Scientific Writing 6951

Wednesdays 10-12 Room 0.008

http://www.astro.uni-bonn.de/~izzard/writing.html

Last time on Scientific Writing . . .

● Titles

Informative Accurate Clear Concise Attention!

● The good:

Surface Brightness Profiles of Seyfert Galaxies
K0I-1299 b: a massive planet in a highly eccentric orbit transiting a red giant
Observing Ultra-High Energy Cosmic Rays with Smartphones

● Titles

Informative Accurate Clear Concise Attention!

● The bad:

Spectroscopic confirmation of K0I-1299b: a massive warm Jupiter in a 52-day eccentric orbit around a giant star
Seventy-two new non-eclipsing BEER binaries discovered in CoRoT lightcurves and confirmed by RVs from AAOmega
Results from BASS, the BANYAN All-Sky Survey

● And the ugly very bad:

Consistent system of oscillator strengths of A3Δ – X2Π(0,0) and B3Σ– – X2Π(0,0) bands of CH molecule
Six newly-discovered hot Jupiters transiting F/G stars: WASP-87b, WASP-108b, WASP-109b, WASP-110b, WASP-111b and WASP-112b

The Abstract

● A short description of the work

  • Objectives, scope
  • Methods
  • Results summary
  • Main conclusion(s)

The Abstract

• Short = less than 300 words, aim for about 150-250!
The Abstract

- Short = less than 300 words, aim for about 150-250!
- No room for: waffle, fluff, long narrative
- Same rules as for the TITLE:
  - Informative
  - Accurate
  - Clear
  - Concise
  - Attention

- Often published with the title: may be your only chance to sell your work!
Scientific Writing

Astrophysics Data System

The Abstract

- Indexed on search engines
- Our survey says: everyone reads it!

So:
- Make every sentence count
- Avoid citations, acronyms, too much jargon
- No figures, references, tables, equations
- The abstract STANDS ON ITS OWN!

(In plain text!)

One way to do it

- 1-2 sentences for each of:
  - Topic, purpose, your research question
  - Methods and data analysis
  - Results and findings (present as facts!)
  - Conclusions

Best to do this in one paragraph

A&A structured abstract

- Context
- Aims
- Methods
- Results
- Conclusions

You are going to learn to write proper abstracts in the form of a paragraph (or two)!

Sentences and Paragraphs

- Every sentence has a beginning and an end.
  - Most important!
- Learn to join sentences by theme, repetition and transitional devices

Massive stars explode as supernovae. They are the biggest explosions in the Universe.
Massive stars explode as supernovae. Supernovae are the biggest explosions in the Universe.
Massive stars explode as supernovae which are the most violent explosions in the Universe.

Sentences and Paragraphs

- Vary sentence structure, mix up the phrasing, avoid repetitive form
  - (You will see examples soon; also later classes on English language and style)
- Each paragraph should make one point and then expand upon it.
- The abstract seems an exception (several points?)
- But its one point is to introduce the article
Abstracts Exercise

1) You have been given an abstract in “traditional form”:
   - Identify the components which make up the A&A abstract sections:
     - Context
     - Aims
     - Methods
     - Results
     - Conclusions
   - Note also the sentence transitions and phrasing.

2) You have been given an abstract in “A&A form”
   - Rewrite it in traditional form, i.e.,
     one or two paragraphs of continuous text.

Homework 1: Keywords

- Assign a few keywords to each of the abstracts from the exercises

http://www.aanda.org/index2.php?option=com_content&task=view&id=170&Itemid=256

- Why are keywords useful?

Homework 2:

- Each group: choose a subject you studied as an undergraduate e.g.,
  quantum mechanics, relativity, electrodynamics, brewing, distilling ...
- Read up on this a little to refresh your knowledge
  e.g. read the wikipedia page

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