Scientific Writing
And Science Publishing

A VERY PERSONAL AND BIASED VIEW

Arūnas Kučinskas

Vilnius University, Lithuania

SPECIAL THANKS AND CREDITS:

Partly based on the presentations by Thierry Forveille (A&A Editor-In-Chief), João Alves (A&A Letters Editor-In-Chief), H. Peter, the latter itself evolved from a presentation by M. Shussler

Science writing and publishing: an introduction

GOALS OF THIS LECTURE

- A bird's-eye overview of concepts in science writing and publishing
- Strategies on how to convey your research results to the astronomical community

Science writing and publishing: an introduction

MAIN QUESTIONS TO BE ADDRESSED

- What constitutes a well-written (and not-so-well-written) scientific paper?
- What are the ethical issues to pay attention to when writing a paper?
- Where do I publish my paper(s)?

Science writing and publishing: lecture contents

- Why do we write in astronomy?
- What is a well-written scientific paper?
- Ethical issues in science writing
- Astronomical publishing landscape: where to publish my paper?
- How does the journal work?
- A&A: a journal published by astronomers, for astronomers
- Conclusions and takeaways

Why bother talking about scientific writing?

Why bother talking about scientific writing?

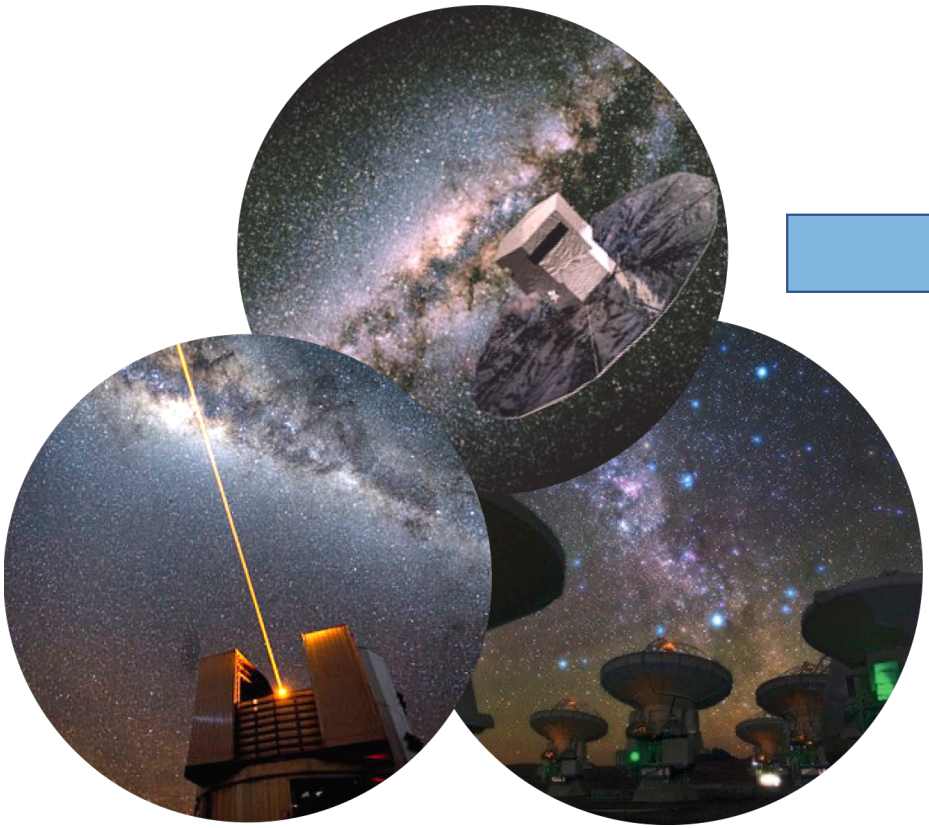
BECAUSE SCIENCE WRITING AND PUBLISHING IS ONE OF THE MOST UNDERRATED (AND EVEN IGNORED!) TOPICS IN ACADEMIA

DESPITE THAT…

THERE IS NO SCIENCE WITHOUT SCIENCE WRITING AND PUBLISHING!

