

# Gravitational waves session

## Journée GPhys 2014

27 may 2014 - Meudon

- 10:15 Antoine Petiteau (chair) : Introduction
- 10:20 Alexandre Le Tiec : "Gravitational waves from compact object binaries"
- 10:35 Remi Geiger : "MIGA" - *ANNULE*
- 10:50 Gilles Theureau : "Pulsar Timing Array"
- 11:05 Eric Plagnol : "eLISA and LISAPathfinder"
- 11:20 Eric Chassande-Mottin : "Virgo"



# Gravitational waves

- Space time deformation produced in particular by motion of masses,
- Weak coupling, transverse wave with two polarisations  $h_+$  &  $h_x$
- Main sources :
  - binaries formed by compact objects (White Dwarf, Neutron Star, Black Hole, ...)
  - deformation of compact objects (“mountain on Neutron Star”, ...)
  - Supernovae,
  - Cosmic strings,
  - Cosmological event as phase transitions,
  - Unknown Universe !



# Gravitational waves

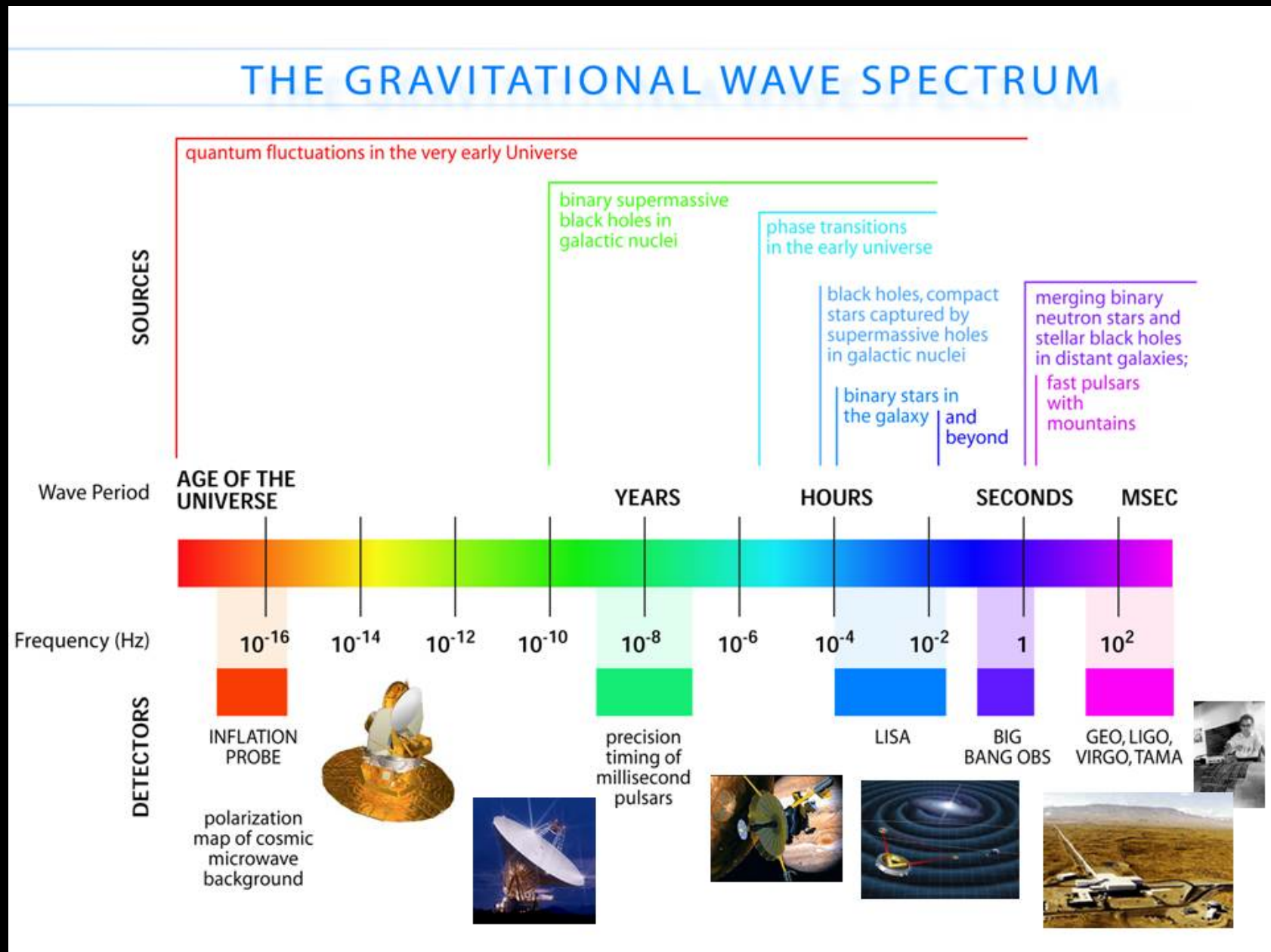
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Alexandre LeTiec (LUTH) “Gravitational waves from compact object binaries”

