JGR Space Physics

EDITORIAL
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Key Points:
- A total of 1,366 scientists submitted 3,209 reviews on 1,054 unique manuscripts in 2018, the latest year for which numbers are fully compiled
- Statistics for 2018 are compared against those from the previous 5 years, revealing temporal trends in reviewing metrics
- While some fluctuations exist, the values reveal consistency in both the editorial process and reviewer compliance across the years

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Editorial: Multiyear Analysis of JGR Space Physics Reviewing Statistics

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Abstract The editorial decision process for the *Journal of Geophysical Research Space Physics* is assisted by over 1,000 scientists every year, providing over 3,000 reviews per year. These statistics are presented for the years 2013 through 2018, showing some fluctuations but, overall, consistency in the response of the space physics research community to requests to serve as manuscript reviewers. Over half of these reviews are submitted on time, and the average time to review actually dropped as the load increased. This is greatly appreciated and the community is to be commended and thanked for their willingness to help make this journal thrive and remain a premiere publication in the field.

1. Introduction

For the last several years, the editorials in *Journal of Geophysical Research Space Physics* (JGR-SP) extending thanks to reviewers included not only a listing of all reviewers from the previous year but also statistics regarding those reviews (Liemohn et al., 2016a, 2016b, 2017, 2018). This year, that information was not included in the thank you editorial (Liemohn et al., 2019), with that article adhering to the format used across all journals of the American Geophysical Union (AGU).

This editorial includes those reviewer statistics from 2018, plus an analysis of the trends from 2013 to 2018 in reviewer metrics. Data for this assessment were pulled from the Geophysical Electronic Manuscript Submission (GEMS) database each February for the previous year.

2. Statistics for 2018

Table 1 presents a summary of metrics regarding the reviewer usage for JGR-SP in 2018. The columns are for those people that did at least one review, those asked but did not complete a review, the total of these two numbers, and then the average across all potential reviewers. The first row lists the number of people in each category. with the upper right number of 2,533 being the potential reviewer count. The next line gives the total requests sent out, which break down into the next few rows of declines, no response (equivalent to a decline, when the editor gave up with that request and moved on to their next potential reviewer), asked but not needed (because the slots filled before this person responded), and total acceptances. The acceptances further break down into completed reviews and those still pending. Carryover of invitations not yet accepted or declined as of the end of each year leads to the numbers not always adding up exactly. In general, these discrepancies are tiny relative to the total review count. The two acceptance rates are similar but have different denominators, as detailed in the table notes. The final row lists the decline rate.

In 2018, there were 1,366 reviewers submitting a total of 3,029 reviews. Additionally, there were 1,167 people who the editors sent a review request but did not review a manuscript that year. Again, most of the people in that latter category were “not needed” because the editor sent out more requests than reviewer slots needed. For people that submitted a review in 2018, they completed an average of 2.2 reviews. The average time to submission was 20.7 days, very close to the 21-day requested timeline, yielding 64% rate of on-time submission.

JGR-SP received 1,054 new manuscript submissions in 2018, of which 978 were sent out for review and, subsequently, 687 were eventually accepted. The acceptance rate is therefore 65%. The editors made 2,138 total decisions on these manuscripts, including major and minor revision decisions.’

Table 1
Reviewing Statistics for JGR Space Physics in 2018

	Did one or more	Did none	Total count	Average per person
People in category	1,366	1,167	2,533	—
Total requests to review	4,959	2,159	7,118	2.81
Declines	750	948	1,698	0.67
No response	127	272	399	0.16
Asked but not needed	1,100	879	1,979	0.78
Requests excluding "asked but not needed"	3,859	1,280	5,139	2.03
Reviews completed	3,029	0	3,029	1.20
Reviews pending	34	18	52	0.02
Total acceptances[a]	3,063	18	3,081	1.22
Acceptance rate #1[b]	61.8%	0.8%	43.3%	—
Acceptance rate #2[c]	79.4%	1.4%	60.0%	—
Decline rate	15.1%	43.9%	23.9%	—

[a]Total acceptances is the sum of "reviews completed" and "reviews pending." [b]Acceptance rate #1 is calculated as "total acceptances" divided by "total requests to review." [c]Acceptance rate #2 is calculated as "total acceptances" divided by "requests excluding 'asked but not needed.'"