Why bother talking about scientific writing?

NO SCIENCE WITHOUT SCIENCE PUBLISHING!



Why do we (have to) write in astronomy?

Why do we (have to) write in astronomy?

MANY REASONS...

- Communicate and preserve new knowledge
- Obtain the feedback from the peers/community
- Promote scientific reputation and career
- Impress your boyfriend/girlfriend/spouse 😁

BUT FIRST AND FOREMOST – SHARE AND PRESERVE SCIENTIFIC KNOWLEDGE

What is a well-written scientific paper?

What is a well-written scientific paper?

CONTENTS OF A TYPICAL SCIENTIFIC PAPER

- Title
- Abstract
- Introduction
- Methods
- Results, discussion
- Summary and conclusions
- References
- Appendices
- Figures and tables

What is a well-written scientific paper?

SOME GENERAL GUIDELINES

- Think well before you write:
  - What is your main message?
  - How do you want to convey it in the most efficient way? Letter, regular paper?
  - How would you like to structure the paper?
  - What would be the title?
  - What would you like to say in the abstract?
  - What are your main results?
  - What are the conclusions and takeaways?

What is a well-written scientific paper?

SOME GENERAL GUIDELINES

- Think well before you write
- Be critical with presenting your data and results. Write accordingly and do not overinterpret!
- Be brief, concise, and to the point
- Get feedback from your advisor, peers, and more senior colleagues
- Check the language, ask for advice if needed
- Revise, revise, revise…

What is a well-written scientific paper?

SOME GENERAL GUIDELINES

- Think well before you write
- Be critical with presenting your data and results. Write accordingly and do not overinterpret!
- Be brief, concise, and to the point
- Get feedback from your advisor, peers, and more senior colleagues
- Check the language, ask for advice if needed
- Revise, revise, revise – it's how good writing happens

THE GOLDEN RULE – BE HONEST, CONCISE, AND TO THE POINT!

What is a well-written scientific paper?

EXAMPLE: THE TITLE

- Make sure that your title clearly conveys your main message
- Be as concise as possible
- Think critically: there are good titles and not so good ones

What is a well-written scientific paper?

ABSTRACT

- Make sure the abstract gives a clear, condensed view of what your paper is:
  - States the context, goals, methods used, results obtained, and main takeaways
  - Should convince the reader to read the rest of your paper
- Be as informative as possible – but also, as concise as possible
- Think critically: there are good abstracts and bad abstracts, too

What is a well-written scientific paper?

MAIN BODY: INTRODUCTION

- Put your study into the context:
  - Provide a short summary of the previous work
  - Outline the motivation and goal(s) of your study

What is a well-written scientific paper?

MAIN BODY: METHODS

- Allow others to understand and assess the robustness of your results:
  - Provide description of the methods and tools used
  - Include the description of data selection and processing
  - Provide and discuss the errors

What is a well-written scientific paper?

MAIN BODY: RESULTS

- Show your results:
  - Show your results
  - Mention and discuss the uncertainties

What is a well-written scientific paper?

MAIN BODY: DISCUSSION

- Discussion:
  - Discuss the novelty and importance of your results
  - Do not avoid mentioning problematic points and open issues

What is a well-written scientific paper?

MAIN BODY: SUMMARY AND CONCLUSIONS

- Provide a short summary of your results:
  - A concise summary of what was done, what results were obtained, and what new was learned
  - Provide a brief explanation of the implications of your results
  - Clearly state the limitations of your methodology and the results obtained

What is a well-written scientific paper?

FIGURES, TABLES

- Think and re-think again about what figures and tables you want to provide – and how they can help to bring your message across
- Use only the most critical figures in the main body of the paper. The rest either belongs to appendices/supplementary materials or is superfluous
- Use the same style, check for readability

What is a well-written scientific paper?

WHAT IS A GOOD FIGURE?

