Status on Public Alerts

LIGO-Virgo Low-latency Analysis Group
June 20, 2019
Modelled (Compact binary) and unmodeled (burst) pipelines are running in low-latency.

Identification of candidates according to false-alarm-rate (FAR) criterion.

https://gracedb.ligo.org/latest/

a. This has been a quieter month. Only two interesting candidates meeting our FAR threshold for low-latency alerts.

b. One of them, S190524q was retracted.
Preliminary alerts have been consistently sent with latencies <7 minutes for the past month.

The June 25 code rollout will decrease latency to <3 minutes.

Latency is dominated by selection of the preferred event.

* = updated GCNs sent

(S190408an, S190412m, S190421ar, S190425z, S190426c, S190503bf, S190510g, S190512at, S190513bm, S190517h, S190518bb, S190519bj, S190521g, S190521r, S190524q, S190602aq)
Event summary: S190524q

- [https://gracedb.ligo.org/superevents/S190524q/](https://gracedb.ligo.org/superevents/S190524q/)
- Retracted due to identification of a glitch in L1.
- Notes:
  - An automated GCN Notice went out in 6 minutes and 3 seconds.
  - Event retracted within ~10 minutes of preliminary notice following manual inspection.
Event summary: S190602aq

- [https://gcn.gsfc.nasa.gov/notices_l/S190602aq.lvc](https://gcn.gsfc.nasa.gov/notices_l/S190602aq.lvc)
- P_astro calculation indicates likely BBH candidate (99% BBH).
Outlook

- Single interferometer GW events are now available in low-latency.
- Automated ingestion of external triggers (GRBs) is working and determination of coincidences with GW is working. More developments in coming weeks.

**LIGO-Virgo Public Alerts User Guide & Support**
- New, shorter URL: [https://emfollow.docs.ligo.org/](https://emfollow.docs.ligo.org/)
- Features new tutorial on multiorder sky maps: [https://emfollow.docs.ligo.org/userguide/tutorial/multiorder_skymaps.html](https://emfollow.docs.ligo.org/userguide/tutorial/multiorder_skymaps.html)
- Feedback or requests for information to: emfollow-userguide@support.ligo.org

**Mailing list**
- Please sign up to the public OpenLVEM mailing list; anyone can subscribe
- Instructions at [https://wiki.gw-astronomy.org/OpenLVEM](https://wiki.gw-astronomy.org/OpenLVEM)
- We will use it to announce changes of configuration, plans, etc
## LIGO/Virgo Public Alerts

Detection candidates: 14

<table>
<thead>
<tr>
<th>Event ID</th>
<th>Possible Source (Probability)</th>
<th>UTC</th>
<th>GCN</th>
<th>Location</th>
<th>FAR</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>12000140</td>
<td>BBH (99%)</td>
<td>June 2, 2019</td>
<td>GCN Circ</td>
<td>Notes</td>
<td>1 per 16.673 years</td>
<td></td>
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<tr>
<td>12001740</td>
<td>BBH (&lt; 50%)</td>
<td>May 19, 2019</td>
<td>GCN Circ</td>
<td>Notes</td>
<td>1 per 100.04 years</td>
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<td>12002109</td>
<td>BBH (97%) , Terrestrial (3%)</td>
<td>May 19, 2019</td>
<td>GCN Circ</td>
<td>Notes</td>
<td>1 per 8.3367 years</td>
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<td>BBH (96%), Terrestrial (4%)</td>
<td>May 18, 2019</td>
<td>GCN Circ</td>
<td>Notes</td>
<td>1 per 5.5578 years</td>
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<tr>
<td>12001740</td>
<td>BNS (75%), Terrestrial (25%)</td>
<td>May 18, 2019</td>
<td>GCN Circ</td>
<td>Notes</td>
<td>1 per 3.1557 years</td>
<td>RETRACTED</td>
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</tbody>
</table>

**Useful Information**

- "NEW" Gravitational-wave alert summary page
- Detailed information about GCN circulars
- Real-time data products available in the LIGO/Virgo Open Data guide
- Found a bug? LIGO/Virgo users can report issues on the GraceDB Github page.

**Server code version:** 2.5.1