3. Multiyear Statistics

Figure 1 shows the 6-year temporal variation of some of these reviewing statistics for JGR-SP. Figure 1a shows total count values for the reviews completed, potential reviewers, and a split of those that accepted at least one review and those that did not. Figure 1b shows the average time for review submission each year. Figure 1c presents several percentage quantities, specifically the portion of reviews that was submitted within the requested 3-week interval and three different acceptance rates. Rates #1 and #2 are those defined in Table 1, while Acceptance Rate #3 is a simple average of each person's acceptance rate, regardless of the number of reviews that they completed. Figure 1d includes per person rates for invitations, reviews completed, times the reviewer was not needed, declined, and gave no response.

To assess the significance of the trends seen in the lines in Figure 1, Welch's *t* tests were conducted on each value in the graph compared with the next year's value. All of the variations seen in Figure 1a are highly statistically significant (i.e., at the 99% confidence level). In Figure 1b, the dip from 2014 to 2015 is highly significant and the smaller decrease from 2015 to 2016 is significant at the 95% confidence level. In Figure 1c, the upward trend in the percent of reviews on time is statistically significant, but only the 2013–2014 change in acceptance rates is statistically significant, and the others are not. In Figure 1d, the larger year-to-year changes are statistically significant at either the 95% or 99% confidence level, but about half of the year-to-year changes are not statistically significant.

There are a few key features in Figure 1 that should be discussed. First, a bulge in special collection submissions in the middle of this time interval (Liemohn & Wooden, 2019) caused an increase in reviews needed. All of the parameters in Figure 1a increased and then decreased because of this extra volume of manuscripts submitted to JGR-SP, with a peak in Figure 1a at year 2016 in the yellow, blue, and orange lines. When a concerted effort is made to increase the number of special collections, this causes an increased demand for reviewing on the community because the total number of submissions goes up.

Second, the community admirably responded to this increase in reviewing service workload. Specifically, there was a systematic drop in the average time to review and a corresponding uptick in the percent of reviews on time. The standard deviation on the review time is roughly 10 days each year, with a standard error in the range of 0.2 days. While the acceptance rate slightly dropped as the bulge of papers began, it was not a large decrease and was only significant for 1 year (between 2014 and 2015). Not shown in the figure is the decline rate each year, which is roughly steady at 23%.

Third, the per person rates of reviewing statistics are slowly varying with time. There are two statistically significant temporal changes over the time span in this chart that should be pointed out: The per person reviews completed dropped by 20% and the per person no response rate increased by 70%. The first is a reflection of asking more people to participate in the reviewing process, plotted as the blue curve in Figure 1a. The