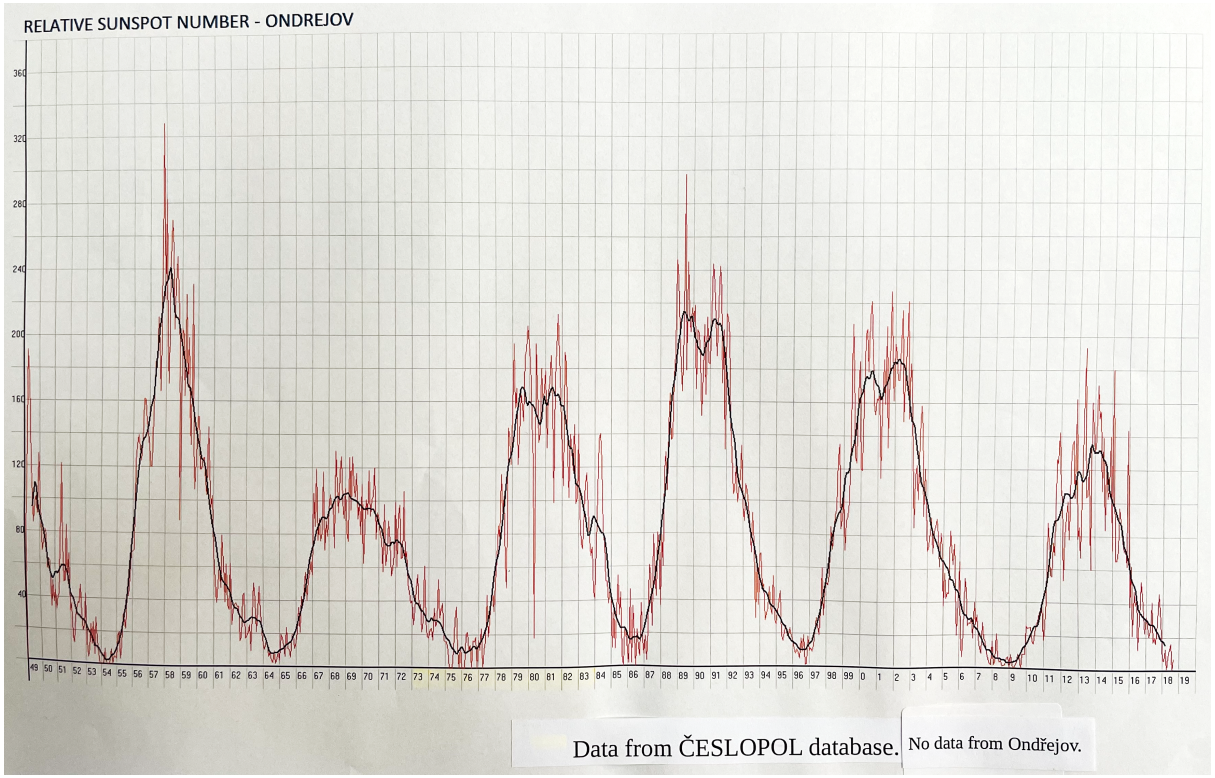
What is a well-written scientific paper?

WHAT IS A GOOD FIGURE?

- Complex idea presented visually with clarity, precision, and efficiency
- “Graphical excellence is that which gives to the viewer the greatest number of ideas in the shortest time with the least ink in the smallest space” (J. Alves)
- “Style and aesthetics can not rescue a failed content” (E. Tufte)

