On Publishing in the AAS Journals
(as an author)

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Our journals specialize in manuscripts presenting new results on astronomical observations or theory applied directly to astrophysical systems.
The primary metric for publication:

Does your article contain significant new results or theories and does it reflect sufficiently high scientific standards to warrant its publication in AAS Journals?

- Your article must report a major advance or a new approach (i.e., no comment papers, no review papers).

- Incremental steps is usually not good enough. For example, adding 1 object to a previous survey of 1000 is usually not a major new result, but there are exceptions.

- The article should be set in context of previous research by yourself and others.
Scientific writing is a process involving at least two stages: first thinking and planning, and second writing and packaging.

The goal is to tell a convincing and well-woven science story.

Your paper is probably important to you - the invested author. Appreciate, respect and engage your potential readers. Put significant effort into effective communication.

Use the AASTex v6 markup package:
http://journals.aas.org/authors/aastex.html
Title

The title is the most visible part of your article. Often it may be the only item that is read or scanned by others.

It should to be short, accurate and give a good idea of the main topic.

It is used as a main source of information for indexing services and search engines.
The Good, the Bad and the Ugly Trendy/Humorous

The Crab Pulsar at Centimeter Wavelengths

The $^{12}\text{C}(\alpha,\gamma)^{16}\text{O}$ Reaction and its Implications for Stellar Helium Burning

The Effects of Dark Matter Annihilation on Cosmic Reionization

Approaching the Cramér–Rao Bound with PDF Symmetrization

LAXPC reveals variability of GRS 1915+105 in the $\chi$ class

Impulsively Generated Sausage Waves with Transversally Continuous Structuring

Shaken, not stirred: …

To Infinity and Beyond: …

Wait for it: …
Simple in principle, highly nuanced in practice.

Usually the first author has done the majority of the research and writing, the second author helped significantly with the entire project, and the remaining authors played a key role in one or two aspects. Plenty of counterexamples exist.

Policy: You are obligated to ensure all co-authors agree to the content of the original submission and subsequent revisions.
This is arguably the most important part of the paper. No one reads a paper without first reading the abstract, and often only the abstract is read ...

An abstract summarizes the whole paper. Usually a sentence on the aim of the paper, a few sentences on methods and (quantitive) results, and a sentence on the conclusions.

This is often a challenging part of a paper to write, and usually is done last.

AAS Journals: The abstract should be a single paragraph of not more than 250 words.
An introduction should say what you are writing about, why the topic is relevant, provide a complete background with references, and say why your approach offers significant new results.

Good introductions are not necessarily long. One to two pages that only includes useful information should be sufficient for most topics.

Avoid self-plagiarism and plagiarism. Ideas can be paraphrased or reworded but not copied exactly.

http://journals.aas.org/policy/ethics.html
Theory/computation topics usually have a “Methods” section, observational or experimental topics usually have an “Observations” or “Experimental Setup” section.

Give enough information so that someone else could repeat the calculation, observation, or experiment (science 101).

The AAS Journals recognizes importance of software to the community, and the need for clear communication about such software which ensures that credit is given to its authors.

[Use it!]

http://journals.aas.org/policy/software.html
Results

This section is where you extract the science from your data.

Detail your findings with a careful discussion of the uncertainties or limitations. This section often has figures and tables.

AAS Journals encourage the enrichment of articles with supporting data, visualizations, and other digital materials.

Submit all two-dimensional figures as vector graphics files. http://journals.aas.org/authors/manuscript.html
Discussion

In this section try to relate how the quantities evaluated relate to the scientific questions you are addressing.

Relate your results to the “big picture” given in the introduction.

Describe the advantages of your new observations or model, and how it compares to past work (i.e., put your results in perspective).

Describe how might your science be further tested through observations, experiment, or calculations.
This section is usually written just before the abstract, but is generally a bit longer and more detailed than the abstract.

