

Ondas Gravitacionais

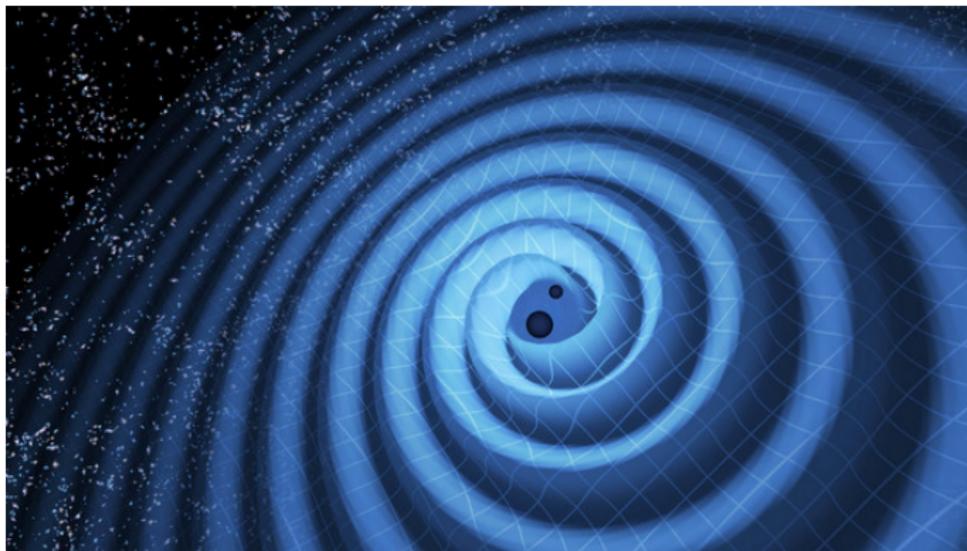
Jacqueline Garutti Lopes

jacqueline.garutti.lopes@usp.br

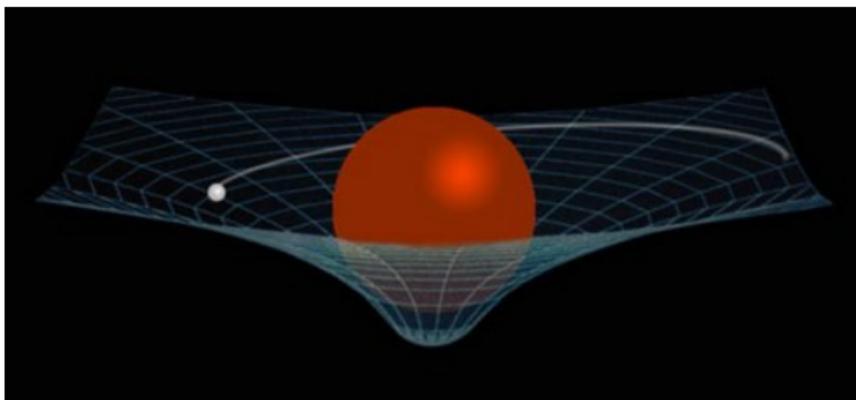
21/01/2017

O que são?

