

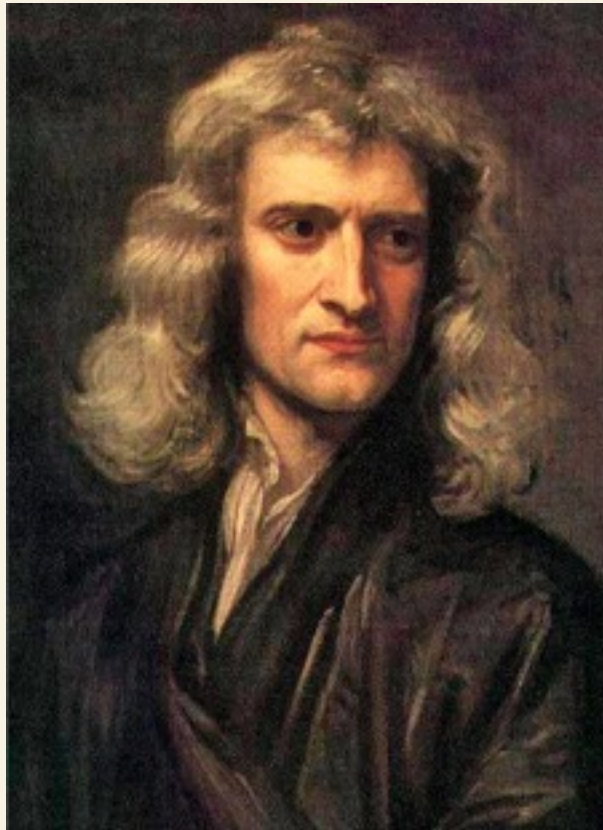
Gravitational Waves

Anirban Ain

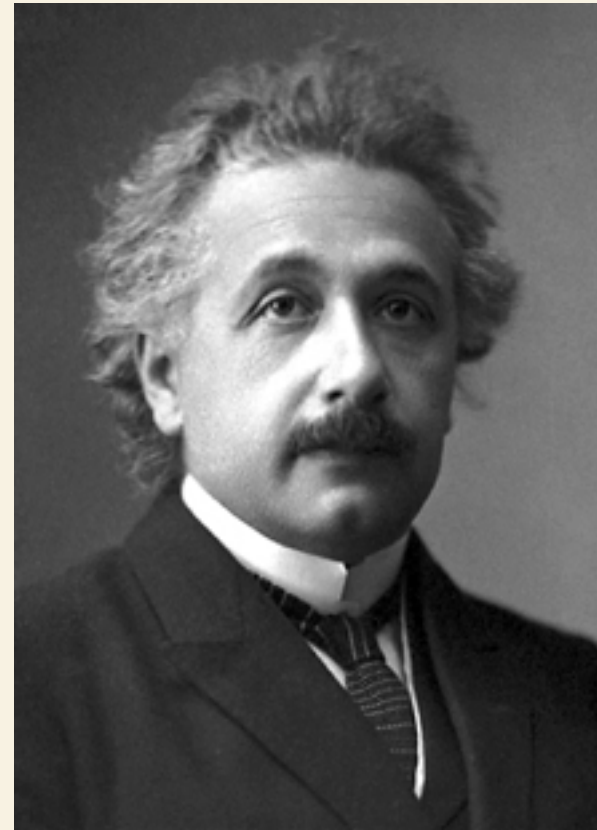


Yet another proof of Einstein's General Relativity

Gravitation vs. Newton & Einstein

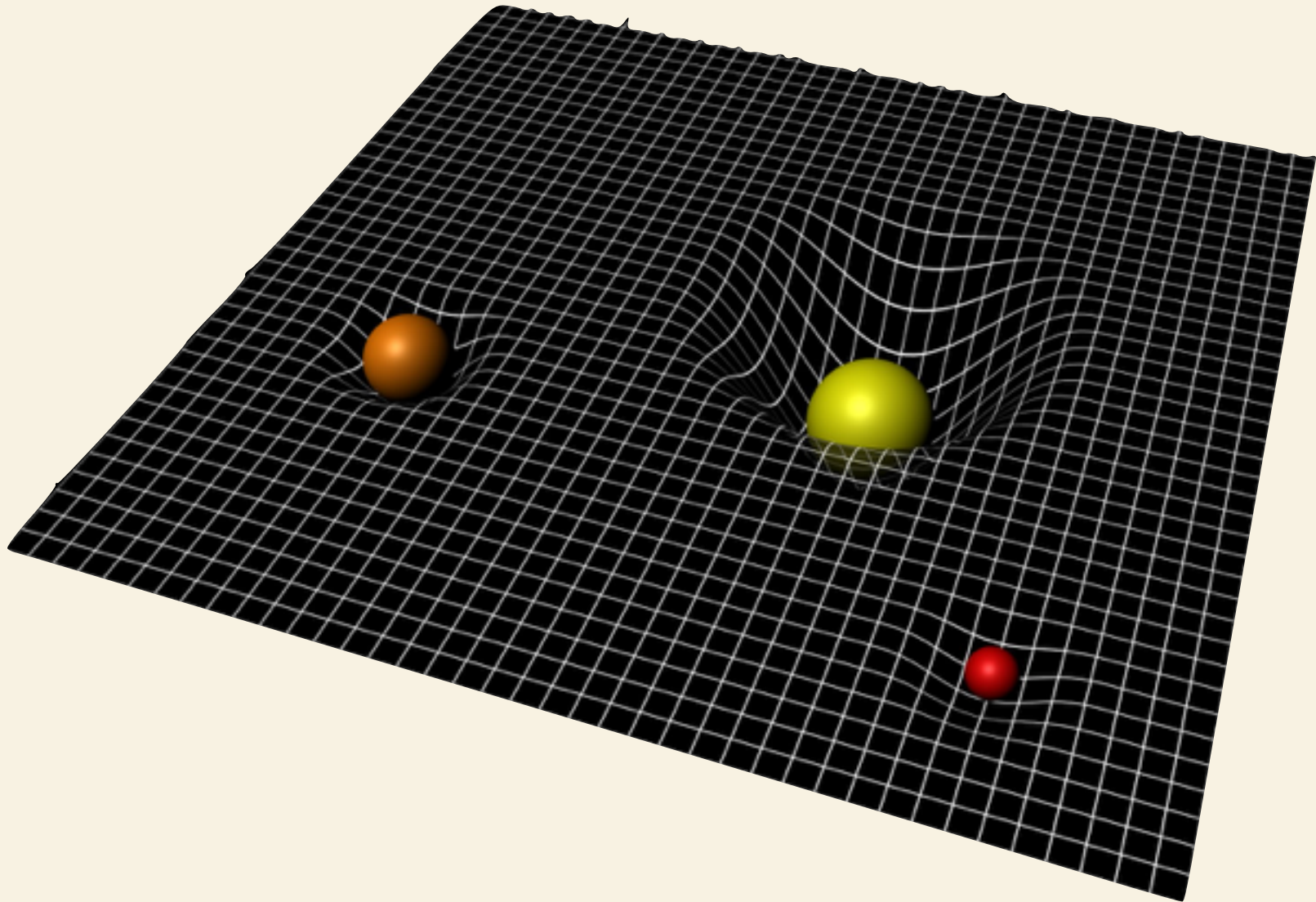


Newton's Law of Universal Gravitation (1687)

