SVOM in O4+O5 era

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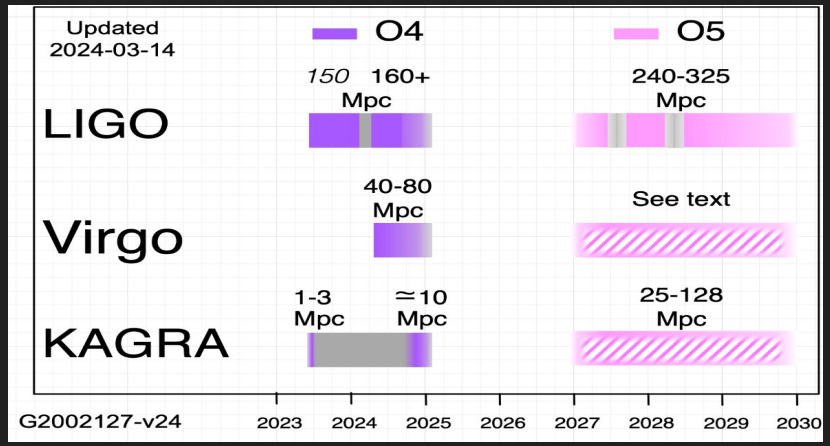
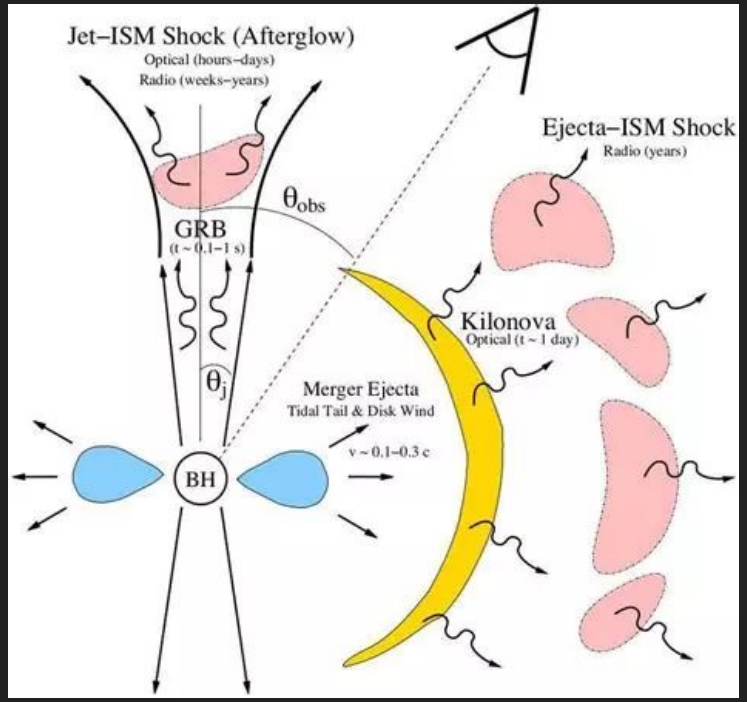


Possible GW - EM emission

NS-NS and NS-BH mergers

- Short Gamma-Ray Bursts (GRBs)
    - Prompt γ-ray emission(< 2 s).
    - Multiwavelength afterglow emission: X-ray,o optical and radio (minutes, hours, days, months).
- Kilonova: optical and NIR (days-weeks).
- Late blast wave emission: radio (~ months, years).



credits : Metzger & Berger 2012

Long GRB or core collapse : GW sensitive only to closed-by galaxies

- X-rays and UV (minutes,days) - optical (weeks, months) - radio (years)

Isolated neutron stars : soft gamma rays repeaters or pulsar glitches (X and radio)

Different possibilities

- Association between a GRB detected by SVOM and a GW event
  - à la GW170817/GRB170817A

- Subthreshold in ECLAIR/GRM and a GW event

- No prompt detection but follow-up performed with MXT/VT and ground instruments *(not for this workshop)*

Possible association may happen either
- during commissioning phase or early science mode
- after several years of data taking

GW and GRB detection

Several instruments (EP, Swift, Fermi, …) will certainly detect the events

- participate to common publication if there is a call for it
- describe the prompt detection and the association with the GW event - tools to determine significance of the association already existed in LVK or can be developed quite quickly
- Link with Fink

Thanks to ground segments we can anticipate :

- data from IR to MeV
- Produce our own detection paper with on-board instrument on the prompt and the afterglow detections
- use the VT + ground segments (GWAC, F30/60 + the 2 GFTs) to discuss the potential kilonovae signal - still need to have dedicated workflow for this
- Link with Fink

Can we anticipate to use external observatories data that follow up our own GRB for this case ?

Subthreshold in ECLAIR/GRM and GW

- Detection by on another satellite with no on-board trigger
  - look for specific event - pipeline already under development - Rachel Hamburg + IRAP
- Participate to common publication if there is a call for it
- We may also have afterglow detection with MXT and VT (ToO-MM and tiling or ToO-Ex)
  - need to publish also this part
  - pipelines already existed
- We may also contribute to kilonovae studies + afterglow including VT + ground based telescopes (without F-GFT)
  - discuss the potential kilonovae signal - still need to have dedicated workflow for this

No prompt detection but follow-up performed

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