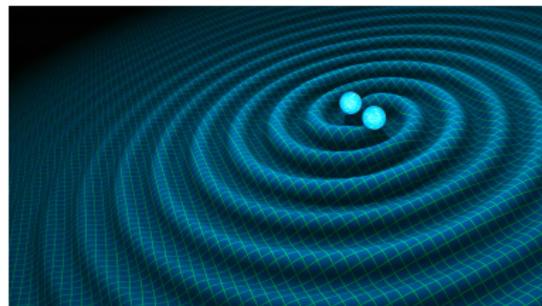
- Ondulações no tecido espaço-tempo



Malha espaço-tempo

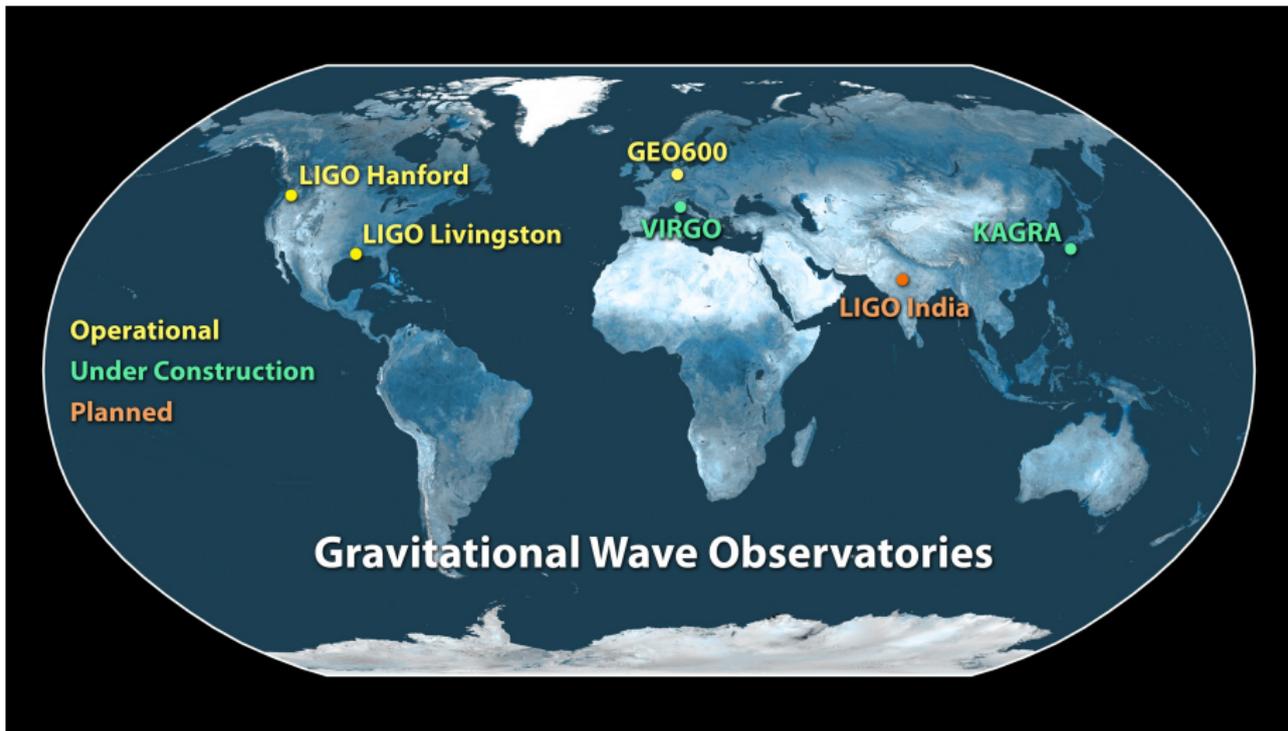


Ondas se propagando



Como detectá-las?





