



LIGO Hanford



LIGO Livingston

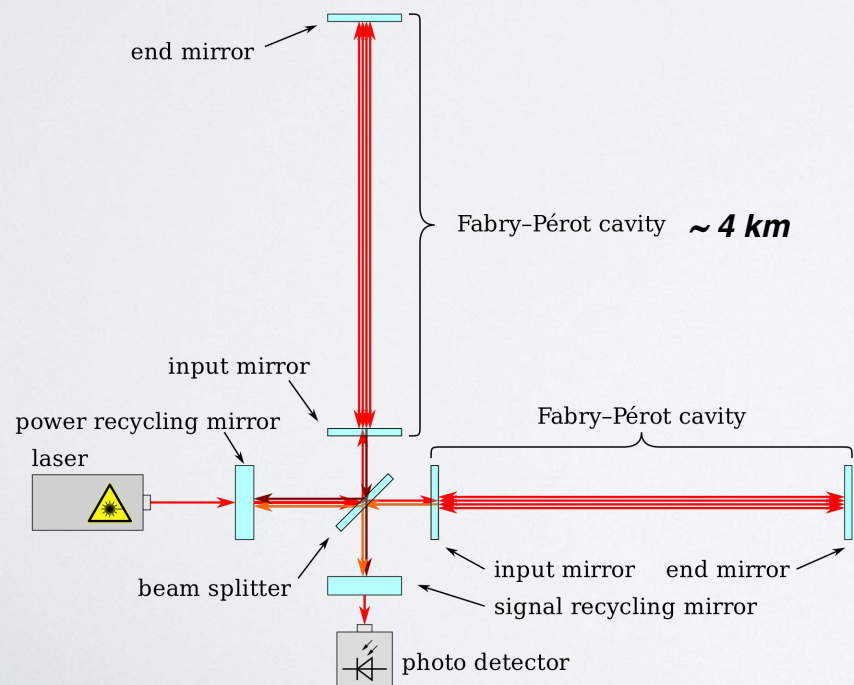


Fig.: Menner



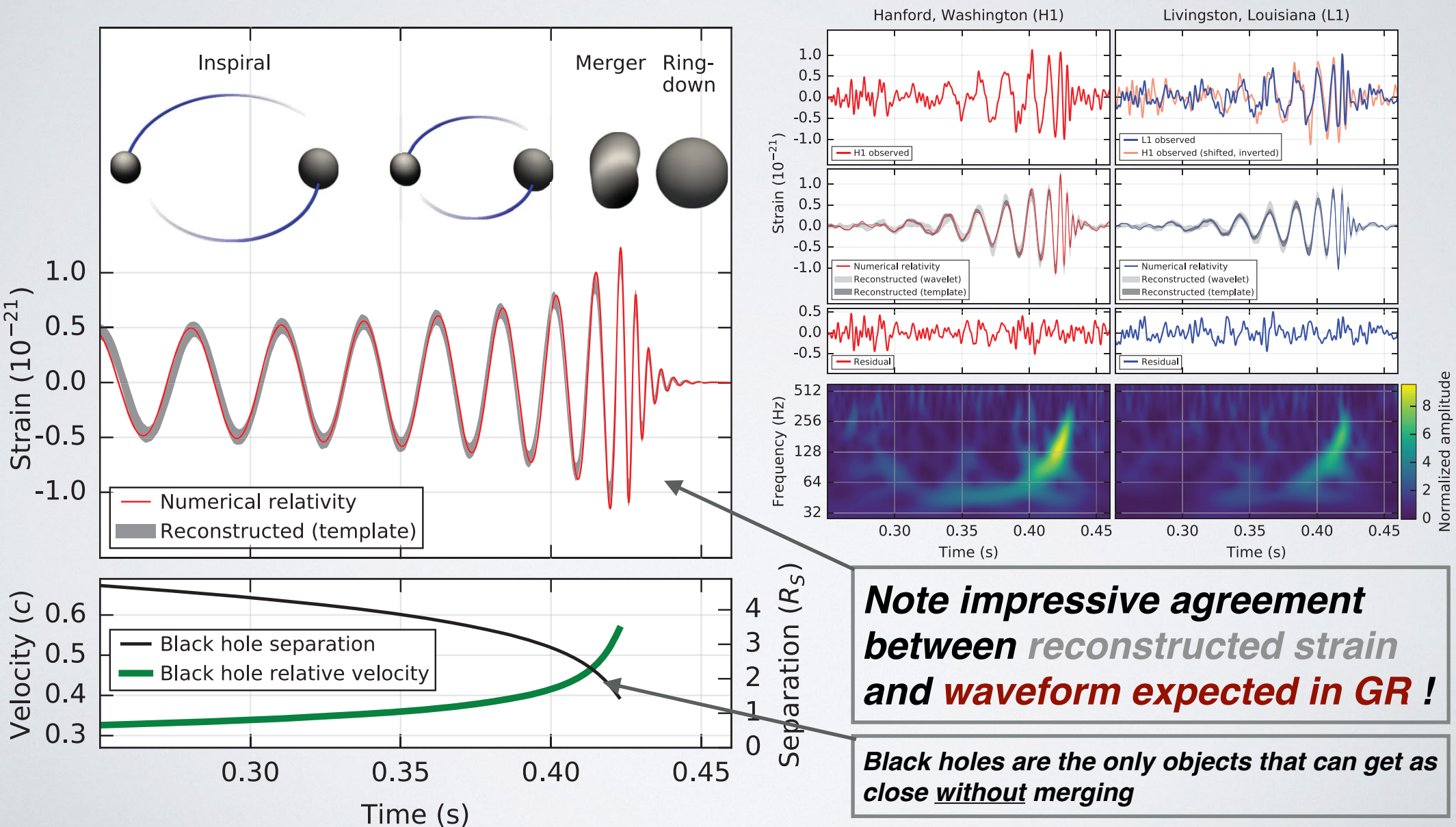


# Observation of Gravitational Waves from a Binary Black Hole Merger

B. P. Abbott *et al.*\*

(LIGO Scientific Collaboration and Virgo Collaboration)

(Received 21 January 2016; published 11 February 2016)



