

# Additional blind hardware injections in S5

*LIGO-G2600368*

Panagiotis Iosif

*Open Data group - March 15, 2026*



**UNIVERSITÀ  
DEGLI STUDI  
DI TRIESTE**



Dipartimento di  
**Fisica**  
Dipartimento d'Eccellenza 2023-2027



# GWOSC: S5 documentation update

- The documentation page for CBC hardware injections in S5, <https://gwosc.org/s5hwcbc/>, was updated with two additional blind injections.
- The GPS merger times of the injections are: **865103811.84** and **865104412.3**.

## S5 Compact Binary Coalescence Hardware Injections

### Hardware Injections

During LIGO's 5th Science Run (S5), simulated signals were added to the LIGO detectors for testing and calibration. The simulated signals are known as hardware injections, because they were created by manipulating mirrors in the arms of the interferometers. Times of hardware injections are marked in LIGO data files by injection data quality channels. See the [injection bit mask](#) definition for details.

### Compact Binary Coalescence Injections

Compact Binary Coalescence (CBC) injections were added at planned times throughout S5. Each CBC injection used a Post-Newtonian waveform to approximate the signal expected from the inspiral of a binary neutron star system, a neutron star with a black hole, or a binary black hole. A spectrogram of a sample injection can be seen in the image on this page.

### Blind Injections

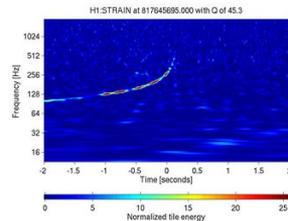
In addition to the CBC injections noted in the tables below, there were CBC "blind injections" in S5:

**CBC Blind Injection: 873739911**

**Blind Injection Tests: 865103811.84, 865104412.3, 865120335 and 865143706**

More information about blind injections can be found in the following resources:

- [arXiv:1005.4655](#)
- [arXiv:1111.7314](#)
- [arXiv:2602.21615](#)
- [introduction to blind injections](#)



# GWOSC: S5 documentation update

## Revision History

- **November 14, 2019:** Repository migration between version control systems
- **January 26, 2026:** Added an extra blind injection test identified at GPS time 865103811.84
- **February 24, 2026:** Added an extra blind injection test identified at GPS time 865104412.3
- **March 15, 2026:** Added resources about blind injections

- The blind injections were at a time when only the Livingston detector (L1) was operating.
- A revision history section was added to the page to reflect the timeline of changes.
- The current list is a best-effort list of all blind hardware injections performed during S5.