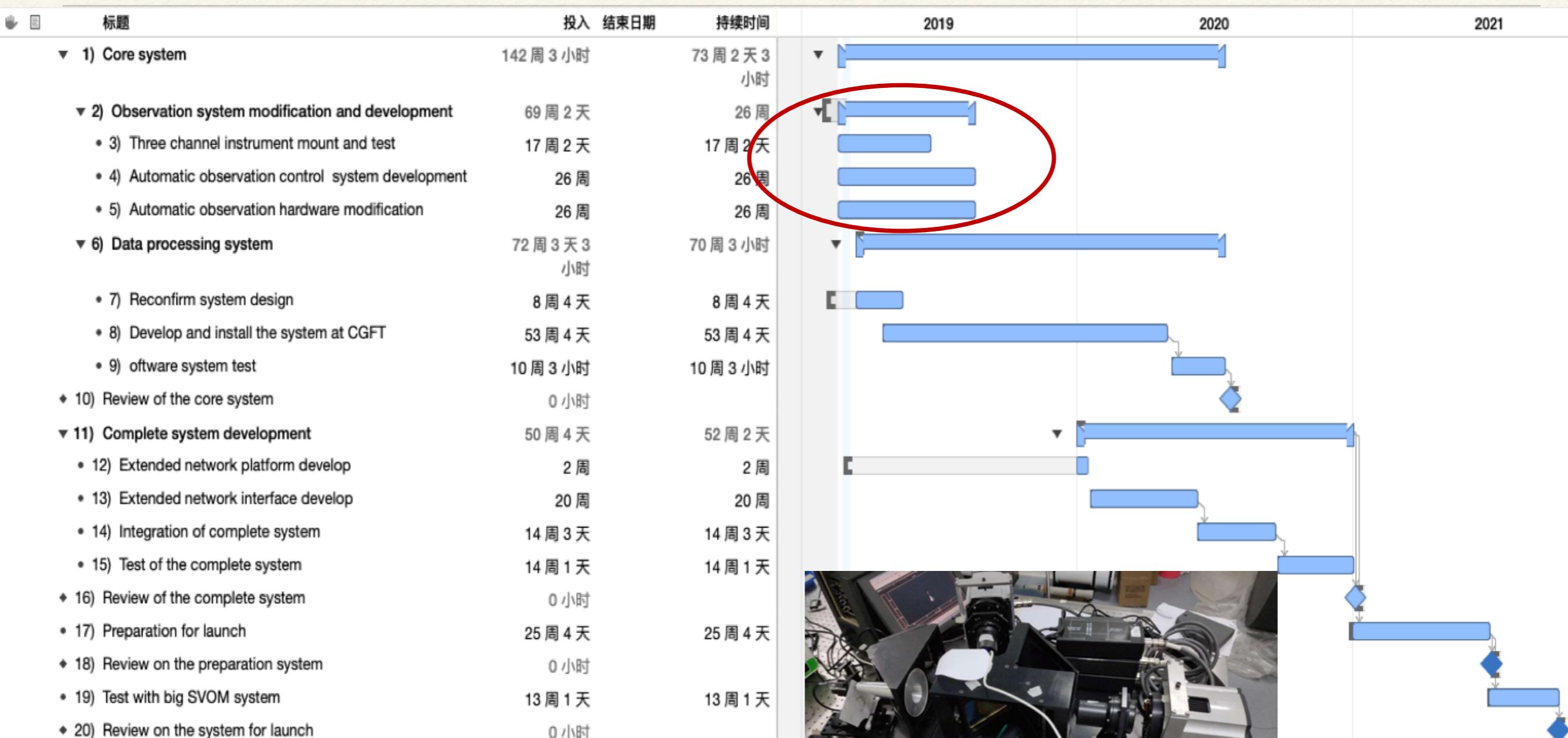
Ready for O3

Facility Status: CGFT



Telescope	Location	Aperture (cm)	FoV	Channel	Detector	Sensitivity (AB mag, 5 sigma)	Localization accuracy	Operation & data processing
CGFT	Jilin	100	21'x21'	3 channels of g.r.i	3 CCD	19 / 100 sec.	0.5 arcsec.	manual

Facility Status: CGFT



Three channel
instrument

Facility Status: CGFT

No	Event	Class	CGFT	obs
1	S190408an		Yes/ 3days	20190411
2	S190412m	BBH	Yes/0d	20190412 20190413
3	S190426c	BNS	Yes/0d	20190427
4	S190510g	BNS	Yes/1d	20190511
5	S190513bm	BBH	Yes/1d	20190514

Facility Status: 2.4m Telescope

2.4m telescope will follow up GW counterpart candidates that SVOM provides.

details of 2.4 telescope will be given in Jirong's speak

Facility Status: 2.16m Telescope

Instruments

BFOSC

Imaging and low-resolution spectroscopy

OMR

Low-resolution spectroscopy

HSR

High-resolution spectroscopy

SVOM awarded observation time for identifying GW counterpart candidates.

