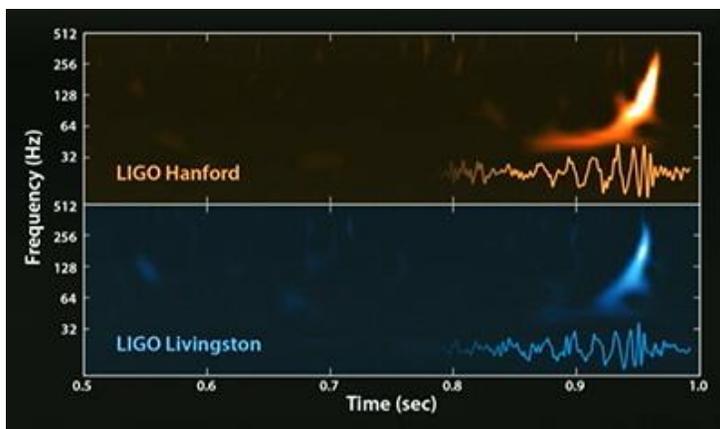


Dr Nergis Mavalvala and Detection of First Ever Gravitational Waves by LIGO from Two Merging Black Holes.

Dr. Nergis Mavalvala is a Pakistani-American Astrophysicist who played an important role in research in detection of gravitation waves, predicted by Einstein nearly a century ago.

The first ever direct detection of gravitational waves has been made by researchers working on the Advanced Laser Interferometer Gravitational-wave **Observatory (aLIGO)** in the US. The breakthrough was announced on 11th February, 2016 in Washington, and ended several decades of search for these ripples in space–time. The detection was actually made on 14h September, 2015, simultaneously at aLIGO detectors in Hanford, Washington and at Livingston, Louisiana, while these instruments were being calibrated.



[Ringing chirp: the waveform of event GW150914](#)

The waves were observed from the collision of two black holes of 36 and 29 solar masses, respectively, which merged to form a spinning, 62-solar-mass black hole, some 1.3 billion light-years (410 mpc) away in an event dubbed GW150914. These collisions created ripples in the spacetime fabric. “Gravitational wave astrophysics has the potential of providing a radically different view of the universe, including direct observation of massive dark matter, large-scale nuclear matter and a test of strong-field gravitation” (ref: Physicsworld.com, February, 11, 2016.)

This breakthrough now adds ‘ears’ to the ‘eyes’ of astronomy and is verification of predictions made in Einstein's general theory of relativity.

A key figure in the process is **Dr. Nergis Mavalvala who was born in Karachi in 1968, educated at Wellesley and MIT, and winner of the prestigious MacArthur Fellowship “genius’ award.**

Suggested Readings:

1. B.P. Abbot *et al*; **Observation of Gravitational Waves from a Binary Black Hole Merger** , Physical Review Letters, 11th February 2016. (PRL, 116, 061102, 2016)
2. **LIGO detects first ever gravitational waves – from two merging black holes**
Source: Physics World Feb 11, 2016;