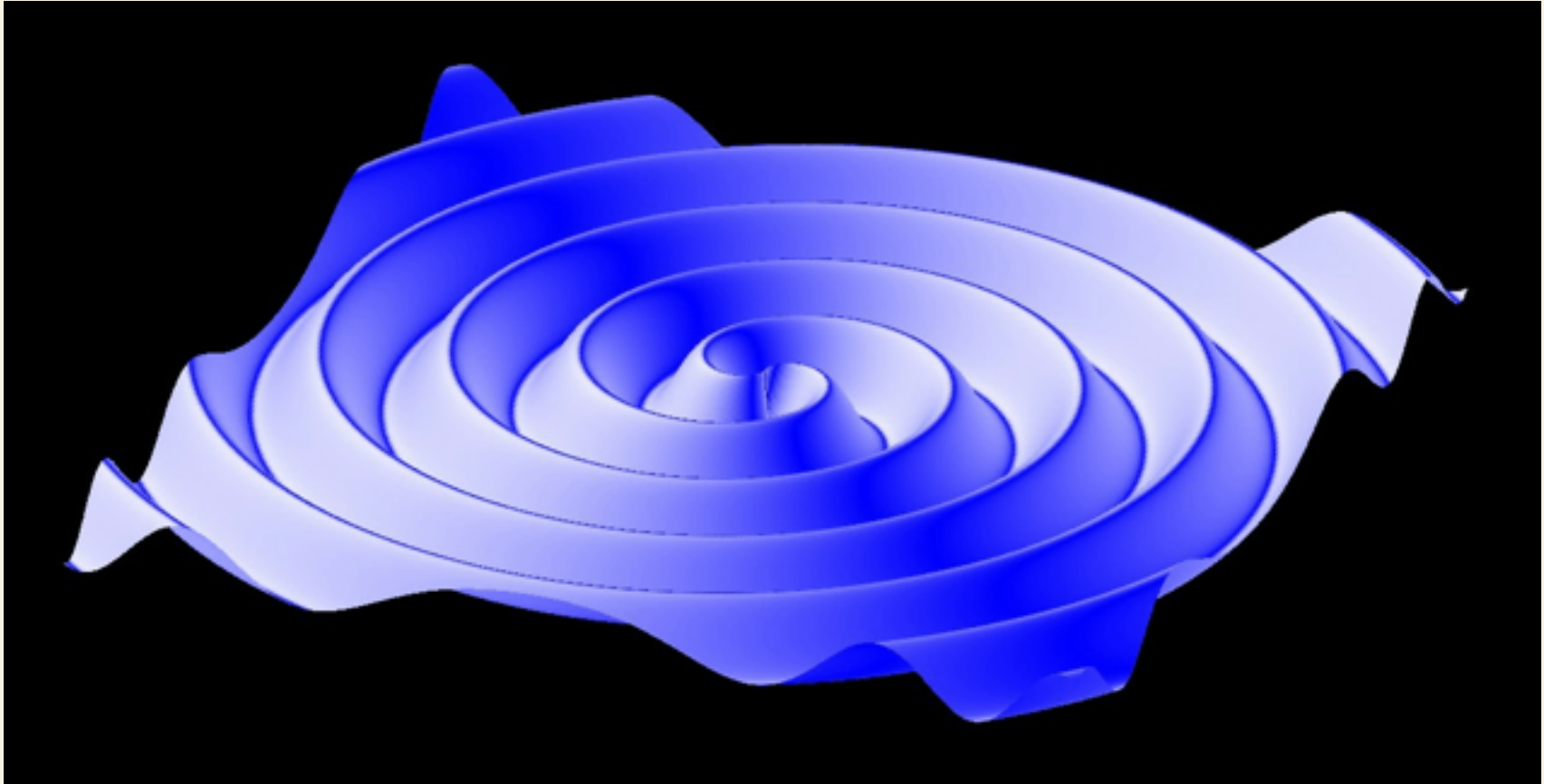


Einstein's General Relativity (1915)

