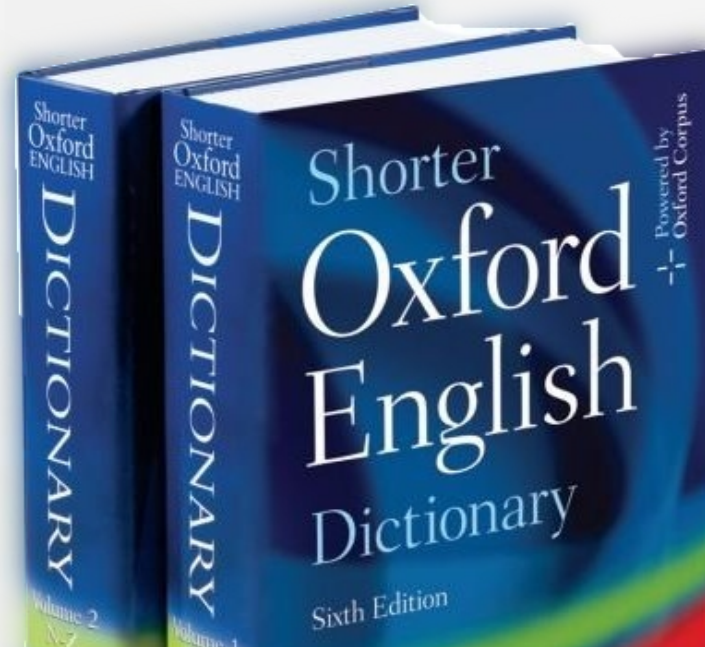
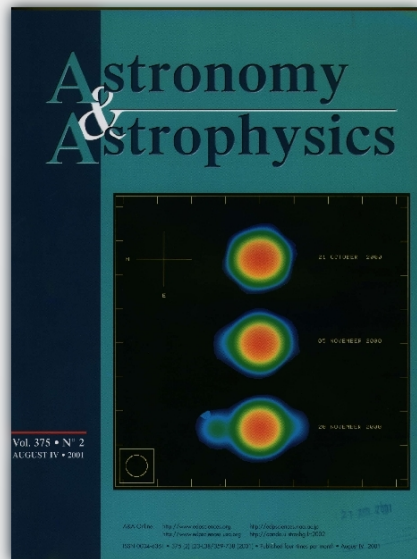


Scientific Writing 6951

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
- KOI-1299 b: a massive planet in a highly eccentric orbit transiting a red giant
- Observing Ultra-High Energy Cosmic Rays with Smartphones



Last time on *Scientific Writing* . . .

- Titles

Informative Accurate Clear Concise Attention!

- The bad:

- Spectroscopic confirmation of KOI-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



Last time on *Scientific Writing* . . .

- Titles

Informative Accurate Clear Concise Attention!

- And the ugly very bad:

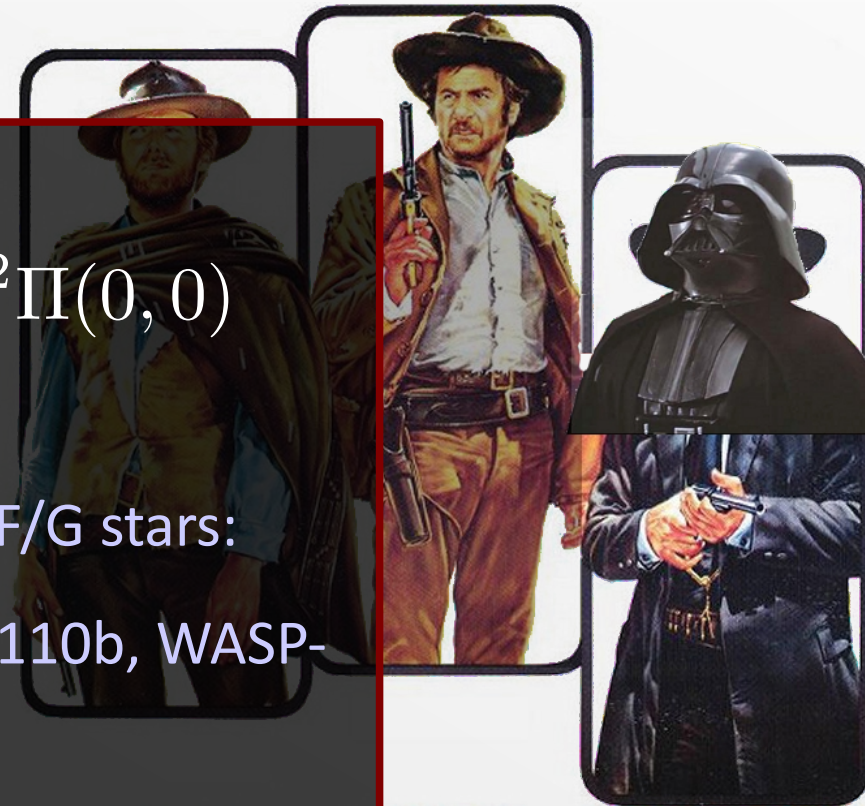
- Consistent system of oscillator strengths of