Outlines

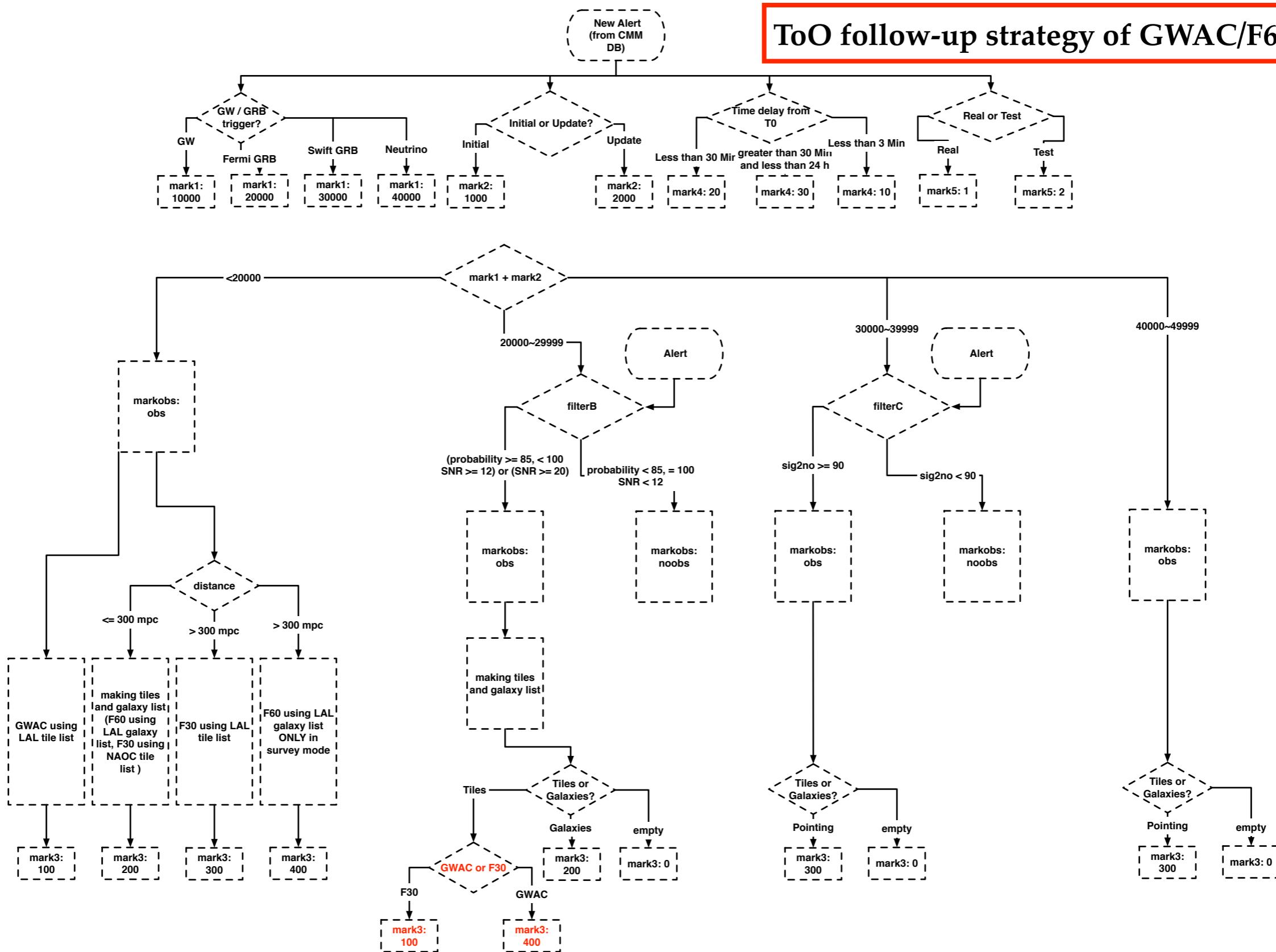
- ❖ SVOM Follow-up Network Facilities Overview
- ❖ Facility Status
- ❖ Observation Strategy