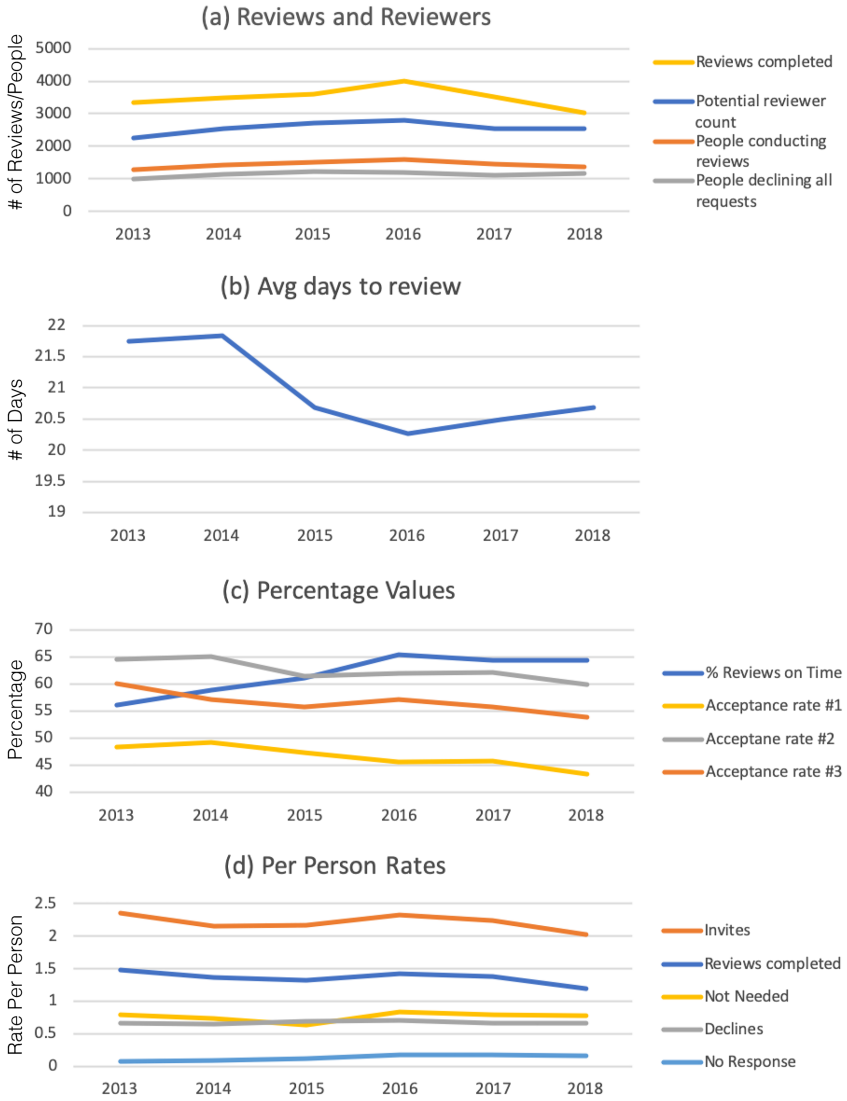

Figure 1. Times series of reviewing statistics in JGR-SP. (a) The total number of reviews submitted that year along with the number of potential reviewers (those asked), which is broken down by those that accepted and those that did not. (b) The average days for review submission.

second, however, is a bit troubling—arguably the only negative news in this analysis. Despite this, overall, the community has been quite consistent in how each person responds to requests to review from JGR-SP.

Fourth and last, there is no large difference from 2013 to 2014. This year-to-year transition is important because the statistics for 2013 are for the previous editorial team. I was selected to become editor in chief in the last few days of 2013, and while I started assigning manuscripts to my new team of editors after the Fall AGU Meeting that December, very few decisions were made in 2013 by the new editors. Nearly all decisions and reviewer assignments in 2013 were made by the previous editorial board. The flatness of the statistics from 2013 to 2014 shows that the editorial process remained consistent across this managerial changeover.

4. Summary

It has been shown that the total volume and per person rate of reviewing during my term as editor in chief of JGR-SP fluctuated somewhat, some for better and some for worse, but these changes are in line with the changing workload and are not drastic or sudden. It implies that the community accepts the responsibility

for peer review and that, for the most part, the community adheres to the guidelines for timeliness. Thank you for your service.

This simple exercise in assessing the reviewing statistics during my term as editor in chief shows that the space physics research community willingly rises to the challenge of conducting peer review. This effort is worthwhile and has a substantial positive impact on our field. Good peer review makes our community stronger by improving each other's writing, methodologies, and scientific process. Please continue this under Dr Michael Balikhin, the new editor in chief of JGR-SP.

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