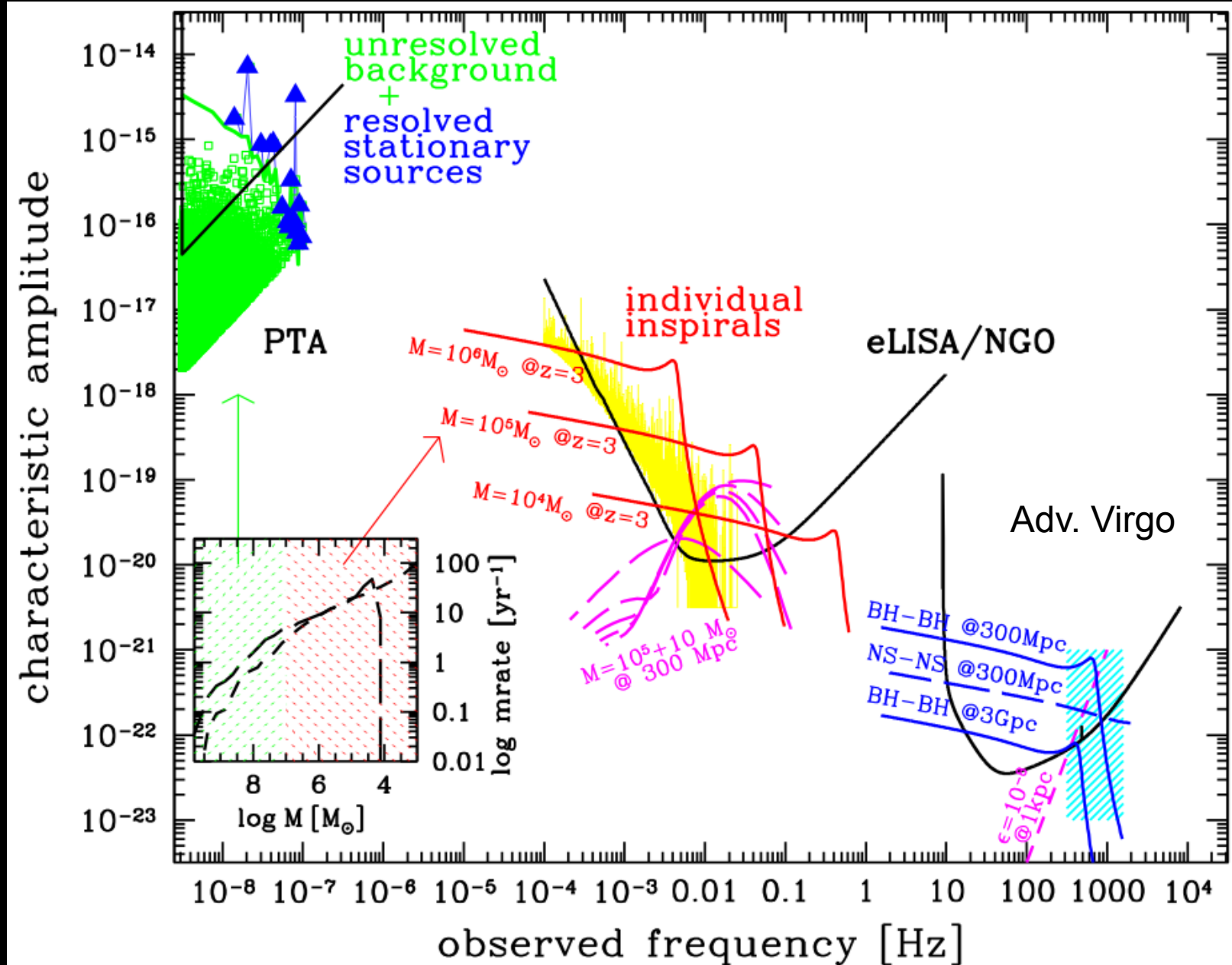
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# Gravitational waves spectrum