Observation Strategy

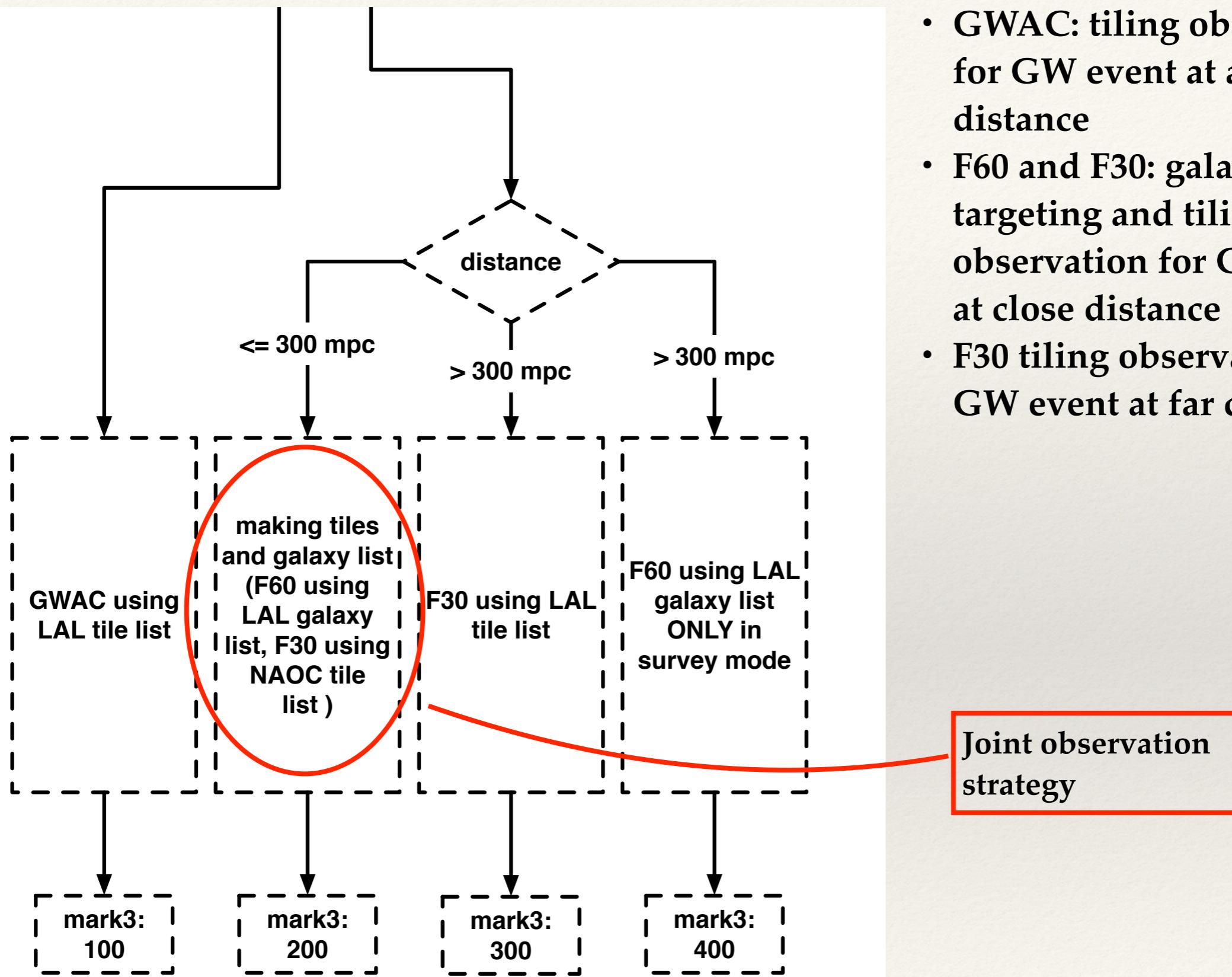
- ❖ GWAC/F60/F30: tiling and galaxy targeting observations to cover the skymap of GW event
- ❖ 2.4m / 2.16m telescope: imaging and spectroscopy for the counterparts of GW event