Gravitation as Spacetime Curvature



Gravitational Waves



Disturbance of Spacetime Propagates

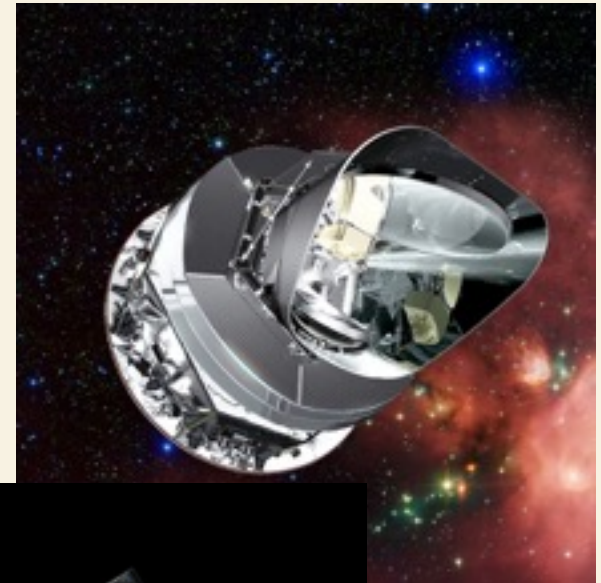
Why Study Gravitational Waves



Why Study Gravitational Waves



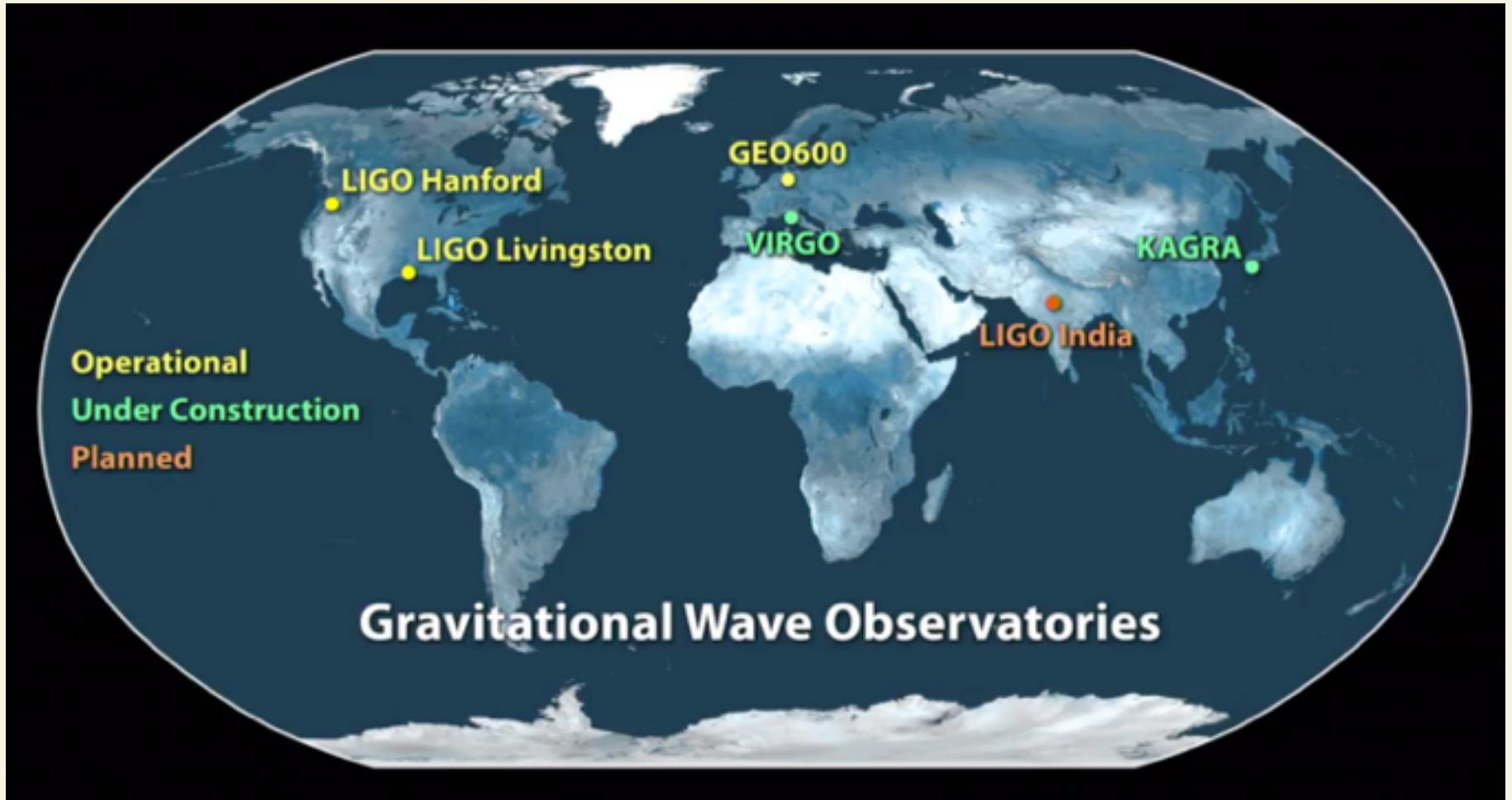
Why Study Gravitational Waves



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Observatories around the World



