

# Which telescopes to trigger in GRANDMA ?

## Level of use of the telescopes

Very Frequent - at a rate of 3 h per day

Occasional - 1 per month

Rare < 1 per 3 months

Very rare < 1 per 6 month



What do we need ? What are our reliable partners ?

What is the niche of the follow-up for the enrichment of LSST and GRB alerts ?

## A - Prompt response or Bright objects automatic triggering (< 19 mag)



### Asia Time Zone

**Very Frequent < 17 mag** - TAROT/TNC (New Caledonia, 0.18m, wide field of XX), clear in operation in october 2025, max 17 mag  
TAROT/TRE (La Reunion, 0.2m, wide field of XX), clear only, 18 mag in 10 min (max 19 mag): respond in 40s, Swift, Fermi alert are automatic, for SVOM it is automatic by Skyportal (but there is some bug); the shifter needs to contact Sarah to see if there is some data.

### Europe Time Zone

**Very Frequent - < 17 mag** - FRAM/CTA-N (La Palma, 0.25m, 0.5') – Clear, RI; 16/17 mag in couple of minutes: Reduction is made by @Sergey Karpov and @Martin Masek, the EP program can be automatized as well as SVOM

**Very Frequent** - TAROT/TCA (France 0.25m, wide field of XX), clear, g, r, i : < 180s (16, 17) mag and > 30 min (18 - 19 mag), respond in 40s, Swift, Fermi alert are automatic, for SVOM it is automatic by Skyportal (but there is some bug); the shifter needs to contact Sarah to see if there is some data.

**Not used but can be Frequent** - OHP/IRiS (France, 0.5m, 24') – ugriz; 18/19 mag in XX - should be automatic if Stéphane is helping to parametrized in Skyportal, not for SVOM but for others ok :)

### America Time Zone

**Very Frequent** - FRAM/Auger (Argentina, 0.3m, 1.0 deg2) – Clear, RI filters; 16/17 mag : GRB program not necessary with GRANDMA

**Very Frequent** - TAROT/TCH (Chile, 0.25m, wide field of XX), clear, g, r, i : < 180s (18-19 mag) and > 30 min (20), respond in 40s, Swift, Fermi alert are automatic, for SVOM it is automatic by Skyportal (but there is some bug). It is the best TAROT telescope. the shifter needs to contact Sarah to see if there is some data.

## A - Prompt response semi/automatic triggering (< 22 mag) via Skyportal

To be made automatic but not for the alerts

### Asia Time Zone

**Occasional, that can turn out to be frequent - Les Makes-60 (Réunion, 0.6m, 23')** – gr filters; 20 mag in 6x120s and 21-21.5 in 30 min : it can fits any science, for the moment, the way is to send an email to Alain, every day for asking obs, but he can't trigger promptly if it is not between 18h to 21h in France I am not sure if the filters function, i just know the filter r.

Frequent ? - **TRT/GAO (China, 0.8 cm, XX)** – Not sure about the filters, its sensitivity and if it is functioning but can be trigger in principal by Skyportal

**21.5 in RV max - Frequent ? - TRT/SBO(Australia, 0.8 cm, XX)** – Johnson Filter, 20 mag in B and I in 30 min, 21.8 mag in R and V in 30 min, sometimes you are asking a certain number of images but you are not having the time allocation

**22.5 mag max - Frequent ? - Abastumani-T150 (Georgia, 1.5m, 38')** – ugriz. 21 mag 10 min, 22.5 in 1h : It is a new telescope from Nino, we do not know yet how much we can use it for GRANDMA, but it can be certainly semi-triggered automatically.

### America Time Zone

**VIRT (USA, 0.5m)** – ugriz; 18/19 mag in 1 min, should be automatic if Bruce made something during the summer

**21.0 in R max - Frequent ? - TRT/SRO(USA 0.8 cm (?), XX)** – Johnson Filter (?), 21 mag in R and V in 50 min, sometimes you are asking a certain number of images but you are not having the time allocation

**22.5in RV max - Frequent ? - TRT/SBO(Australia, 0.8 cm, XX)** – griz, 22.5 in 4h in r-band sometimes you are asking a certain number of images but you are not having the time allocation

## B - Regular telescope by contact via Slack or other that can be performed with the shifters

### Asia Time Zone

**20 mag max - Very rare but no reason to be occasional (better to use when the source is known) - TNT (Xinglong, China, 0.8m, 11.2') – BVRI;** 18/19 mag : all sources, but the best is to contact directly the operators by Wechat, otherwise by email, the numbers of demands should be around 1 per month and it is recommended to ask them to observe and revisit every day. The telescope can go up to 20 mag max

**20 mag max - Very rare but no reason to be occasional (SHAO/T60 (Azerbaijan, 0.6m, 28') – UBVR;** 18.5 in 10 min, 19 mag max: The telescope is shared by multiple groups. The GRANDMA team is not necessary at the site of the telescope. The best way of contact is either Zumrud or Shabnam (alotugh they are finishing their phd), either Nariman by email, the stacking is not necessarily performed (to be understood). The telescope observed very few times for GRANDMA as bad weather during fall and winter