Observation Strategy: GWAC/F60/F30

ToO follow-up strategy of GWAC/F60/F30



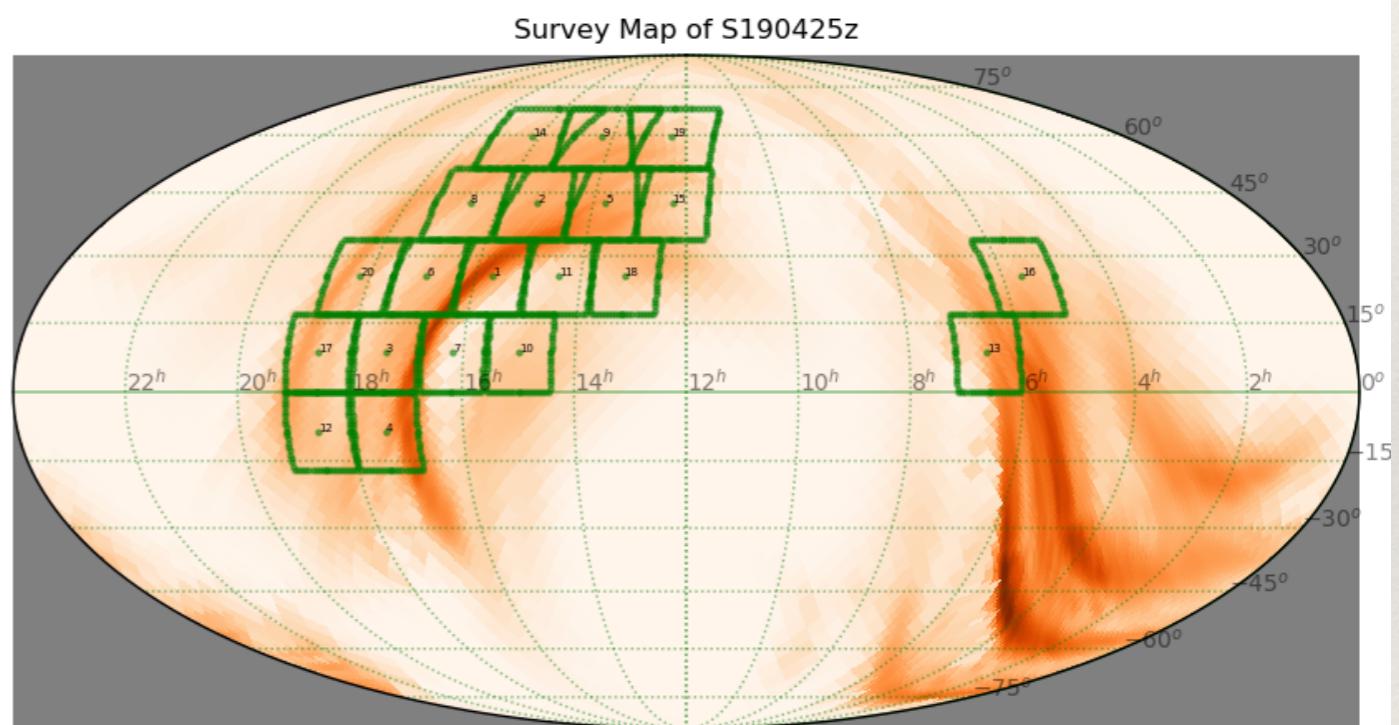
Observation Strategy: GWAC/F60/F30



- GWAC: tiling observation for GW event at all distance
- F60 and F30: galaxy targeting and tiling joint observation for GW event at close distance
- F30 tiling observation for GW event at far distance