LIGO

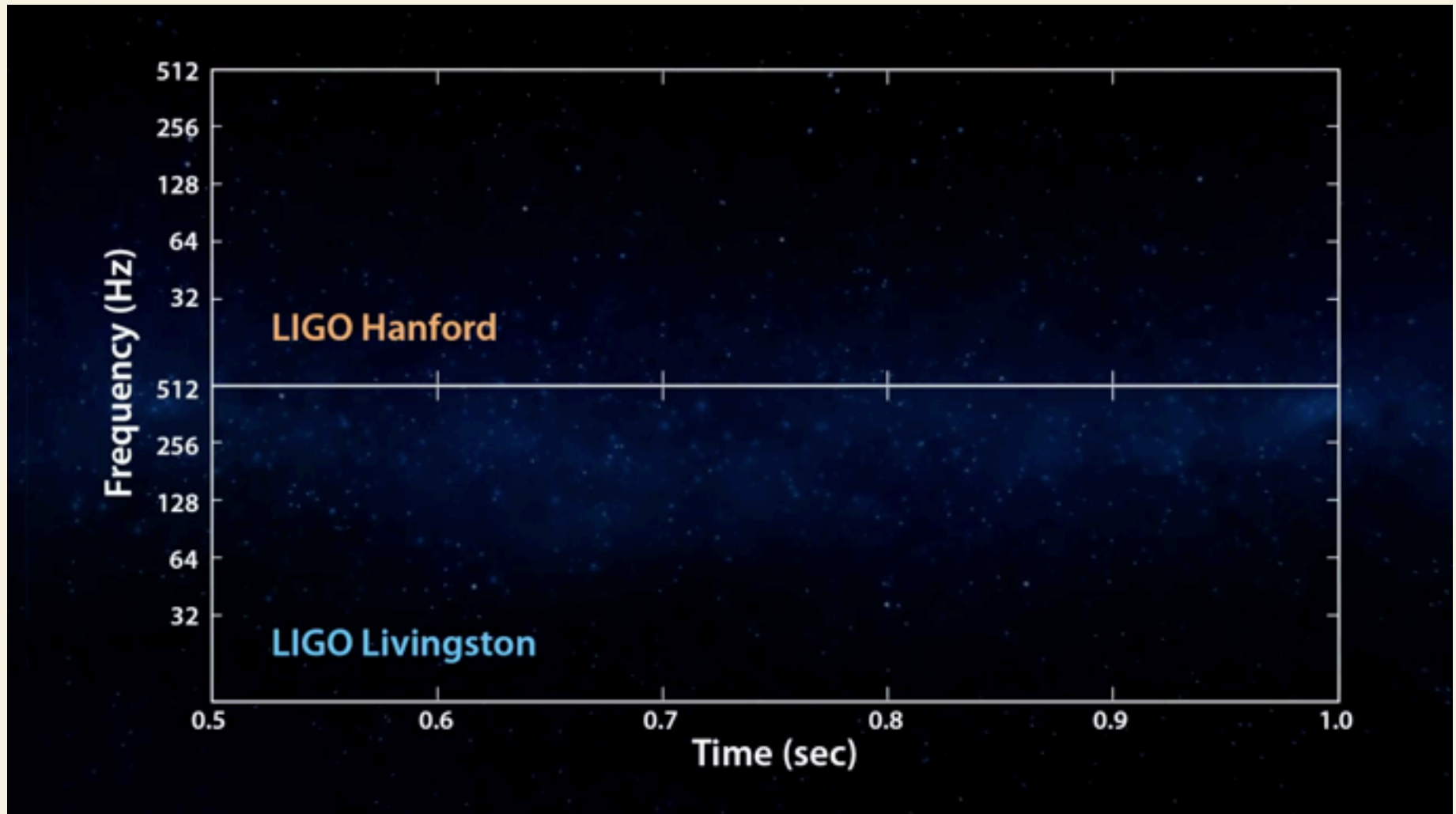


Laser Interferometer Gravitational-Wave Observatory

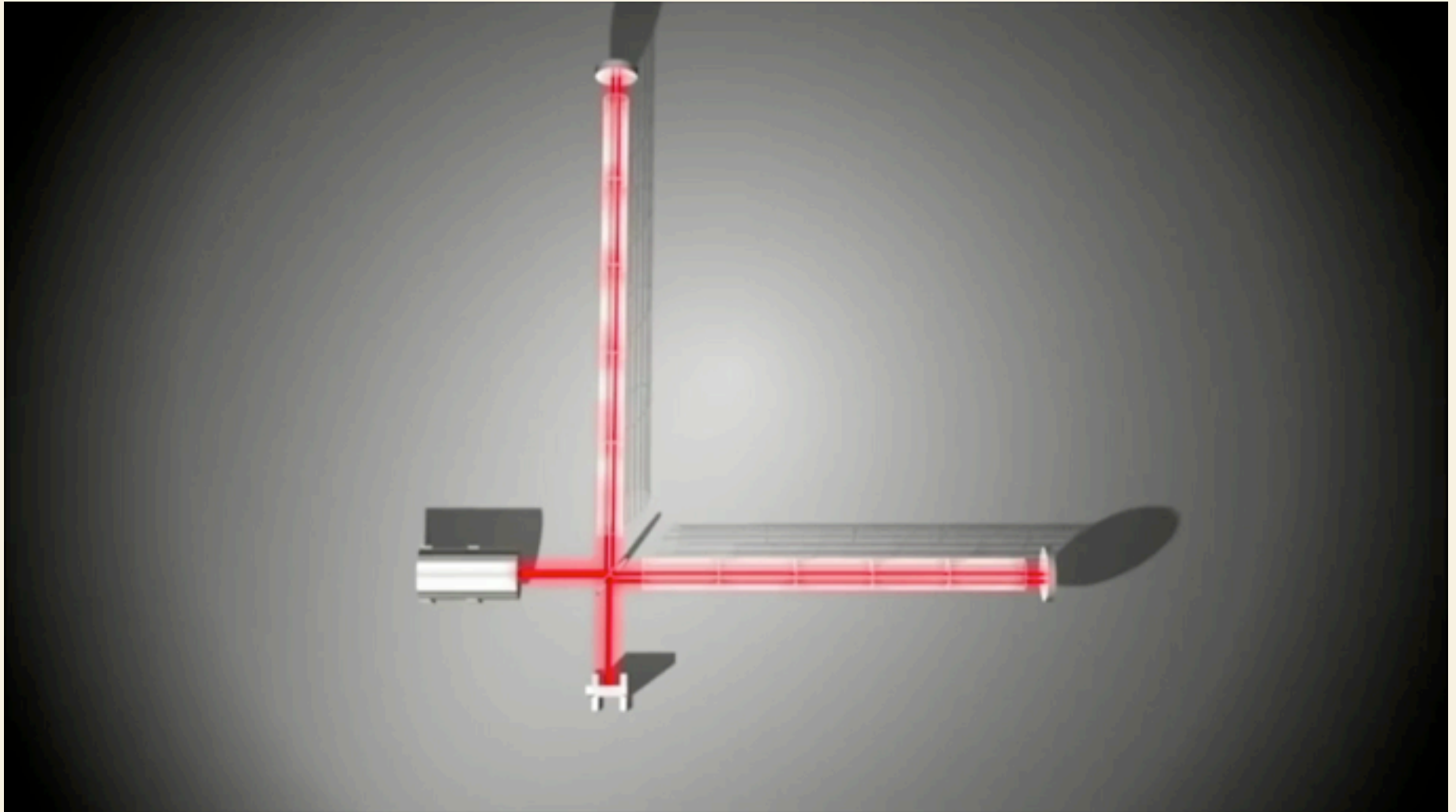
LIGO




What was Discovered?



