

Peer Review Guide

Week 10

Confidential peer review is an essential part of the scientific practice. Experts in the same field will provide constructive criticism of a scientist's work to ensure its validity and suggest improvements. In many cases, the review process is double-confidential so that neither the reviewer nor the original scientist is biased by knowing the other's identity.

Now that you have determined the total energy of at least one flare, you will use the same double-confidential peer review process to receive feedback on the methods you chose, and to provide constructive feedback and suggestions on another team's work. To keep the process confidential, **Do not include your name anywhere on your peer review document.**

When writing your review, consider what type of feedback *you* would like to receive. For example, it helps to receive feedback which is very specific, so you know what kind of changes to implement in response. It's nice to get feedback that acknowledges both the parts that are well done, as well as the ones that need some changes. And of course, everyone appreciates (and responds better) to feedback written in a professional and respectful tone.

One key point: The audience for your comments is NOT the course instructors. The other team has authored a report on a flare. You are writing directly to the authors on that team, reviewing their work and helping them find ways to improve it.

You will be graded on how thorough and helpful your feedback is. Don't just tell a group that everything is fine if you have any questions and concerns!

Your peer review will contain the following elements:

Overview: In 1-2 paragraphs, summarize the methods used by the authors whose work you are reviewing. Include information about the flare, describe the baseline correction in detail, describe the method of integration, include relevant python functions used, and report the total energy that was calculated.

Merits: In a paragraph, describe the merits of the work. What was done well? Is it clear what was done? Do they explain and justify their approach?

Critiques: In a paragraph, describe places that could be improved and provide suggestions for improvement. **Be specific and provide actionable advice.**

In both the merits and critiques sections, consider the following:

- Was the subclass of the flare reported correctly? (You can go to the Space Weather Data Portal to verify this!)
- Was the date and time of the flare peak reported correctly? (Again, you can verify on the Space Weather Data Portal)

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- Did the flare have potential contributions from other flares (i.e., two or more flares occurred during the same time period)?
 - Was this accounted for by the authors in their report?
- Was the approach taken clearly explained?
 - Did the authors thoroughly describe the approach they were taking?
 - Are the details clear, and the steps justified? You should be able to tell exactly what strategies they were using, and why.
- Was the baseline correction reasonable?
 - Was the baseline biased by other flares that occurred during the pre-flare signal?
 - Did the authors use enough information to make a reasonable estimate of the baseline?
- Was the method of integration reasonable?
 - Were the limits of integration correct?
 - Did the authors integrate with respect to time, rather than the default index units?
 - Was trapezoidal integration (or some equivalent) used?
- Were the units correct?
 - Did they report the final total energy in ergs?
- Was the Colab notebook clear?
 - Were comments and markdown descriptions used to describe their process?
 - Were there sufficient figures and plots in order to understand their process and the appropriateness of the analysis?

Overall Recommendation: During the scientific peer review process, the reviewer is typically asked to make an “overall recommendation” on whether a paper or report should be published. Here, we ask you to finish by doing the same thing, using the following scale:

No revisions are needed	Needs minor revisions	Needs major revisions
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Conclusions: In a few sentences, summarize your review and briefly justify what overall justification you choose.