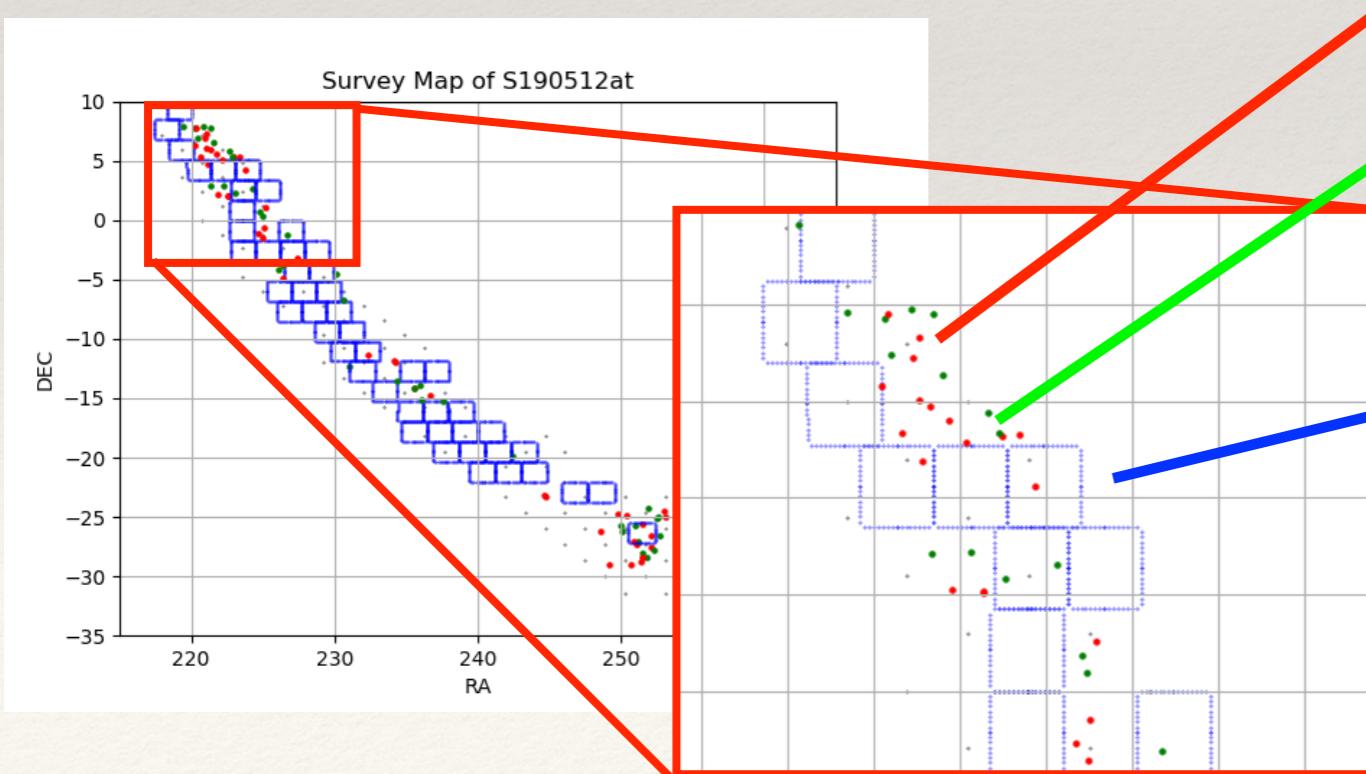
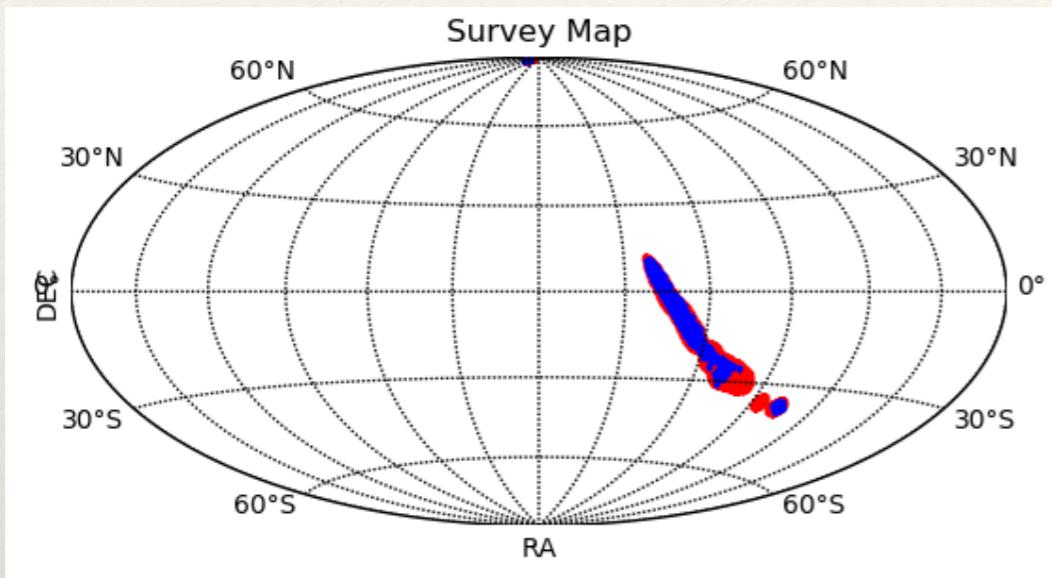
Observation Strategy: GWAC/F60/F30