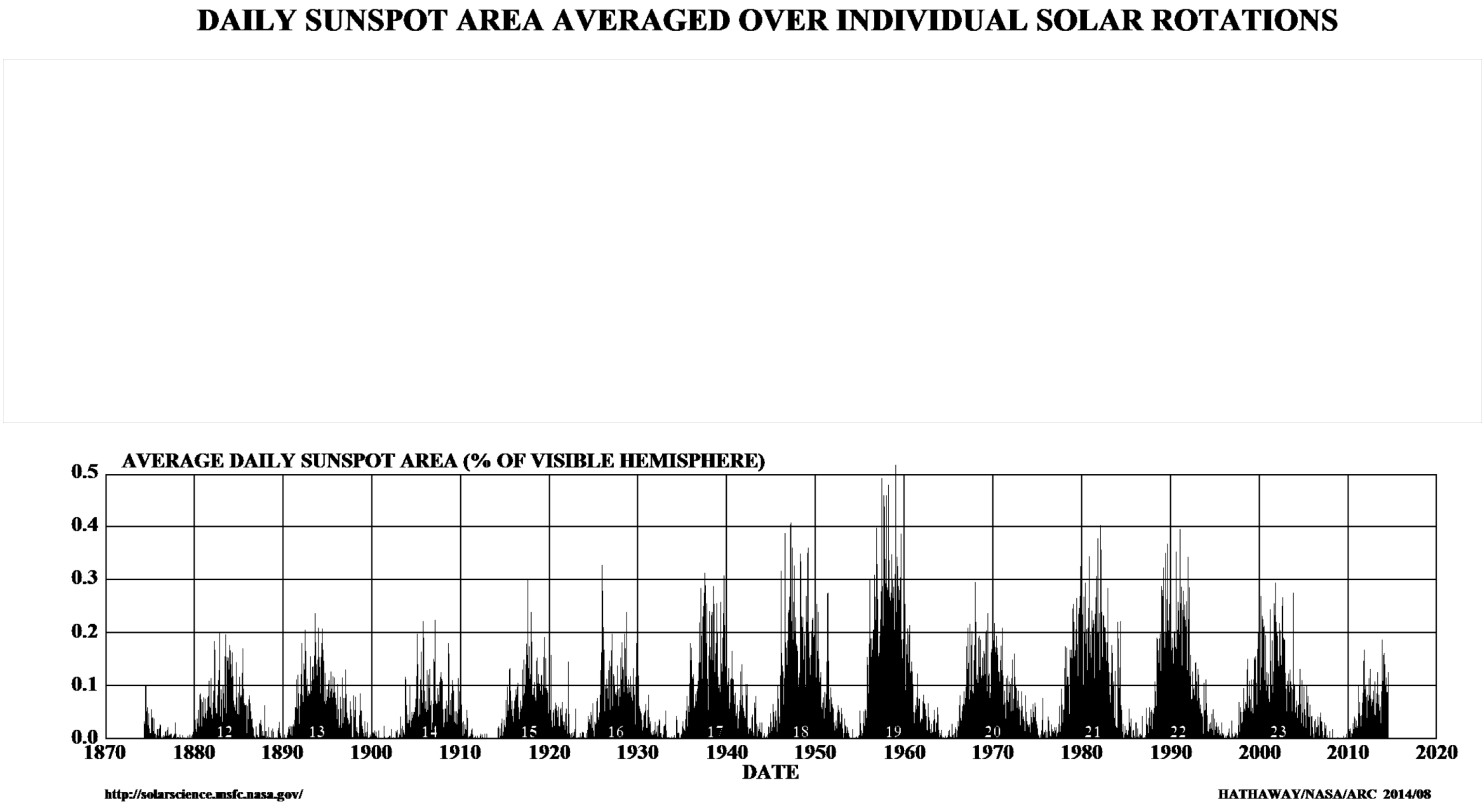
What is a well-written scientific paper?