**20 mag max - Frequent - UBAI-NT/ST (Uzbekistan, 0.6m, 18') – UBVR;** up to 20 mag in 10 min in R band; 45 min everynight for GRANDMA should be activated more often. There is a period when the observatory is closed

**21.5 mag max - Frequent - Abastumani-T70 (Georgia, 0.7m, 30') – UBVR;** 10 min in R around 20 and 21.5 mag in 90 min

**21.5 mag max - Occasional - GMG-2m (China, contact with Jirong by chat or by email):** the weather is not good sometimes and the data are hard to collect

**21.5 mag** Xinglong-2.16 - China, by chat or by email): the pollution is high and the PI wants only to trigger if there is a detection or a publicatioj

## B - Regular telescope by contact via Slack or other that can be performed with the shifters

### Europe Time Zone

17 mag max - OST\_CDK (Germany) - Occasional - Contact by email

Up to 21.5 mag in R - Frequent to very frequent ? **ASO** (50 cm or 60 cm ?) and I don't remember (Marrocoo) – contact only (and better by what's app with the amateur Ali- in BGRI, They promise me to change to sloan filter, but i am still waiting for it. They don't know how to analyse the data

**Up to 22.5 mag** Frequent - KAO (2m,) sloan filters - The PI has less time for 2025, it is easy to contact them by slack

### America Time Zone

22 mag max - Frequent - OPD (Brazil, 0.6 ???) - Filters at least R 22 mag in 1h for sure, : to contact i think either by slack or by email to Wagner, it is very effective, sometimes the telescope is not on their own

## C - Telescope with specific contact

**Asia Time Zone Europe Time Zone America Time Zone :**

better is that it goes via the website, up to 20 mag

**Asia Time Zone Europe Time Zone America Time Zone :**

Skynet (up to 19 mag), I think they are willing to collaborate with Us, the contact has been made by Dahlia but the analysis was on our side

**Asia Time Zone**

**Occasional - ASTEP 19 mag max** (50 cm for very south sources, it must be a niche) and operated in Antarctica, Red and Blue Band, can have very long period of observations

YAPTH/AST\_3 (from [trsun@pmo.ac.cn](mailto:trsun@pmo.ac.cn)), 21 mag in 5 min for AST3 only in g, for YAHPT ??

**Europe Time Zone**

**22.5 mag Rare - C2PU** (Calern, 12 arcmin ? 1 m ?) gri : Only Sarah by contact with amateur Bruno : the telescope must be taken on remotely and it is hard for me to do it during the night, the data processing is not done

**22.5 mag Rare - Pic du Midi (France, 1m ...)** gri ? + camera infrarouge To my knowledge the only way is to contact by slack or by email and sometimes, there is people at the site and they can observe

**23.5 mag** – Rare – SPECULOS/Artemis (I think it is in Canaria ?) : telescope ERC dedicated to exoplanet (contact by email only Sarah but Marion should have a shot)

22.5 mag to 23 mag - Rare NAO-2m (Bulagiar), Contact the PI my email, sometimes the telescope can't observe because it is in wide field mode

**25 mag** - Occasional – GTC time (under request to Antonio and Feli, but it is a negotiable partnership)

## C - Telescope with specific contact

### America Time Zone

22.5 mag in 10 min Rare to occasional ?– **Euler (Chile, 1m, XX) griR (?)** (by email to Frederic Dux, better that the PI is doing or someone much careful), 23.4 in 20 min, may be some room to trigger automatically if MOU ?

23.5 mag – Rare – **SPECULOS/SOMETHING** in grz simulatenous telescope ERC dedicated to explanet (contact by email only Sarah but Marion should have a shot)

**25 mag** - Very rare - CFHT (PI Sarah Antier under DDT Time), griz



## D - Telescope with unknown status

### Asia Time Zone

**Zadko (Australia, 1.0m, 23')** – gri filters; 20/22 mag. : I am not sure the telescope is working anymore

AZT-8 Lisnyky ?

**Shao/2M ?**

**New Telescope in UBAI** (plan for next year ?)

SNOVA (does not exist anymore) replaced by TNOT to my knowledge

Ali-50 ?

Japanese contact of KAO ?

### Europe Time Zone

**OAJ-T80 (Spain, 0.8m, 2.0')** – griz; 18/19 mag; also used for TOO and tiling : I am not sure if there is any proposal on it, we need to find some spanish partner for this

**OHP-T120 (France, 1.2m, 13')** – BVRI; 20/21 mag : Need to apply time via France or use the 2m but it is already performed with the MISTRAL collaboration, maybe one way would be to apply time via France but who ?

**OSN-T120 (Spain, 1.5m, 13')** – BVRI; 20/21 mag; no news since Alex is gone, maybe ask someone else in Spain

**OWL, MOSS**

**CAHA-2.2m ?**

**NAO - 1m**

## D - Telescope with unknown status

### America Time Zone

SEDVM, ZTF, TT (?)

**Colibri**, which partnership ?

SOAR, 4 m ?

KAIT partnership (it is an automatic telescope)