$$A^2\Delta - X^2\Pi(0,0) \quad \text{and} \quad B^2\Sigma^- - X^2\Pi(0,0)$$

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



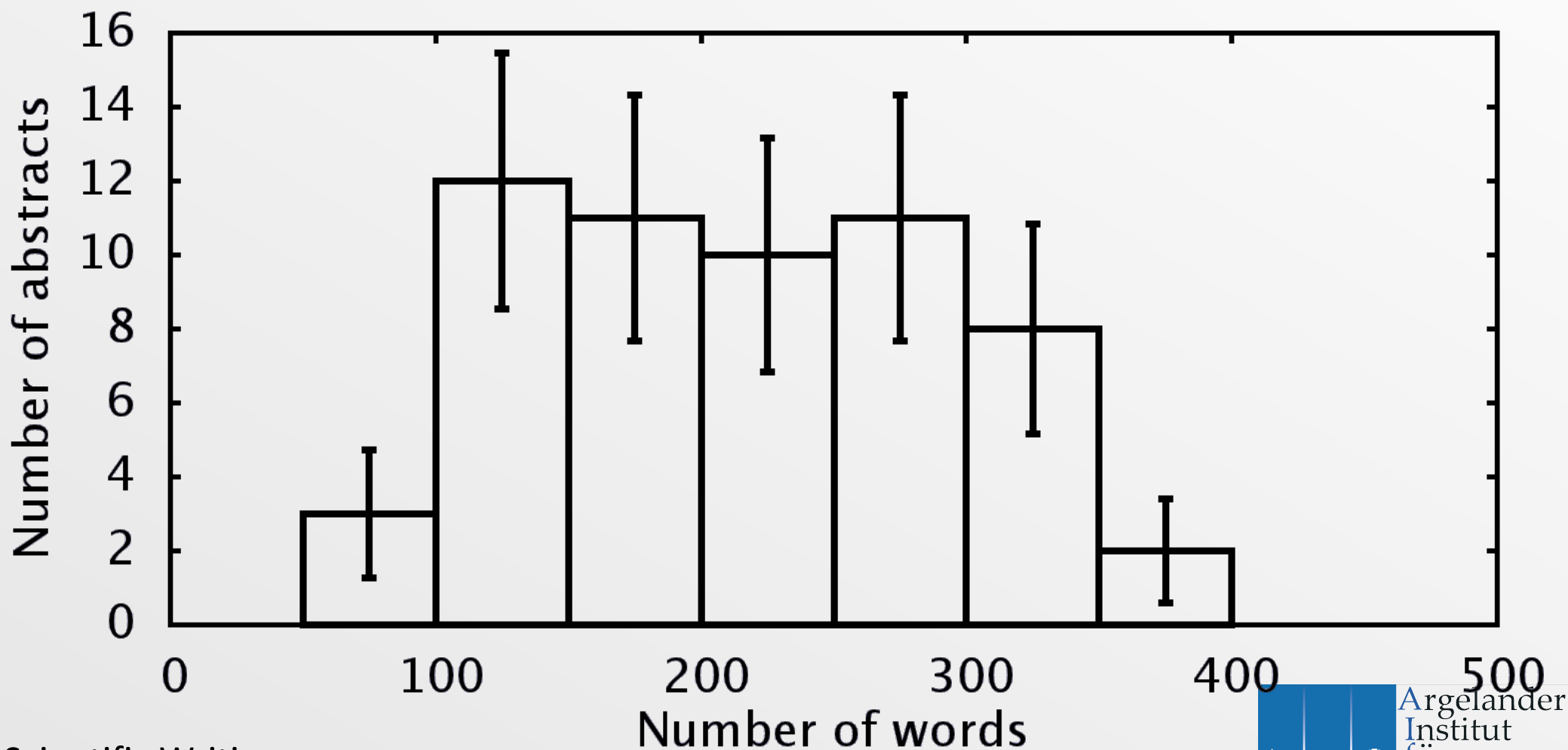
The Abstract

- 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!

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Abstract

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The Abstract

- Indexed on search engines

YAHOO!

Google

- 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 has an alternative “**structured abstract**”
- I cannot emphasise enough how much ***HATE THE A&A ABSTRACT!***



A&A structured abstract

- Context
- Aims
- Methods
- Results
- Conclusions

Look familiar?

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***

Sentences and Paragraphs

- Abstracts: *active* tense

Active: **Massive stars** explode as supernovae.


Passive: **Supernovae are** explosions of massive stars.

- Abstracts: *present* tense

We **carried** out an experiment to measure the colour of a star.

We **determine** the colour of a star.

- No **citations**
- No **very long sentences**
- No (or little) **jargon**
- No **useless words** or phrases!
- No **incomplete comparisons!**
- No negatives! No double negatives!



Much more on
these later in
the course

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.

Abstracts Exercise

3) You have been given an abstract which is suboptimal :

can you improve it by rewriting it ?

Does it still make sense to your **neighbours**?

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



search ID: grin170