Why referees are needed

- An enormous number of scientific articles are submitted yearly (about 10,000 to Physical Review Letters)

- Most journals rely on impartial external reviewers to help evaluate and decide the fate of submitted papers

- This is generally performed as a service to the community, i.e., you don’t get paid to referee papers!
A referee is not your average reader

The average reader relies on the peer-review process to weed out questionable papers.

The referee (a peer) should be much more skeptical than the average reader.

Being skeptical is different from not believing.

What does a referee do?

From Physical Review Letters:

- Journal editors sometimes have established criteria for the suitability of publications in their journals.
- These criteria vary from journal to journal, and generally depend on the nature of the journal’s readership.
- Read the instructions carefully, and address the issues the journal editors would like you to address.

Role of the referee:

Provide an opinion: does the paper satisfy criteria for publication?
Provide an opinion: is the paper impactful at the appropriate level?
Provide an opinion: is the paper correct?
The *Physical Review Letters* (PRL) Criteria

**Validity** - Is the work scientifically sound? If not, do you believe the paper can be revised to correct the scientific defects you find? Are the arguments made to draw the conclusions logically constructed and well-founded?

**Importance** - Does the manuscript report substantial research? Is the conclusion very important to the field to which it pertains? Is the research at the forefront of a rapidly changing field? Will the work have a significant impact on future research?

**Broad interest** - Papers are of broad interest if they report a substantial advance in a subfield of physics or if they have significant implications across subfield boundaries. Is the paper of broad interest?

**Accessibility** – Is the paper written so that it is understandable by the broad PRL audience? Is there an introduction which indicates, to the interested non-specialist reader, the basic physics issues addressed, and the primary achievements? Are assumptions clearly presented? Is unnecessary jargon avoided? Do the title and abstract stand alone? Are tables and figures, if any, well used and effectively presented?

What was getting feedback on your abstract like?
Essential Components of a Good Referee Report

(1). Briefly summarize the main points of the paper
   • to educate the editor
   • to convince the editor and other referees that you’ve actually read the paper (no joke!)

(2). Provide brief evaluations of the different criteria provided by the journal
   These generally include:
   (i) the quality/appropriateness of the methodologies and techniques used in the research
   (ii) the quality of the logical arguments made to arrive at the key conclusions of the paper
   (iii) the clarity of the presentation

(3). Provide a recommendation for or against publication
   Your recommendation can be equivocal if you provide sufficient discussion of the pros and cons of publication.
   If you do recommend rejecting a paper, you can suggest alternate journals to which the paper might be more appropriately submitted.

(4). List essential and suggested changes to the paper
   This is an important component of a report even if you recommend rejecting the paper, as your suggestions might allow the paper to be published elsewhere, or even in the same journal after revision.

Be clear and specific about your questions and suggestions so the authors can respond appropriately.
For any review

1. Briefly summarize the main points of the paper
2. Provide brief evaluations of the different criteria provided by the journal
3. List essential and suggested changes to the paper

The Right Attitude: Referee’s Golden Rule

“Review unto others as you would have them review unto you!”

You should approach refereeing a paper with a sense of constructive objectivity:
- Avoid scientific bias about the subject matter or the general viewpoint of the field.
- Ignore any preconceptions you might have about the authors involved in the work.
- Keep in mind that someone probably put a huge amount of work into the result.

Your report should be written constructively:
- Provide constructive criticism, expressed in a collegial manner, that can benefit both the authors and editors.
- Collegerially point out experimental problems, flaws in the authors’ argument, or alternative interpretations not proposed by the authors.
- Provide appropriate references of previous work if inadequate credit is given to previous work.
- Provide timely reports