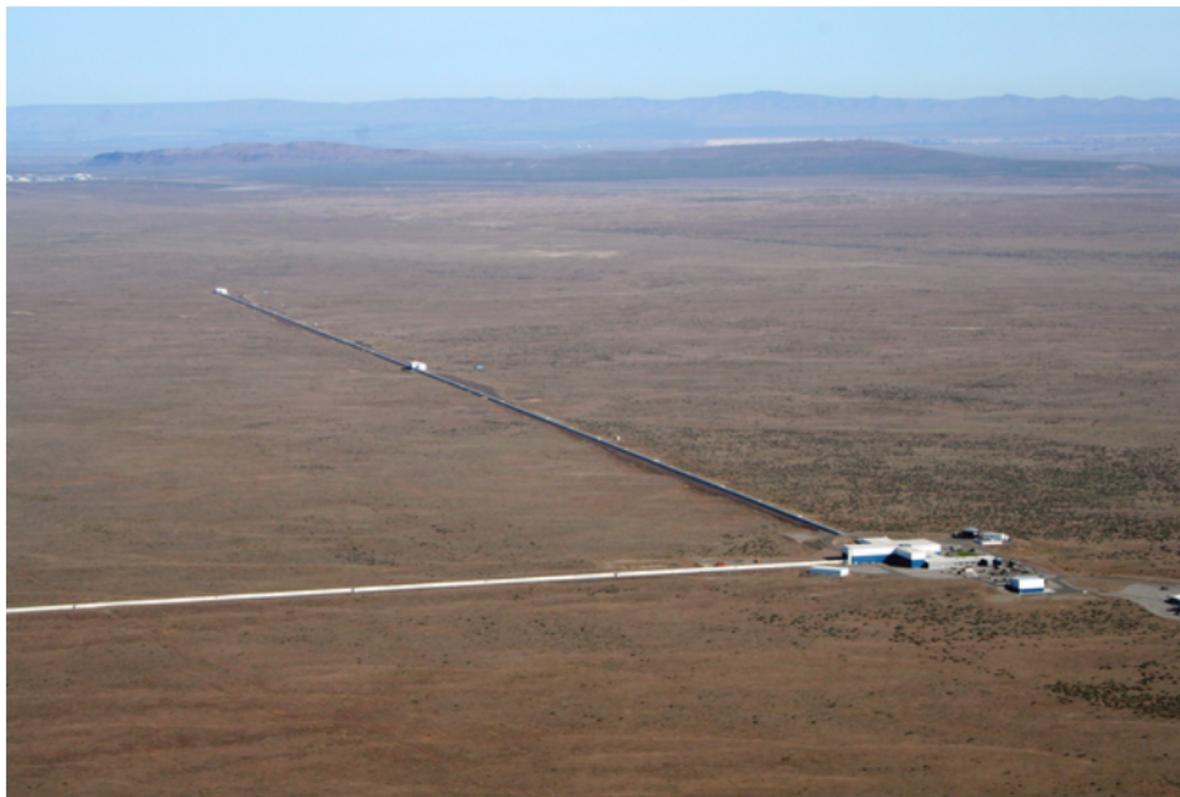
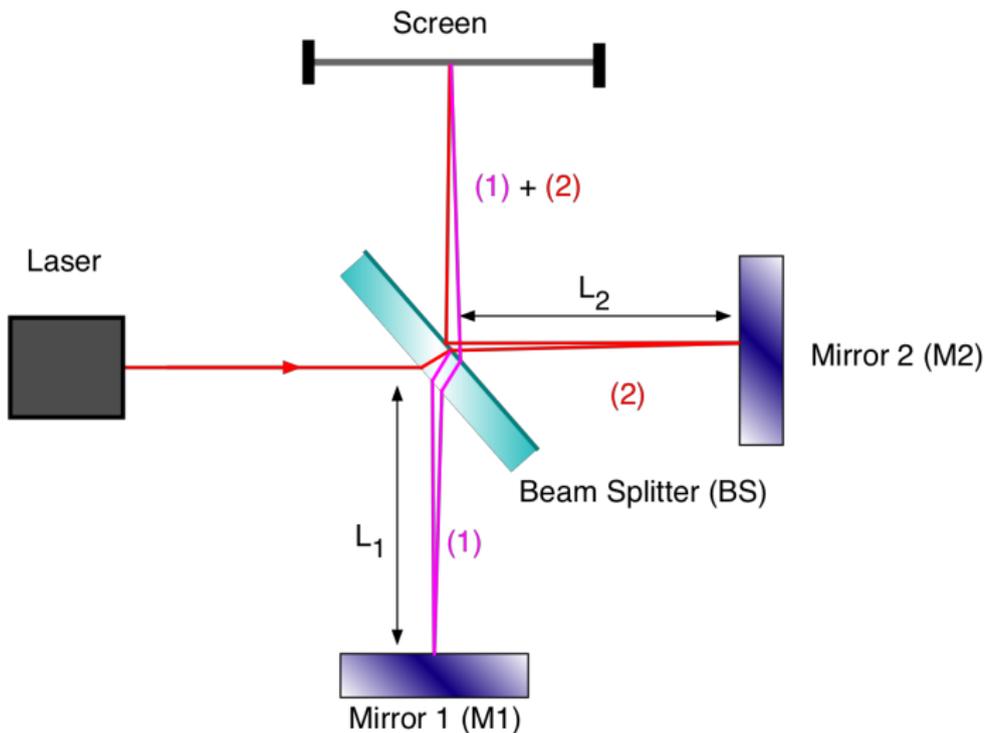