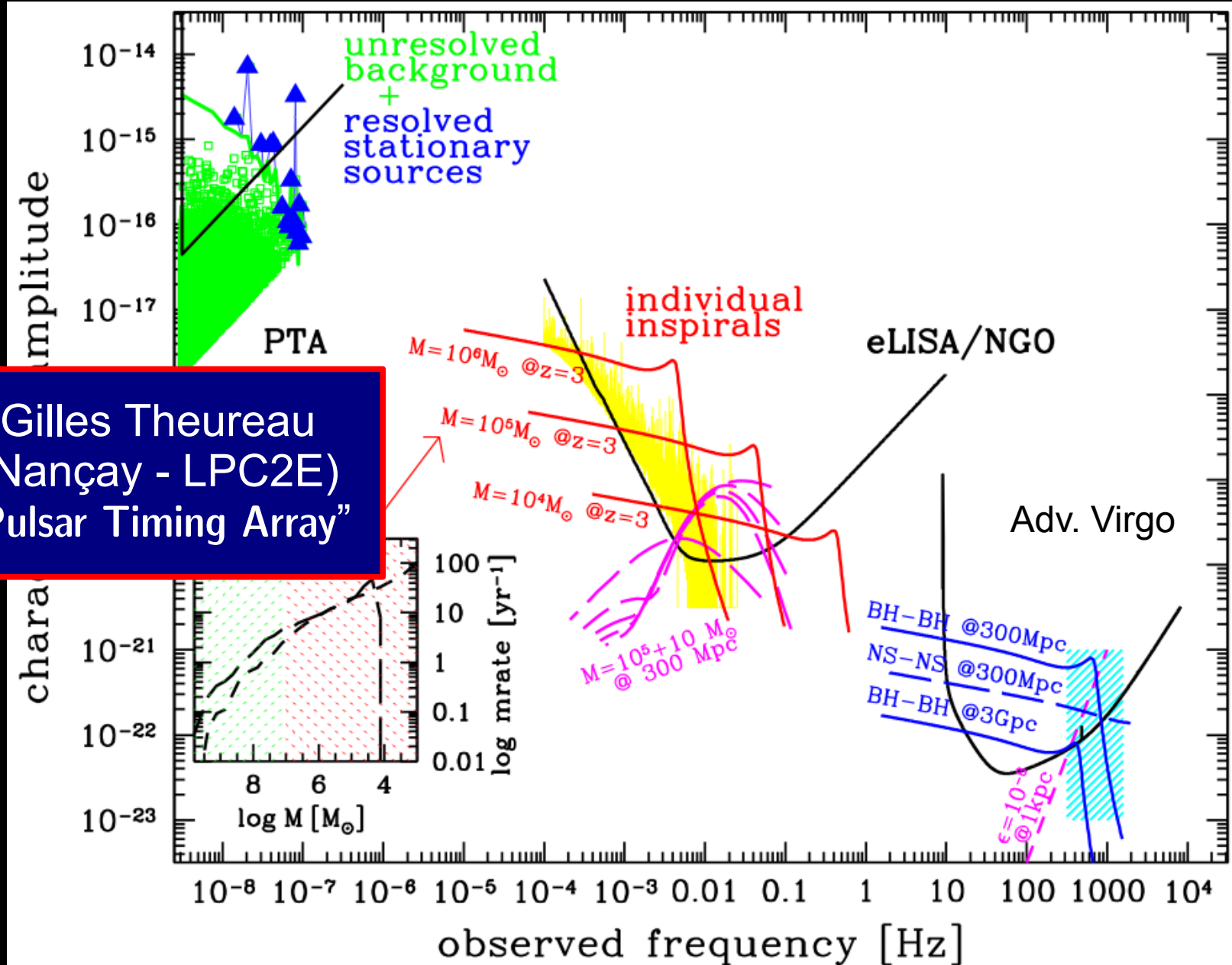
# Observing with gravitational waves



Sesana astro-ph.CO 1304.0767 (2013)