# SOUNDS OF SPACETIME

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## LISTENING TO THE DARK SIDE OF THE UNIVERSE

AN AUDIO GUIDE TO UNDERSTANDING  
GRAVITATIONAL-WAVE SIGNALS



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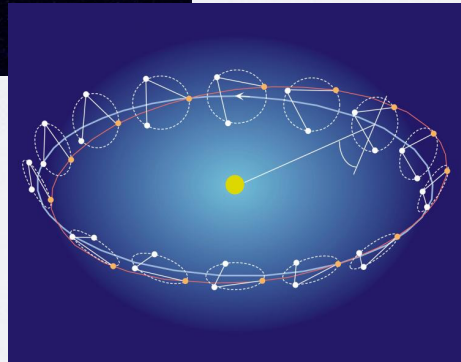
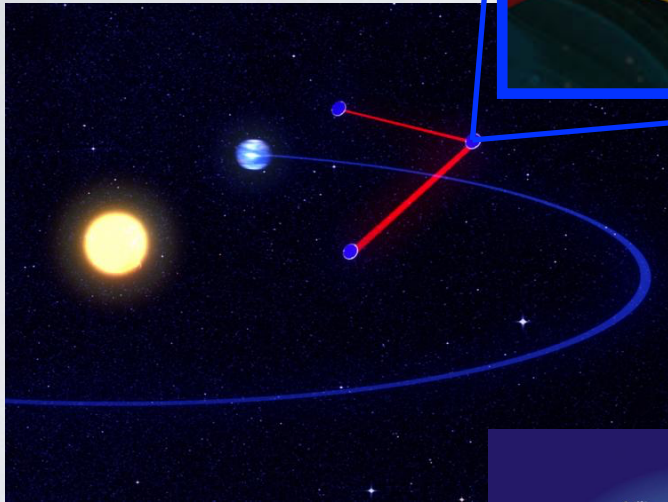
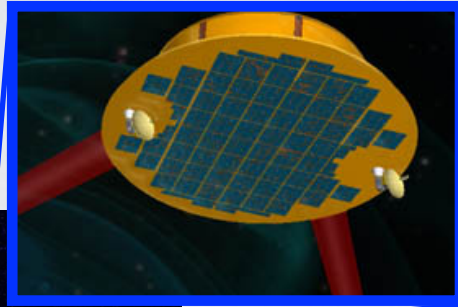
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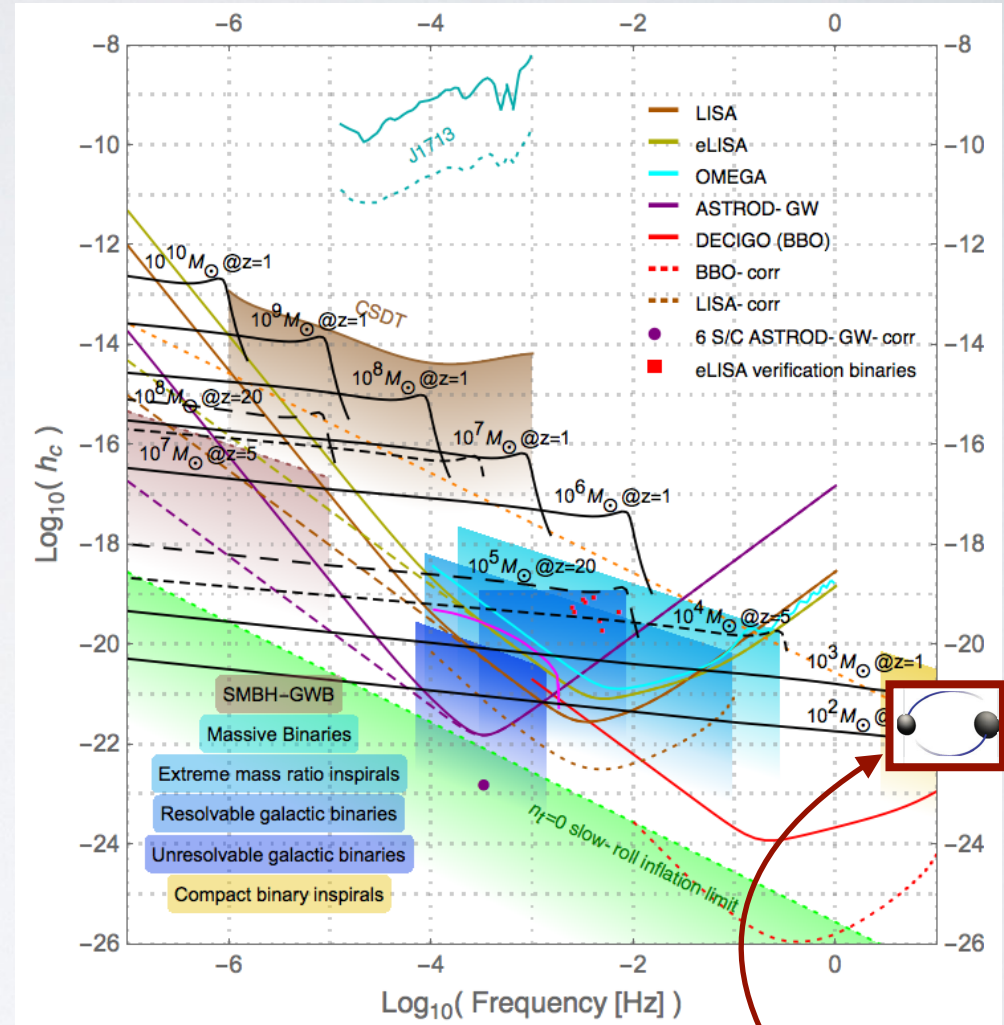