FIGURES, A FEW EXAMPLES: GRADE A



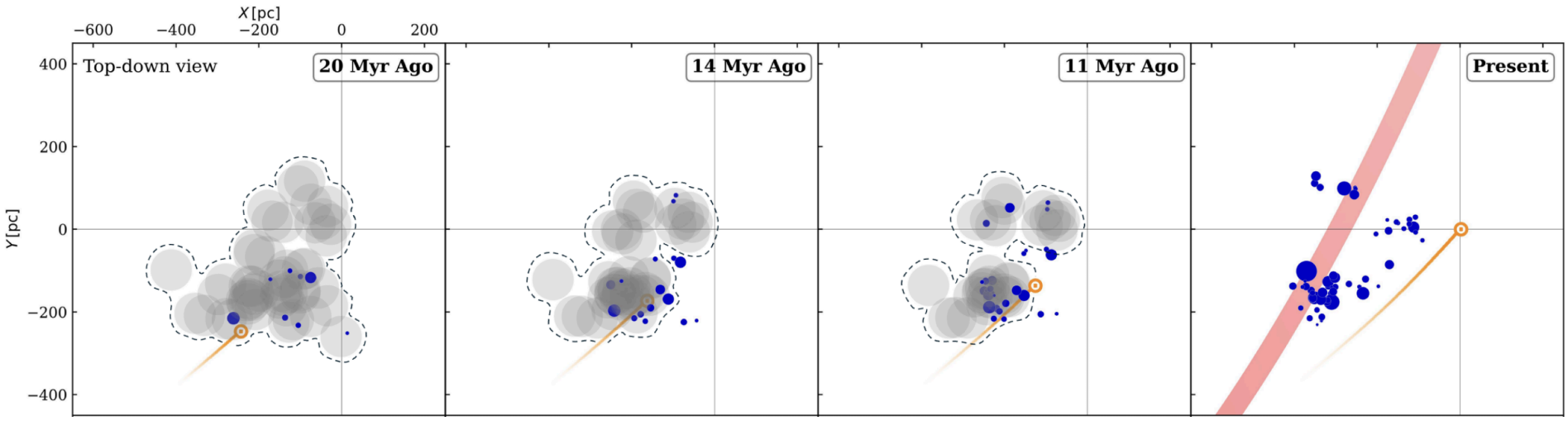
What is a well-written scientific paper?

FIGURES, A FEW EXAMPLES: GRADE A+



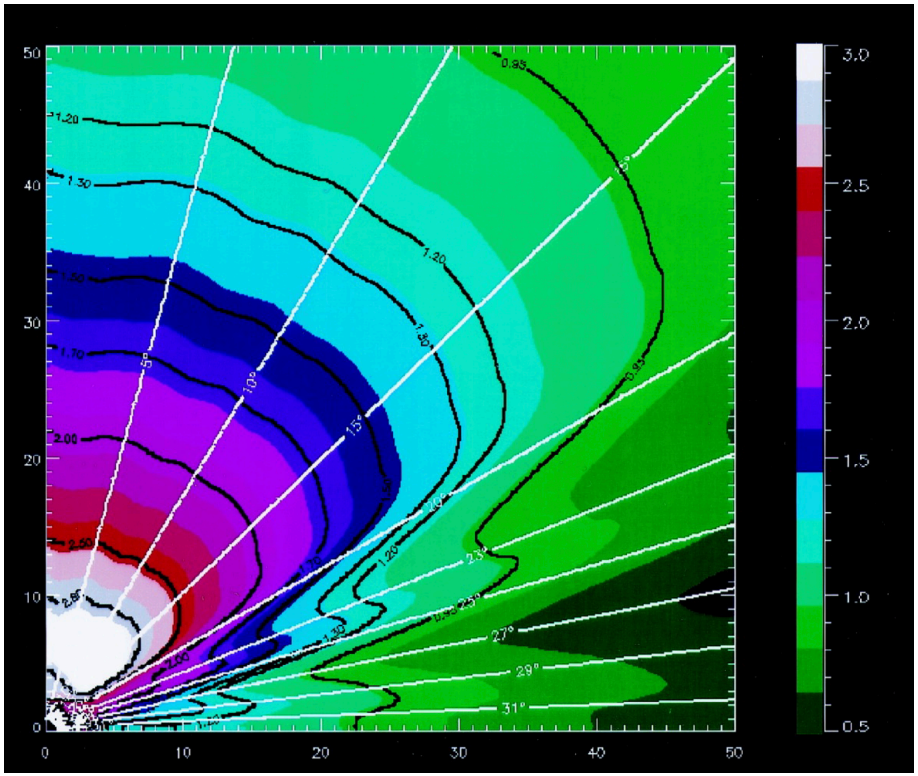
What is a well-written scientific paper?

FIGURES, A FEW EXAMPLES: GRADE 🙈



What is a well-written scientific paper?