Tiling strategy for GW with using GWAC

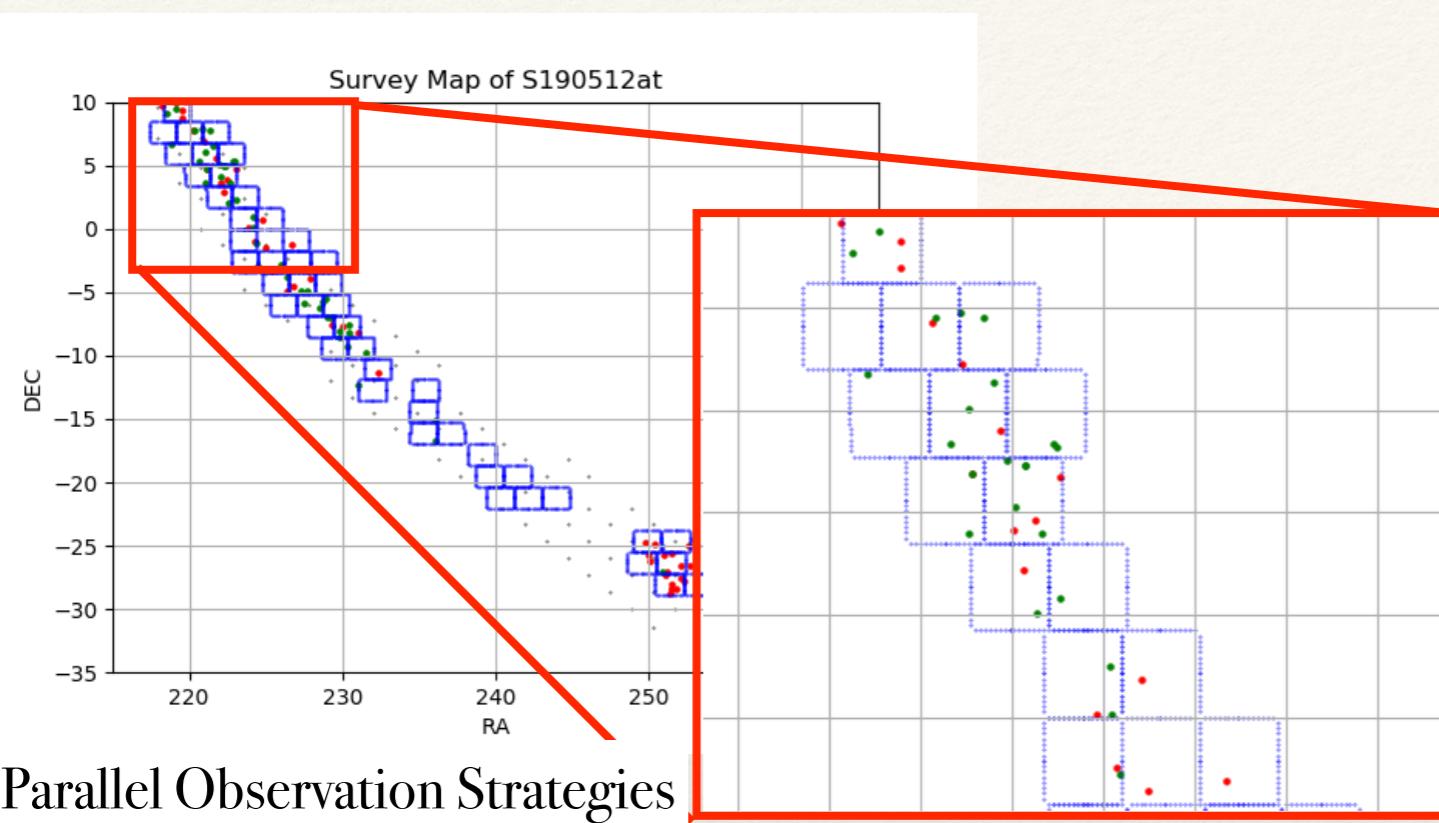


Observation Strategy: GWAC/F60/F30

Joint observation strategy for close GW with F60A/B & F30

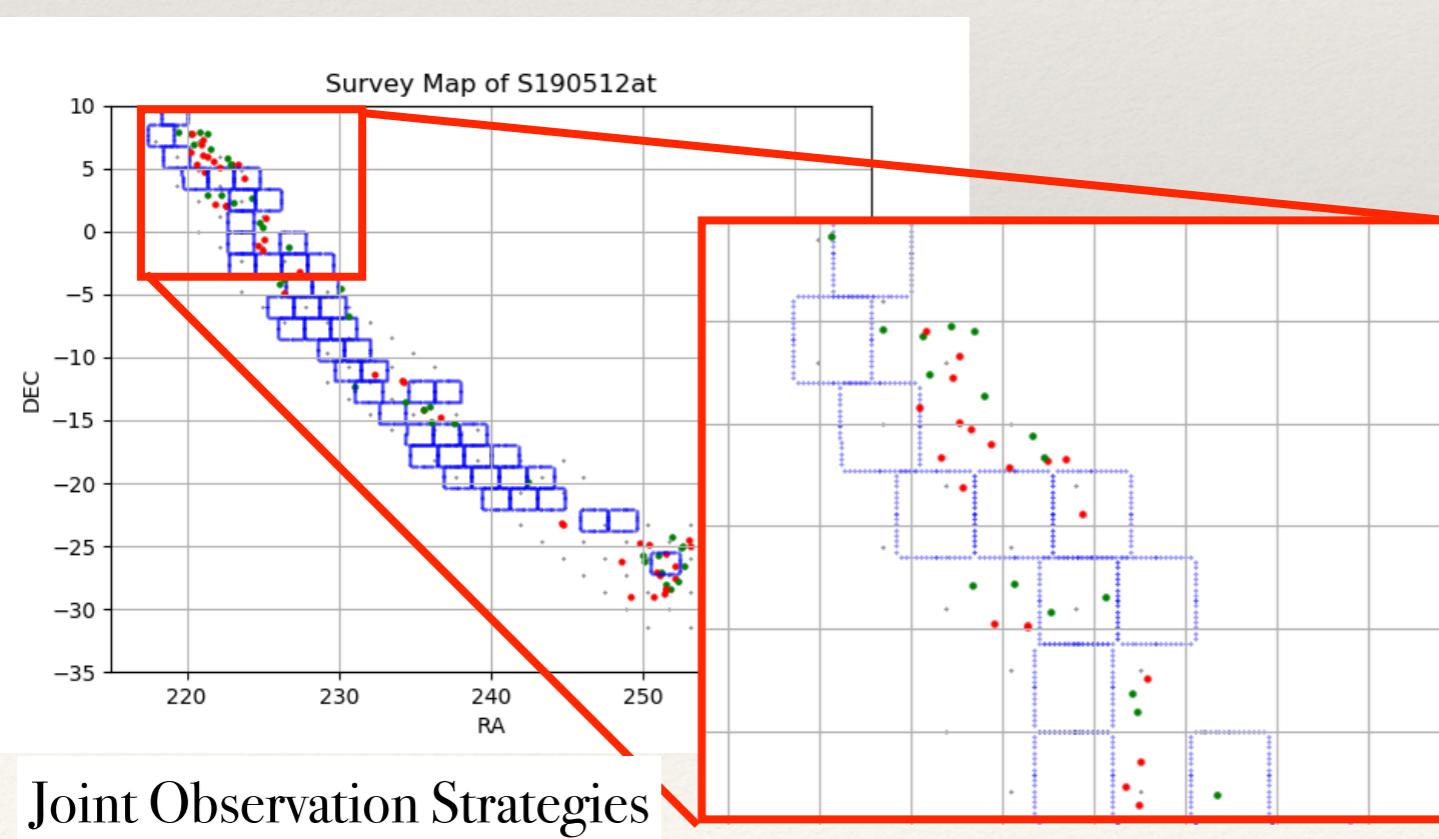


Observation Strategy: GWAC/F60/F30



The advantages of dynamic scheduling and joint observation strategy:

1. more flexible in any case of new alert coming or instrument problem.
2. more sky coverage in a same period of time



Thank you!