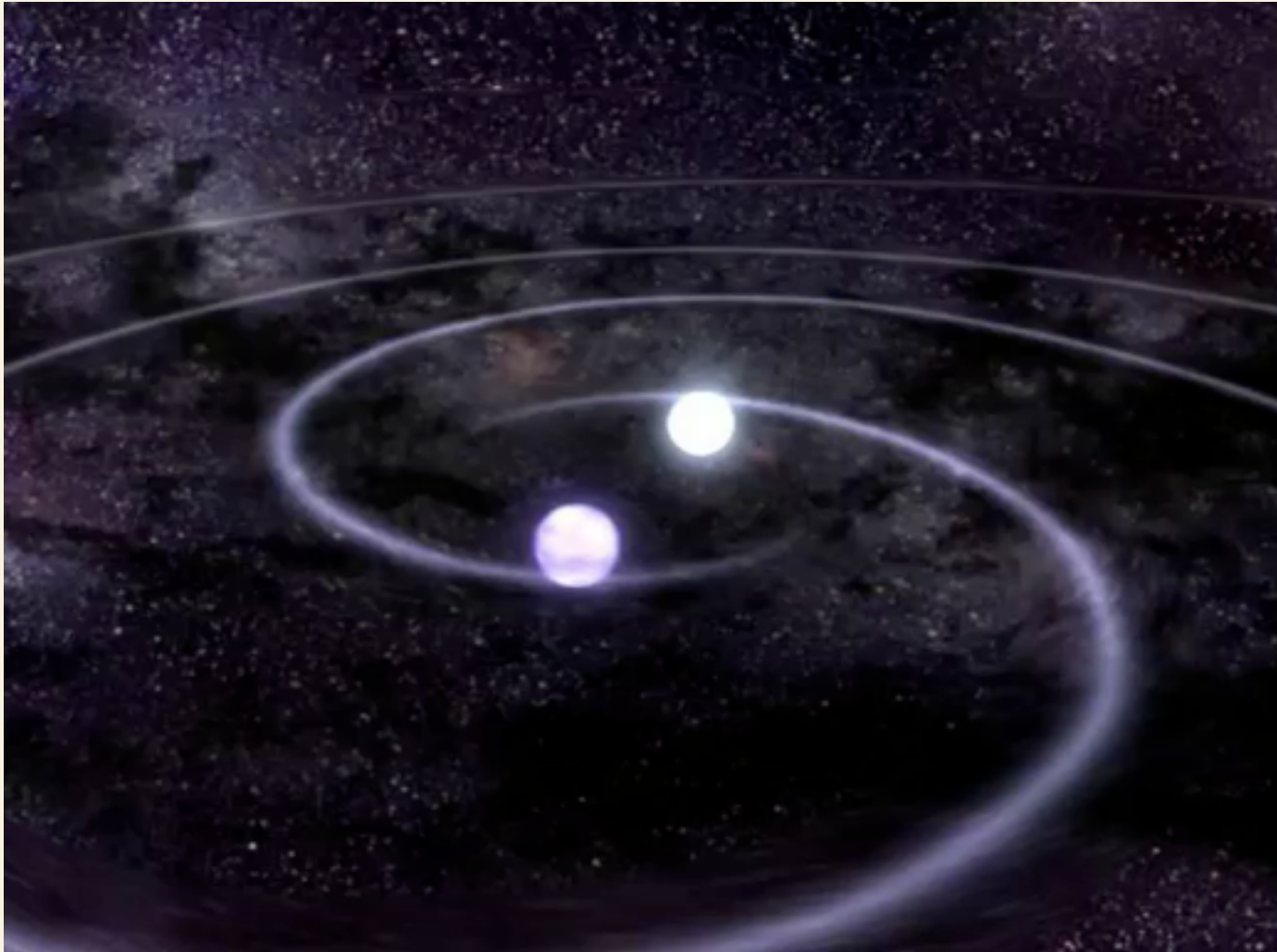
How was it Discovered?



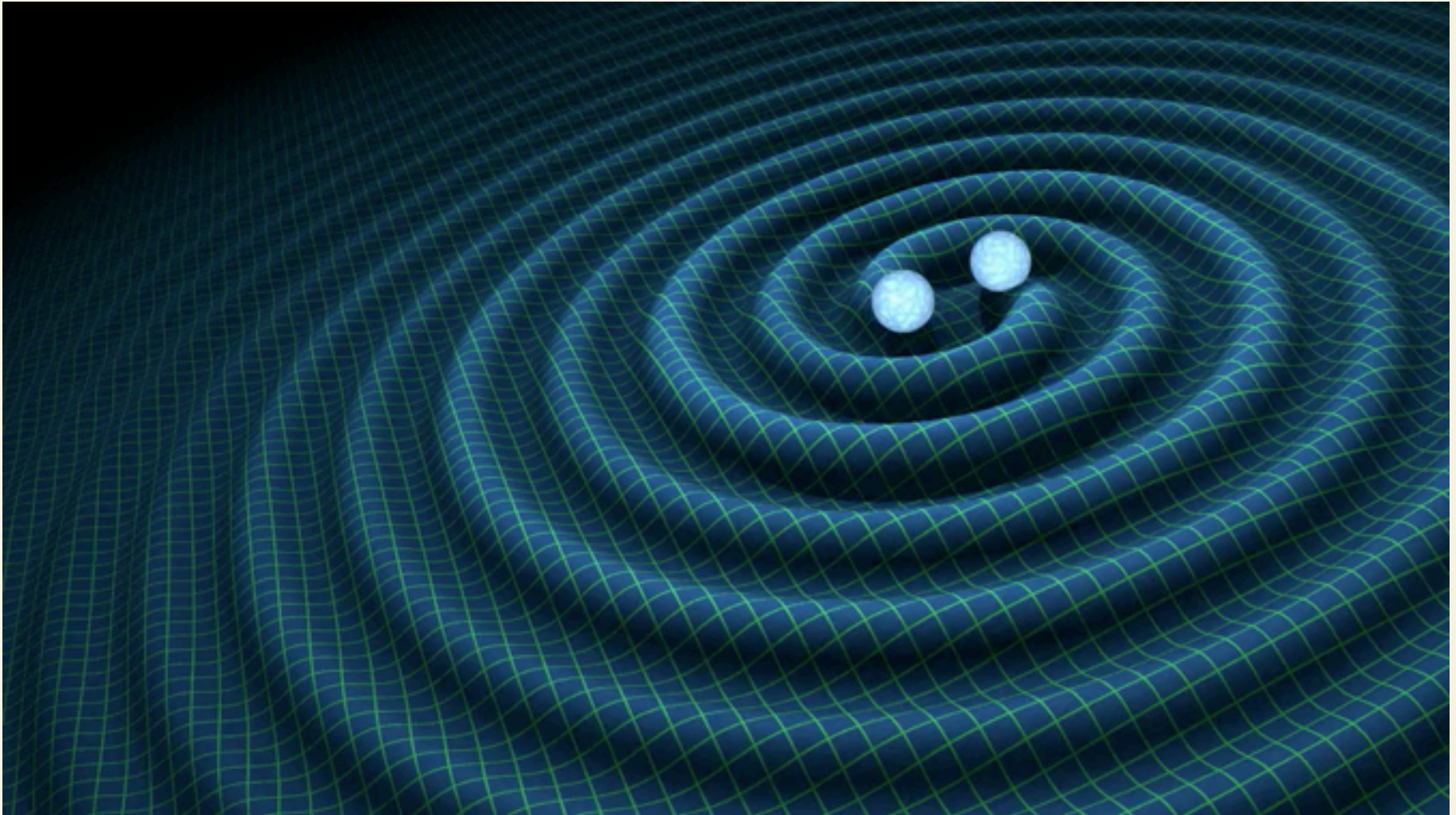
Why it took 100 years?