FIGURES, A FEW EXAMPLES: GRADE 🙈



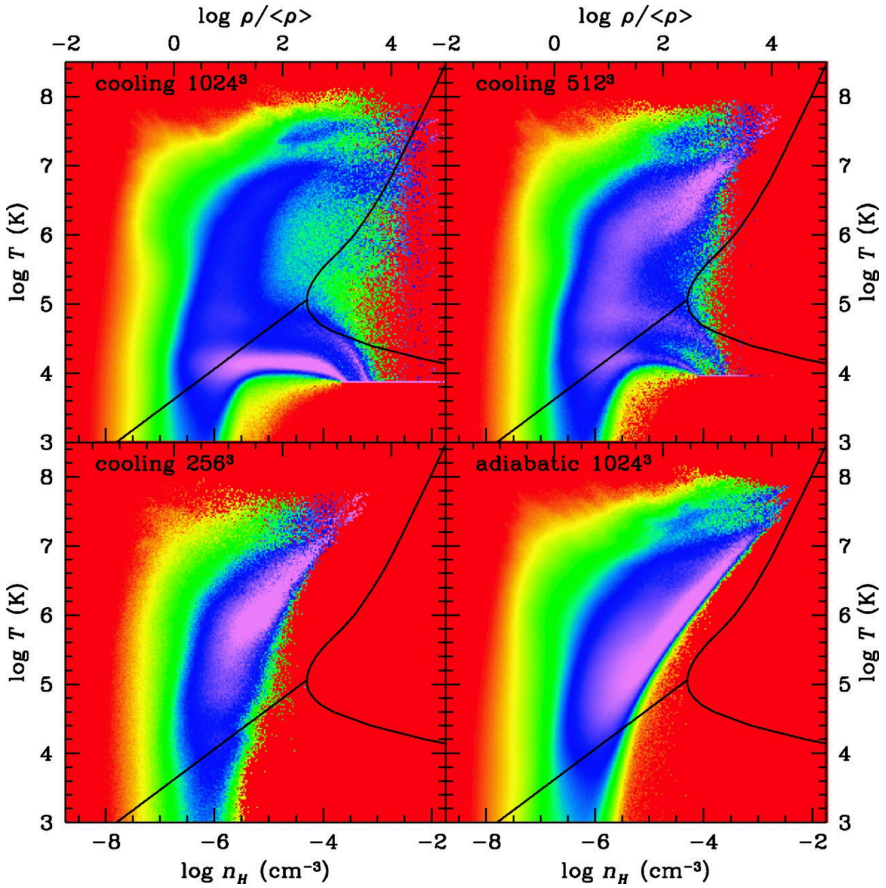
MHD model (Sun)

Does it really need color and contours?

If jpeg, make it high-res
PDF (vectorial) preferred

What is a well-written scientific paper?