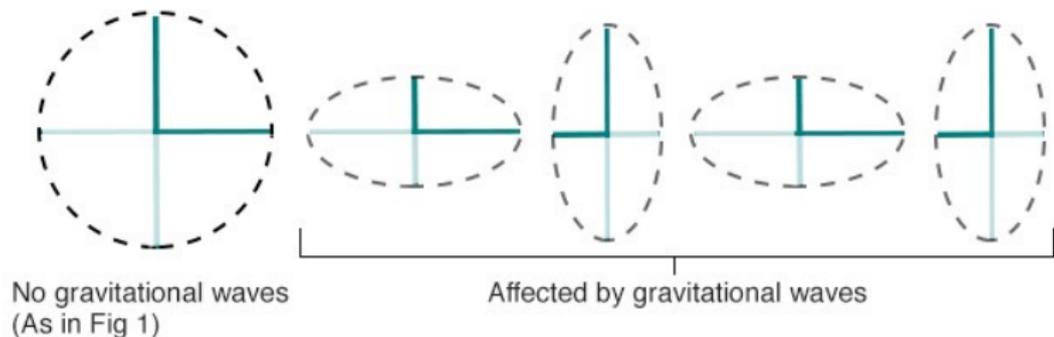
Figura: LIGO, Hanford

Interferômetro de Michelson



Como as ondas afetam o interferômetro?

Gravitational waves alternately stretch and squeeze the space they pass through

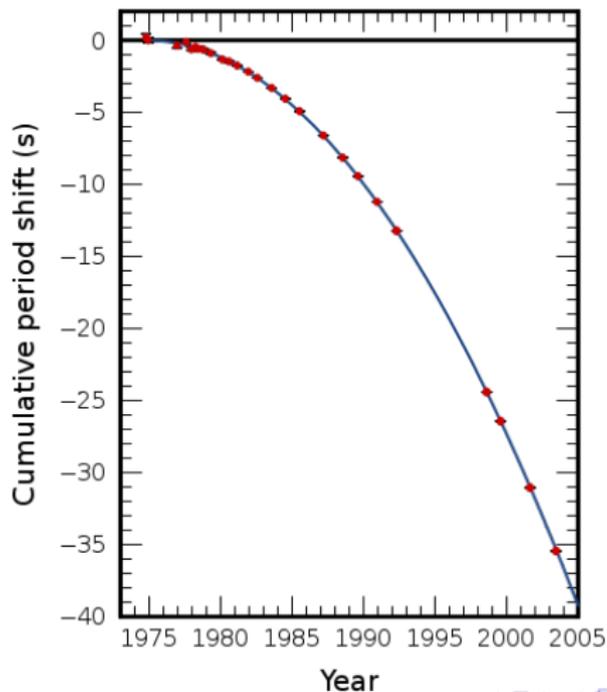


Source: LIGO/NSF

BBC

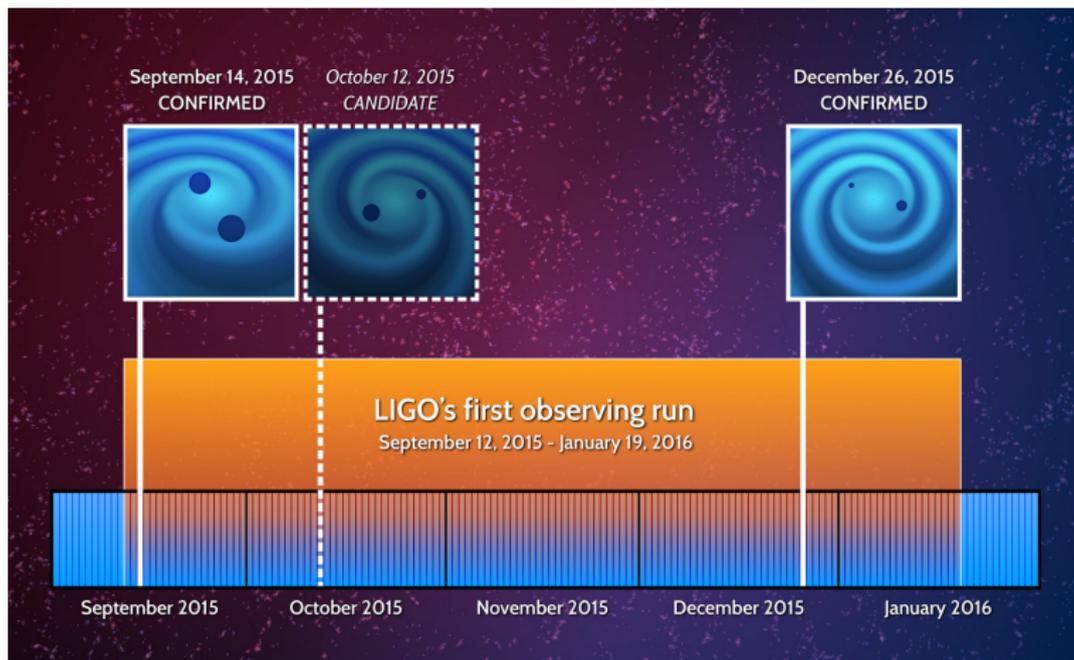
Detecção (1975 ~ 1985)

