observed by H, L, V
source type binary neutron star (NS)
date 17 August 2017
time of merger 12:41:04 UTC
signal-to-noise ratio 32.4
false alarm rate < 1 in 80 000 years
distance 85 to 160 million light-years
total mass 2.73 to 3.29 M⊙
primary NS mass 1.36 to 2.26 M⊙
secondary NS mass 0.86 to 1.36 M⊙
mass ratio 0.4 to 1.0
radiated GW energy > 0.025 M⊙c²
radius of a 1.4 M⊙ NS likely ≤ 14 km
effective spin parameter -0.01 to 0.17
effective precession spin parameter unconstrained
GW speed deviation from speed of light < few parts in 10¹⁵
inferred duration from 30 Hz to 2048 Hz** ~ 60 s
inferred # of GW cycles from 30 Hz to 2048 Hz** ~ 3000
initial astronomer alert latency* 27 min
HLV sky map alert latency* 5 hrs 14 min
HLV sky area† 28 deg²
# of EM observatories that followed the trigger ~ 70
gamma-ray, X-ray, ultraviolet, optical, infrared, radio
host galaxy NGC 4993
source RA, Dec 13°09'48", -23°22'53"
sky location in Hydra constellation
viewing angle ≤ 56° and ≤ 28°
Hubble constant inferred from host galaxy identification 62 to 107 km s⁻¹ Mpc⁻¹

Parameter ranges are 90% credible intervals.  
*referenced to the time of merger  
**maximum likelihood estimate  
†90% credible region

Images: time frequency traces (top), GW sky map (left, HL = light blue, HLV = dark blue, improved HLV = green, optical source location = cross-hair)

GW=gravitational wave, EM = electromagnetic, M⊙=1 solar mass=2x10³⁰ kg, H/L=LIGO Hanford/Livingston, V=Virgo