# Next Steps? Going to Space!

# LISA



- arm length of **1.000.000 km**
- center of triangle at  $20^\circ$  behind earth



review: Ni, 1610.01148

First LIGO event





### Sub-Femto-g Free Fall for Space-Based Gravitational Wave Observatories: LISA Pathfinder Results

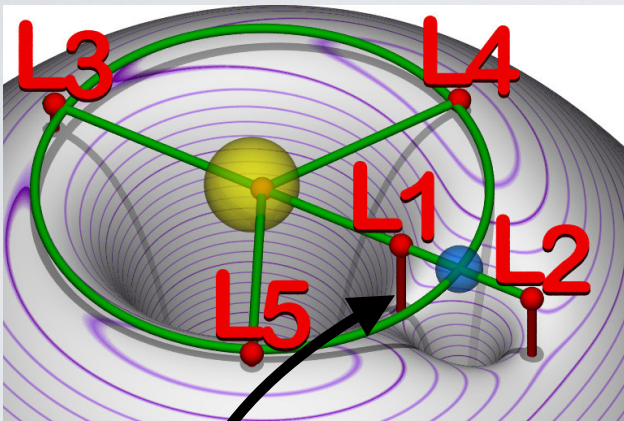
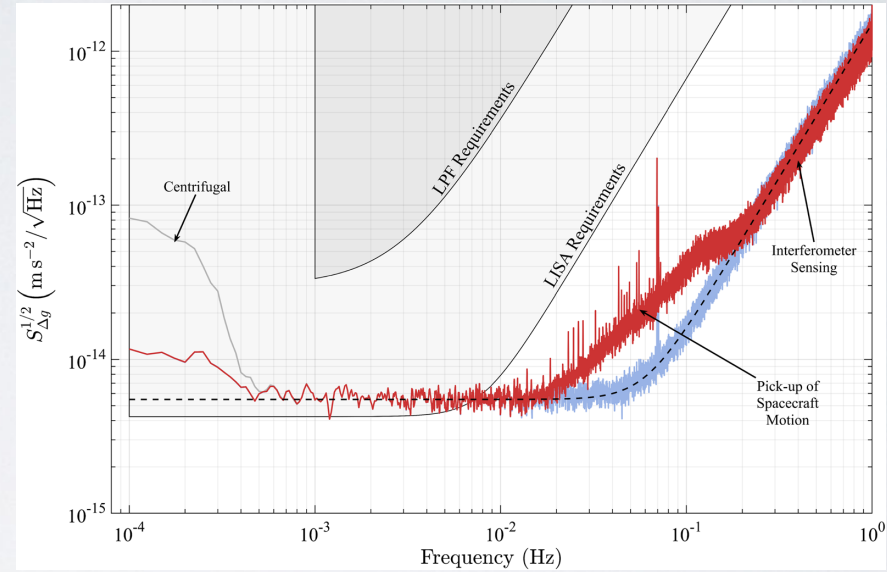


Fig.: Wikipedia



# LISA – The trailer...