- Detecção indireta por R.Hulse e J. Taylor

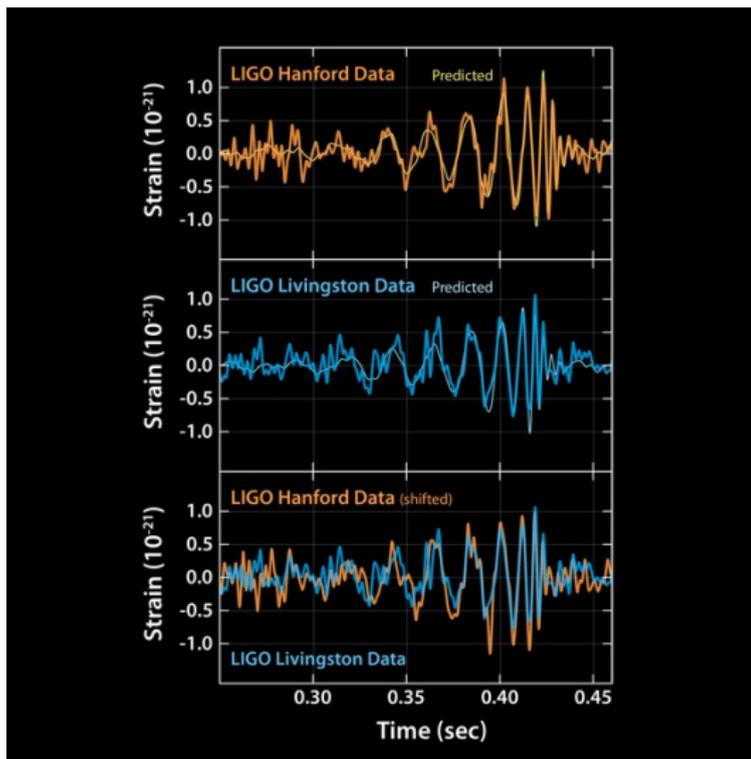


Detecção (2015)