		10^{-21}	
Max		4×10^{-16}	cm
Si		0.9×10^{-10}	cm
Size		2.7×10^{-15}	cm

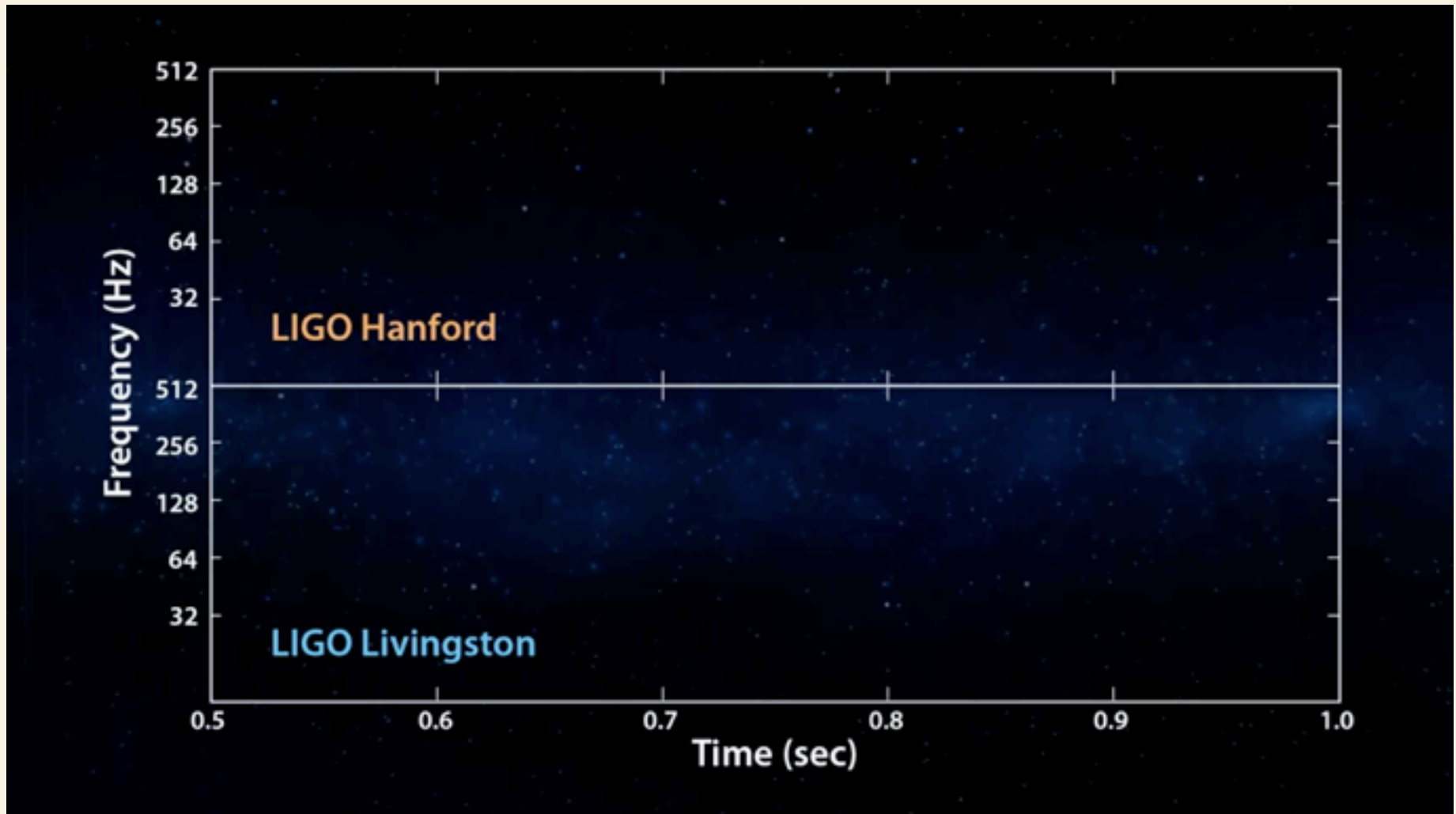
Merging Compact Stars



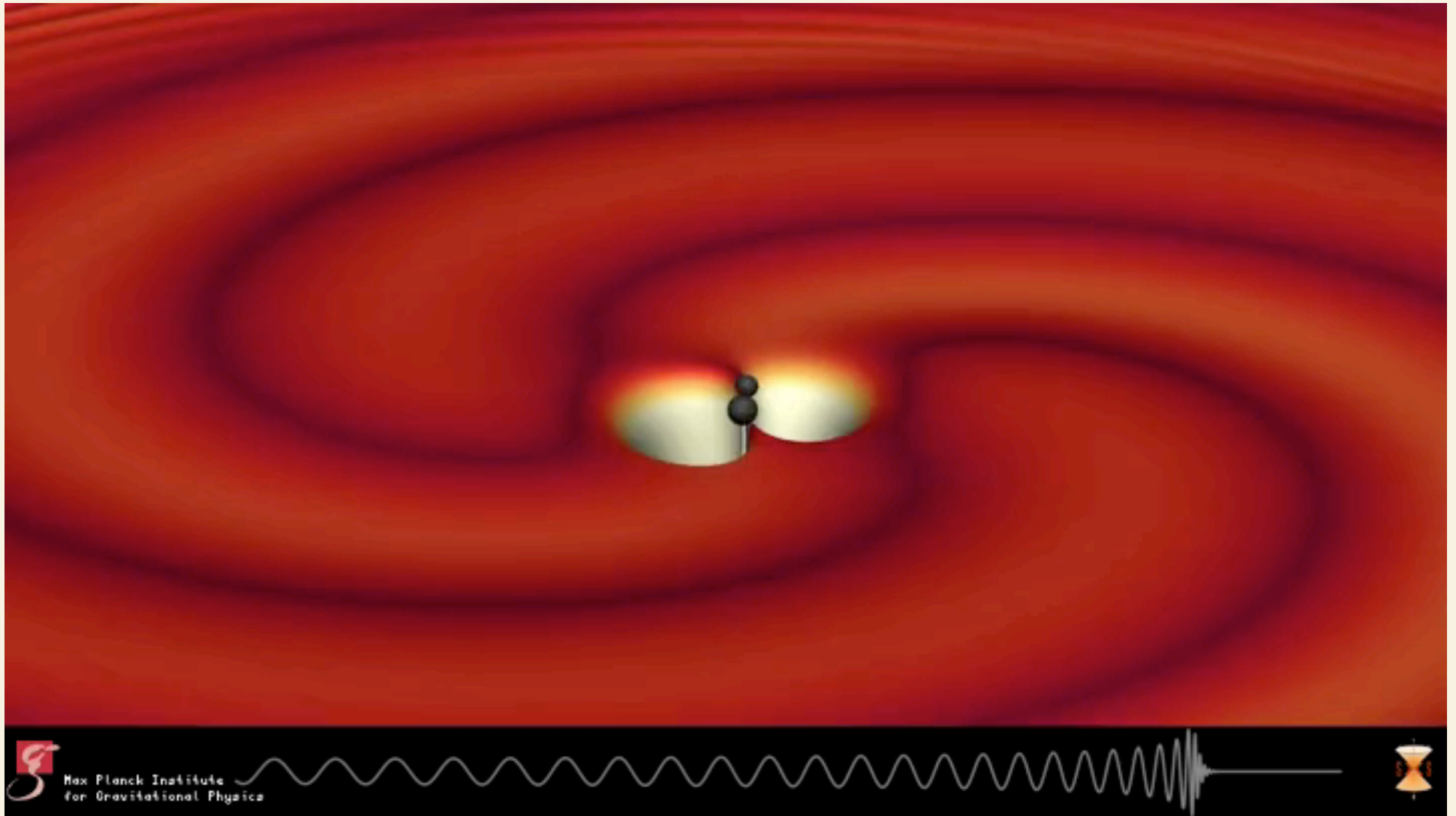
Generation of GW



