



Academic Journals and Major Discoveries

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AAS Journals

AMERICAN ASTRONOMICAL SOCIETY

What do we (AAS Journals) provide authors normally?

- Review and (hopefully) validation
- Permanent archiving with object, data and reference linking to provide seamless access to readers. (OA)
- Copy editing and other improvements in format to enhance readability.
- Some public outreach for selected papers.
- This takes about 3 months for review and revision and about 2 months post acceptance. (The first number has a very large scatter.)

How does this change for major discoveries?

- This is based on our experience with LIGO papers (particularly the first gravitational wave detection in 2015 (published in 2016) and the 2017 NS/BH event, and with the Event Horizon Telescope results for M87.
- Discoveries like this require adherence to a short schedule and a rigorous vetting of claims.
- Less obviously, they require extraordinary efforts on the part of our hosting platform.



What do we need from authors?

- Advanced warning. We can move at extraordinary speeds if we know what's coming. In the case of these papers the authors told us months in advance when to expect the submission of manuscripts, and told us weeks in advance the number and titles of the proposed papers.
- Contact information with for the project leaders and in particular, the name of the single person responsible for revisions to each paper.
- Suggestions for referees. We never promise to use a suggested referee, but for large collaborations it can be vitally important to know the names of relevant experts who are **not** part of the collaboration.
- The deadline (i.e. press conference date and time).
- A commitment to revise quickly (not the usual pace).



What can we promise (in addition to the usual)?

- Speed. We can routinely get a paper from submission to posting in a month with the cooperation of the authors, the referees and our publisher. In extraordinary circumstances this can take days.
- Confidentiality. The results of these studies were already known to a significant number of people (for LIGO - thousands), but to my knowledge, no one involved in the editorial process revealed anything to anyone.
- A deep vetting. We always strive for a good peer review process, but an extraordinary result seems to bring out the best from our editors and reviewers.



The Day of the Press Conference

- We post the papers and allow access timed with the press conference. By the time the announcement is made the papers are accessible (and not before).
- Our publisher arranges for a separate platform so that hundreds of thousands of downloads will not crash the servers.
- We have never taken primary responsibility for arranging publicity. There are always institutions better equipped for this anxious to step up and take credit.