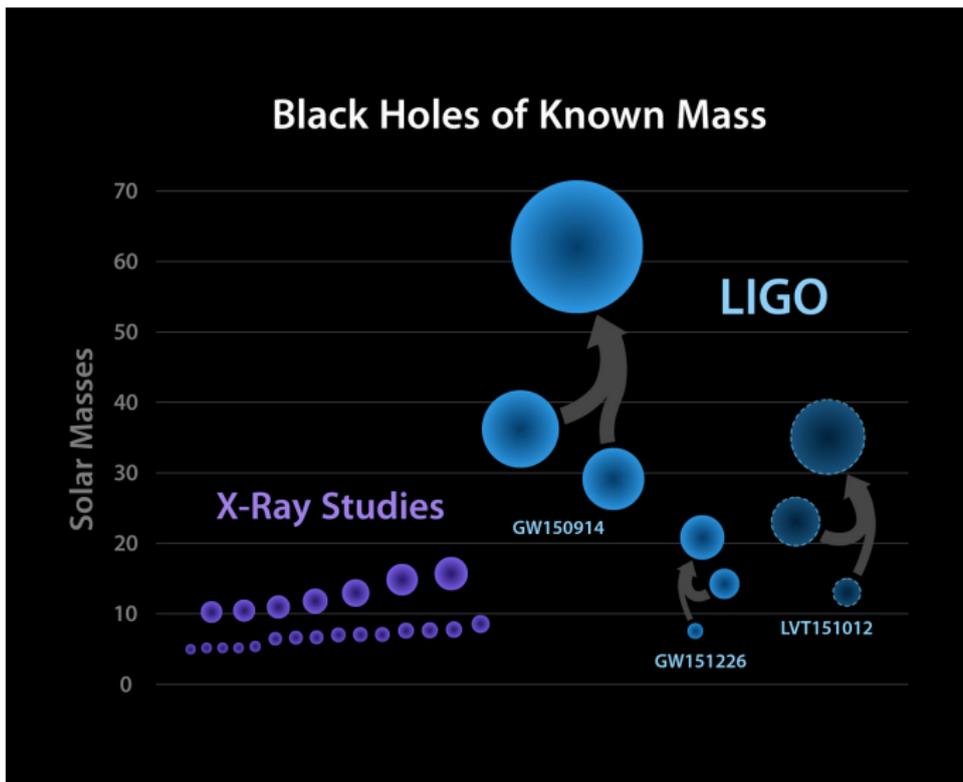
- Detecção direta pelo LIGO



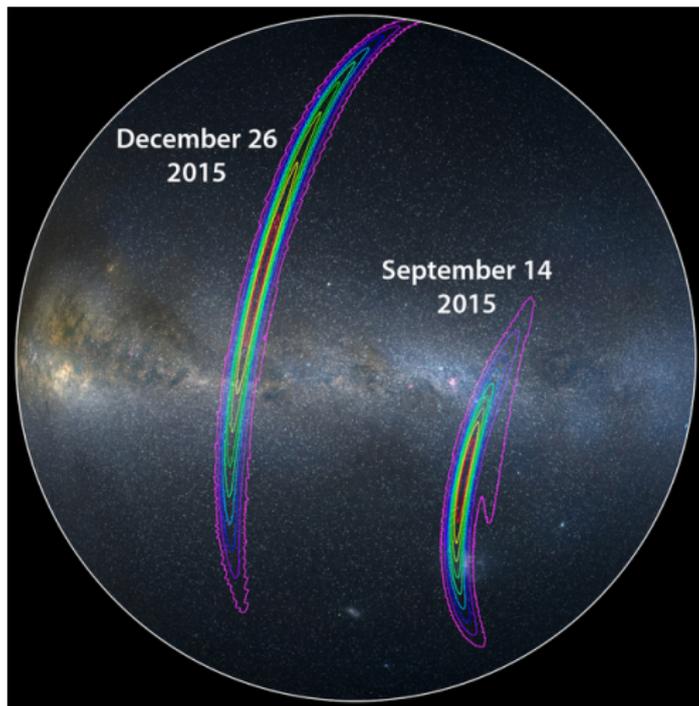
● Setembro



Colisão



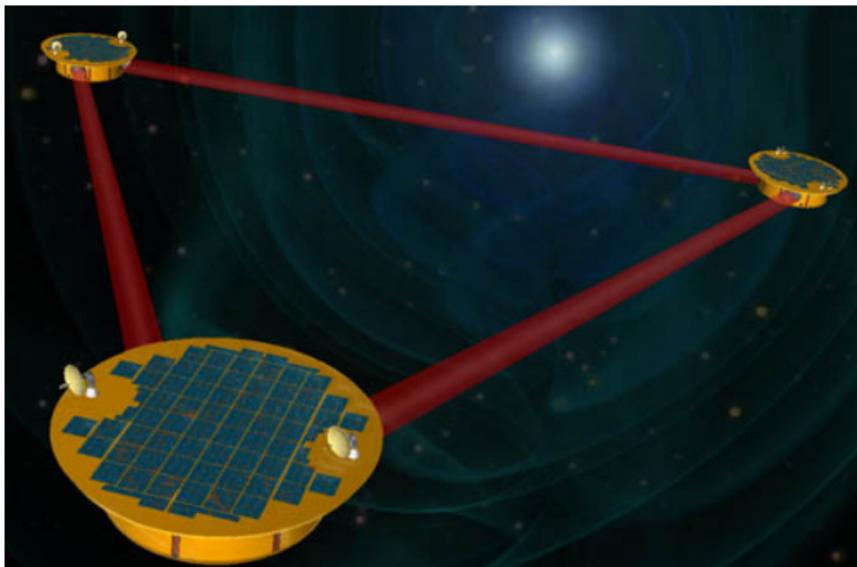
Local de onde vieram (vista do hemisfério sul)



Importância da descoberta

- Novas formas de ver o universo



LISA \leftrightarrow NGO

Referências

- LIGO (<https://www.ligo.caltech.edu/>)
- LISA (<https://lisa.nasa.gov/>)
- PhD Comics(<http://www.phdcomics.com/>)
- GEO600(<http://www.geo600.org/>)
- KAGRA(<http://gwpo.nao.ac.jp/en>)
- VIRGO(<http://www.virgo-gw.eu>)

Obrigada! :D