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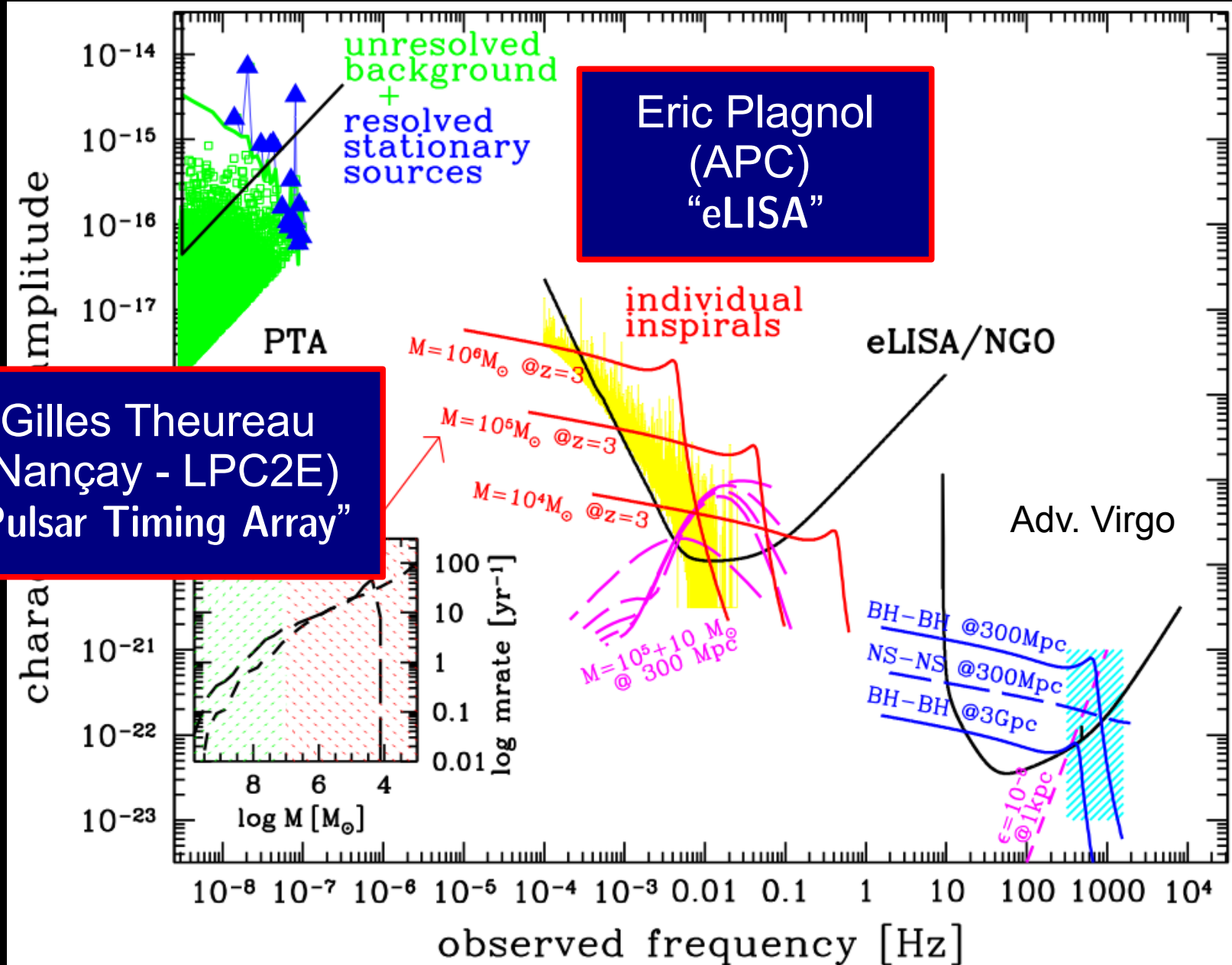


