

# Who will provide GRB alerts in the future?

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GRB alerts satellites are now becoming like weather forecast satellites. We need them. Everybody take for granted that they will **continue to exist and always provide services**.

Several important long term scientific experimentations rely on the fact that a reliable and precise source of Gamma Ray Bursts (GRB) alerts will continue to be available in the future.

For example GRB are at the heart of the science cases of:

- **Cerenkov telescopes arrays**
- **gravitational wave detectors on Earth and in space**
- **neutrino detectors**
- **optical and radio GRB follow-up programs on a large number of existing large telescopes**
- **dedicated automatic telescopes, large survey telescopes**

Actual situation:

**SWIFT**: 10 th year of a programmed 3 years mission. Most valuable right now. Re-pointing.

**INTEGRAL**: also much beyond programmed mission. Observe mostly our galaxy so GRB INTEGRAL is founding are difficult to follow. Very fast but no re-pointing

**FERMI**: very interesting but no precise location.

Other: **MAXI, AGILE, IPN...** Interesting but not really useful for alerting.

**GRB alerts could just disappear any day!**

**Future uncertain: SVOM (China France), EXIST?**

Basic requirements:

- **Quiet orbit**: equatorial, L2 (communication delay 5s)
- **Permanent communication** for alerts (TDRS or several station around equator).
- a **gamma ray imager** with arcmin resolution and very large field of view ( $2\pi$  for equatorial,  $4\pi$  for L2)
- **autonomous re-pointing** capabilities
- a 1 degree field of view **Xray imager** with arcsec accuracy.

**Detectors exist and are flight proven.**

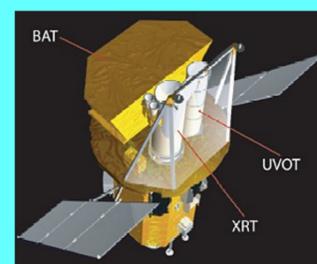
Just assembling the best available instruments.

Can be done within the very small price and form factor imposed by this proposal.

Can be coupled with other mission presented at this workshop that use same technology (Xray imager, Xray polarimeter, Gamma ray mission)

How can it look like?

- random coded mask
- CdTe imager
- Lobster eye X ray detector
- clever autonomous re-pointing platform
- a **small SWIFT** but **using latest technological progress**



The proposed spacecraft can look very similar to the SWIFT spacecraft (shown here), optical camera is not foreseen