The Observed Event

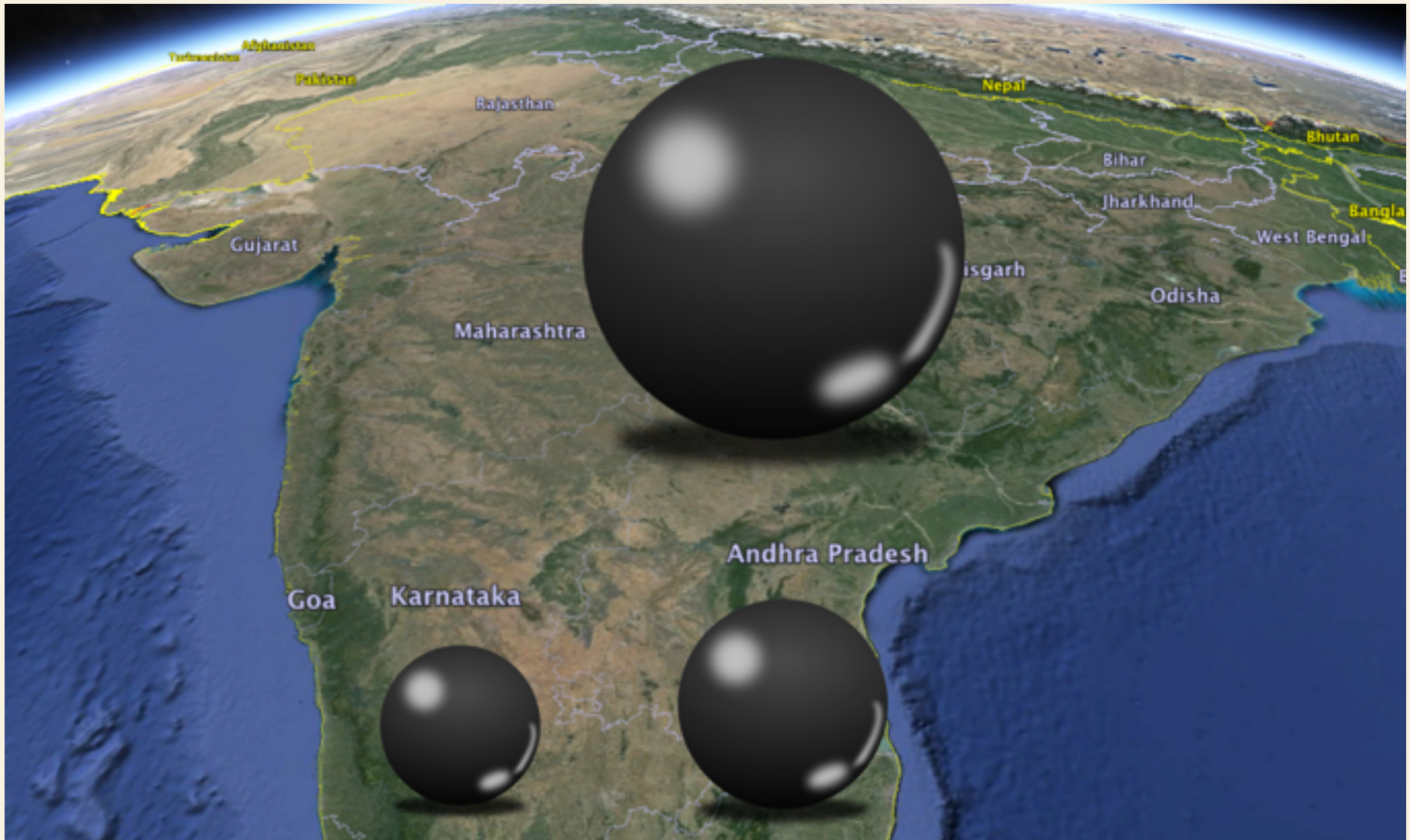


The Observed Event

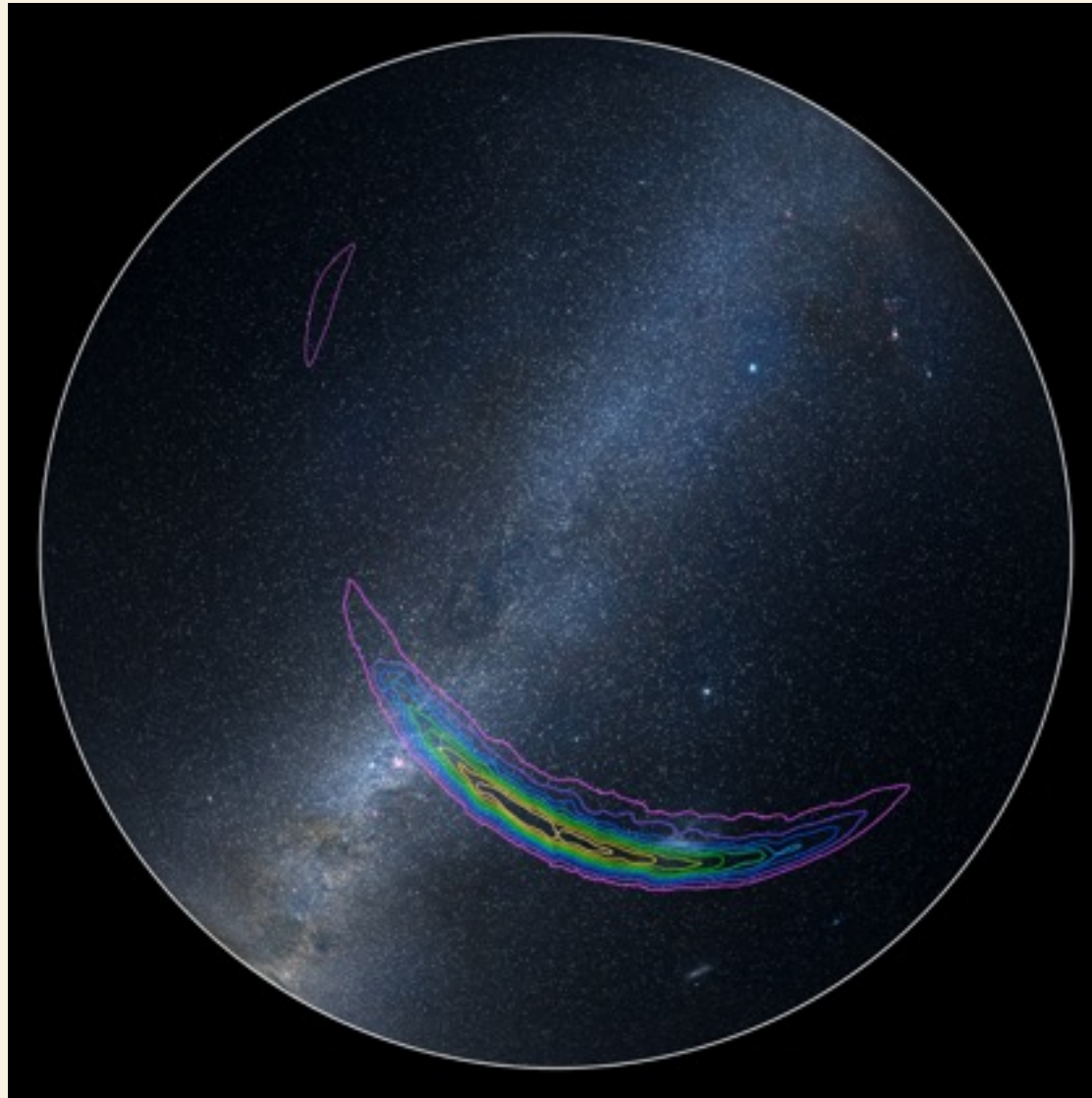


Simulation of the Event

The Observed Event