Gilles Theureau  
(Nançay - LPC2E)  
"Pulsar Timing Array"

Sesana astro-ph.CO 1304.0767 (2013)



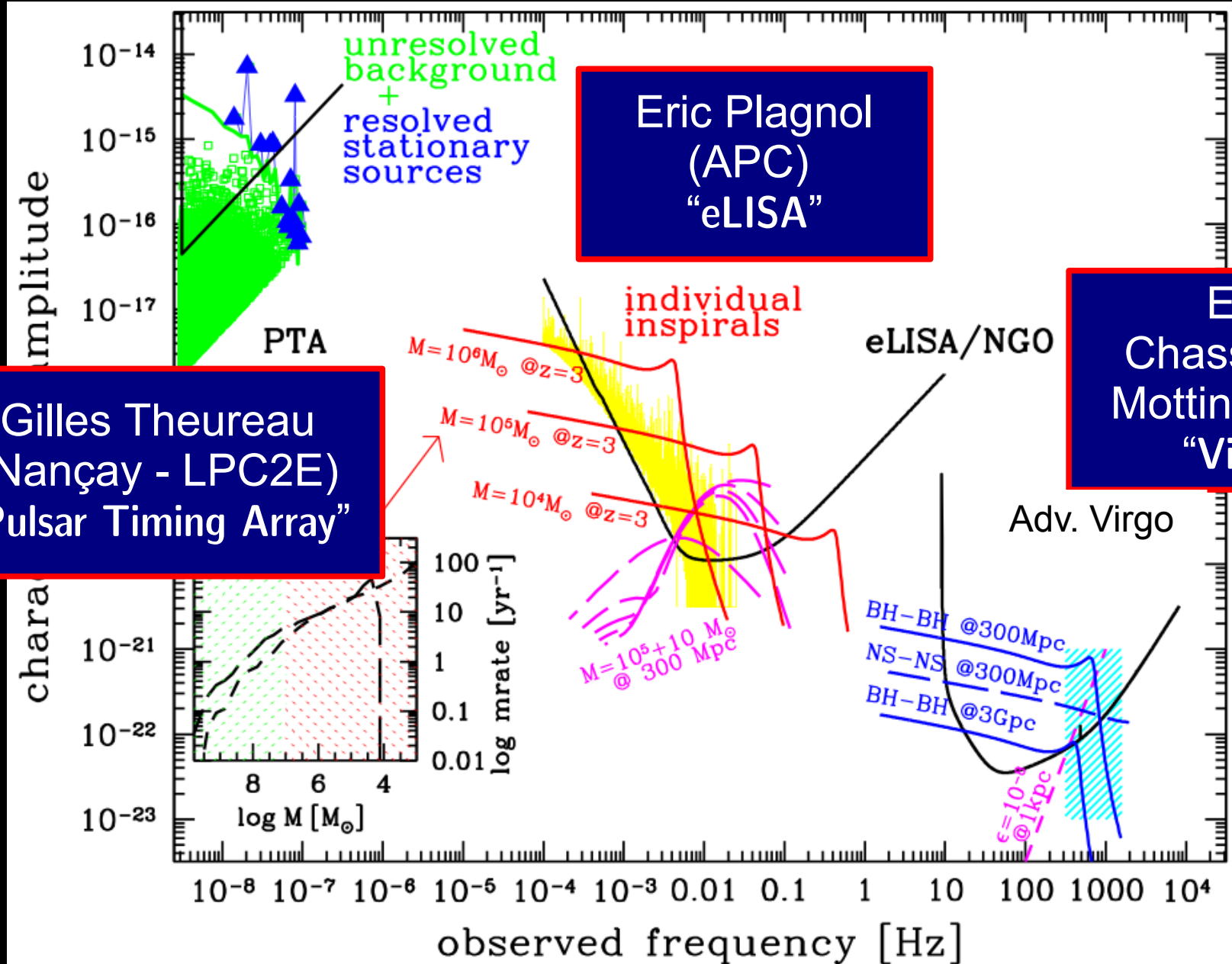
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# Observing with gravitational waves



Eric Plagnol  
(APC)  
"eLISA"

Eric Chassande-Mottin (APC)  
"Virgo"

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