It commonly restates:
your goals (briefly),
what observations, experiments or models you did (briefly),
your main measurements (with error bars), and
what model is/isn’t supported by your results.
Acknowledgements

Thank those that helped make your paper possible. Sponsor funding sponsor, support staff, and people that are not co-authors but did help you.

Authors may also acknowledge the referee for helping improve their paper if they wish (currently ~45% of papers do so.)

It is not appropriate to acknowledge AAS journal staff.
I wholeheartedly endorse using a bibliographic reference manager with a reference import tool (e.g., BibDesk + ads_bibdesk) for error free citations and ensuring that all citations - and only those citations - are resolved.

Be complete as possible.
(Usually a topic did not originate with your thesis.)

Use the AASTex 6 package for citing references.
Submit your paper to http://journals.aas.org
Intermission
Our journals specialize in manuscripts presenting new results on astronomical observations or theory applied directly to astrophysical systems.
The goal of the sometimes intense review process is to improve a manuscript and arrive at publication.

The acceptance rate for the AAS Journals is \( \approx 85\% \).

The review process should thus be viewed as constructive.
The AAS Journals receives ≈100 new submissions each week.

Some are stopped at the gate, and do not proceed to be refereed. These are usually because they are judged to be

• appropriate for a science journal other than the AAS journals.

• comment papers.

• not appropriate for any serious scholarly journal.
Manuscripts that will enter the review process are submitted to a plagiarism checker (iThenticate, CrossCheck).

Manuscripts with a significant statistical component are routinely previewed by the AAS Statistics Editor.

• These comments are provided to the Scientific Editor and become part of the review records.
Manuscripts are then assigned to one of ≃20 Scientific Editors.

The Scientific Editor chooses the referee, supervises the review process, adjudicates any impasses, and makes the final accept/reject decision.

The Scientific Editor is expected to have a general knowledge of the subject of the manuscript.

The referee is expected to be an expert in the field.
Who is chosen as referee? It is our principle to consider every publishing astronomer, worldwide, as a potential referee:

- Someone expert in the subject matter, usually at the post-PhD level.
- Not someone who has previously co-authored with the authors.
- Not someone from the same institution.
- Not someone known to be a mortal enemy.
- Referees are expected to reveal potential conflict-of-interests.

Securing a referee can be complicated for a highly specialized manuscript, or for a manuscript with many authors from many institutions.
When a candidate referee does not accept the invitation, it is helpful if alternative potential referees are suggested.

The AAS journals keeps a databank on authors and referees: Who has served as referee, when, on which subjects, length of time in submitting reports, and so on.

AAS Statement: “Although peer review can be difficult and time consuming, scientists have an obligation to participate in the process.”
Our goal is to receive a referee’s report within 3 weeks of the referee accepting. Authors sometimes confuse the start of the 3 weeks with the submission date of their manuscript. Don’t be one of these.

By default, referees are anonymous. If a referee wishes to waive anonymity (and the Scientific Editor agrees), then direct correspondence between authors and referee is discouraged.

Experience shows that the author/referee interaction is usually positive and constructive.

The Scientific Editor can edit the referee report or the author reply (gender neutrality, personal attacks, bombast, etc.)
Responding to a referee report

Relax.

Read the report carefully.

If a report contains some critical comments, my suggestion is to take a few days to cool off. You have 6 months to reply. Firing off an angry response within an hour is rarely useful.

If a referee misinterprets a point it is not necessarily his/her fault, you may not have explained it as clearly as you think you did.

Remind yourself of the goal of the review process.

Relax.
Closure is usually reached after 2 or 3 author/referee iterations with a timescale of a few months.

In the case of a stalemate, a Scientific Editor may seek a second referee on their own, grant the author’s request for a second referee, or make a decision.

If a second referee is sought, the second referee is always asked for an independent review, but sometimes informed about the general nature of the impasse.

The Science Editors serve as arbitrators and mediators, and eventually as judges, in the evolved peer-review process.
Celebrate when your paper is accepted for publication in the AAS Journals!

It might even appear on AAS Nova!

http://aasnova.org