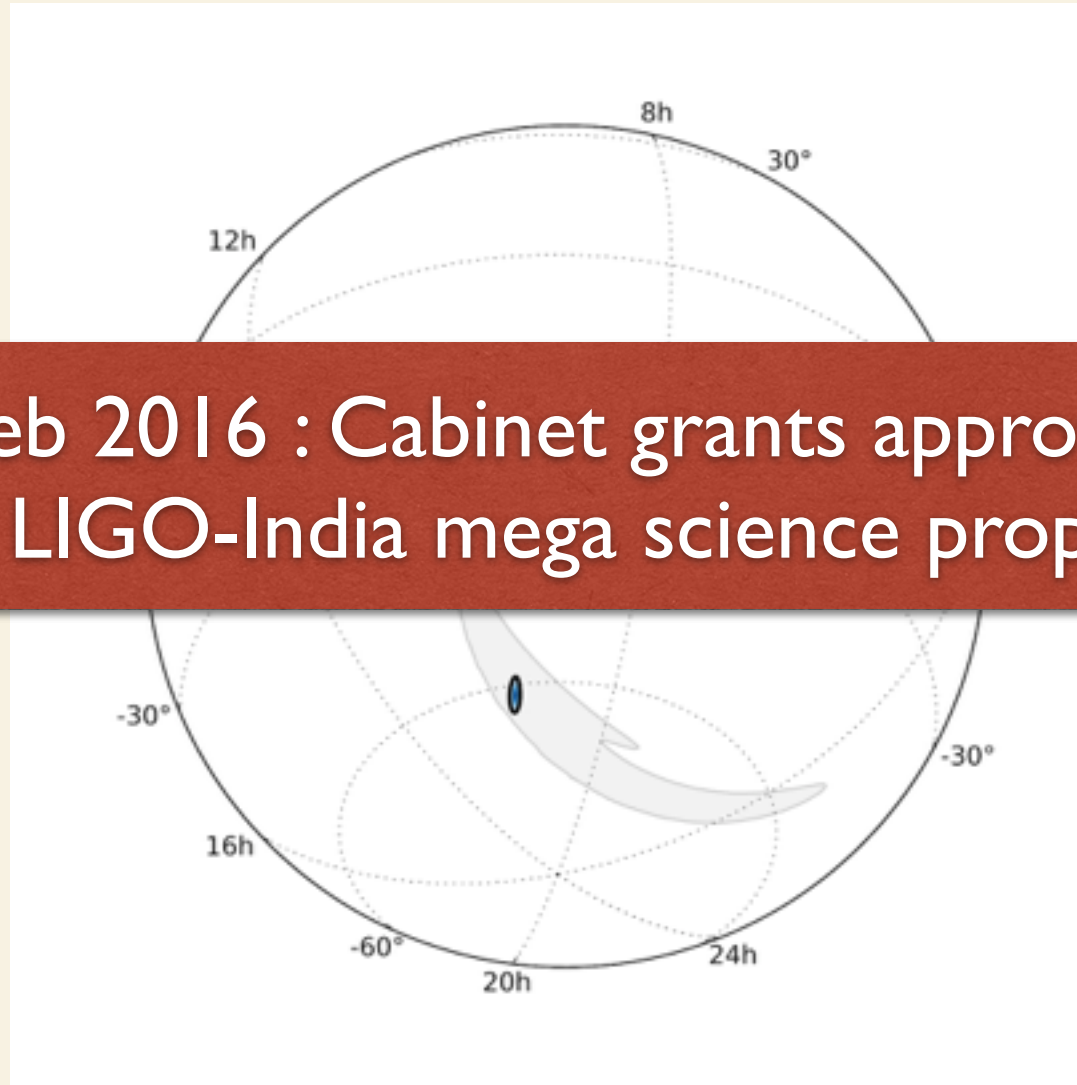


What was the Origin of the Signal?



LIGO India

17 Feb 2016 : Cabinet grants approval to the LIGO-India mega science proposal



THE BEGINNING OF GW ASTRONOMY