FIGURES, A FEW EXAMPLES: GRADE 🙈

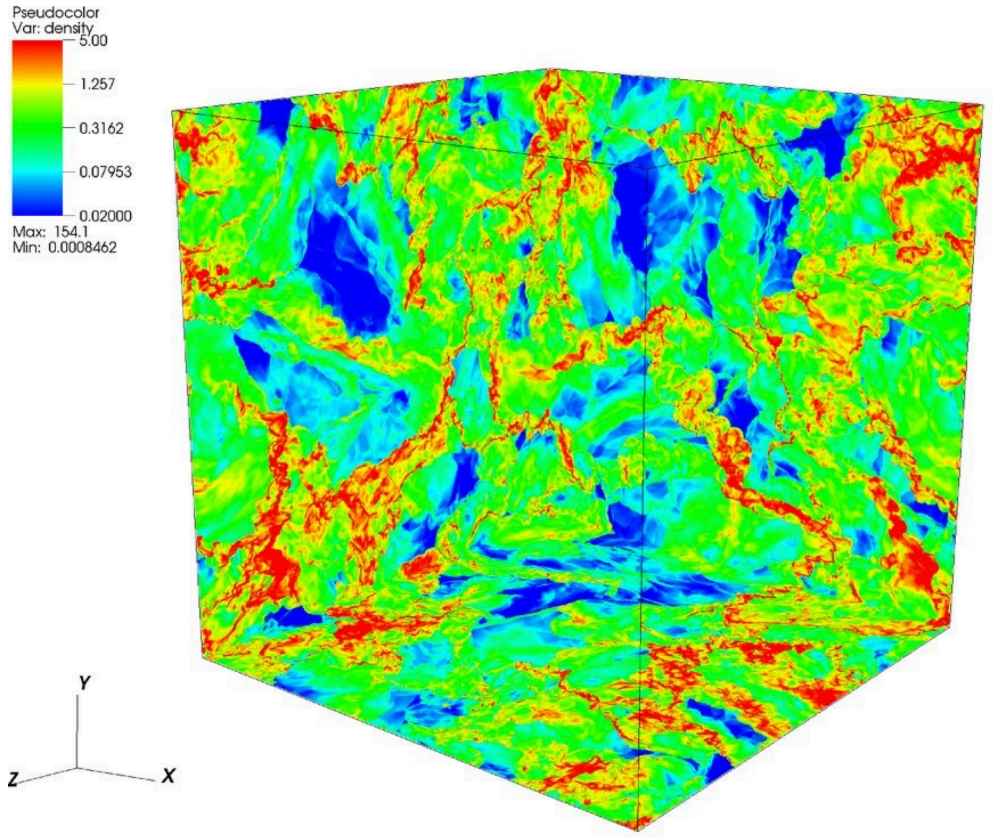


Shocks (LSS Universe)

"…and the color scale was set arbitrarily to highlight the distribution"

What is a well-written scientific paper?

FIGURES, A FEW EXAMPLES: GRADE 🙈



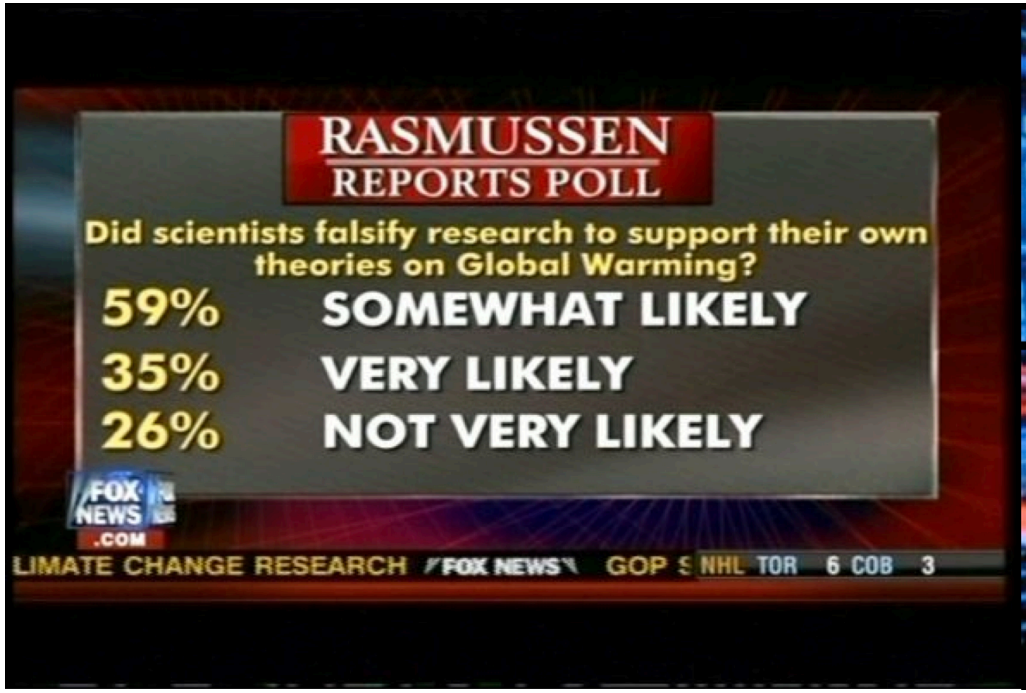
3D figure in 1D!

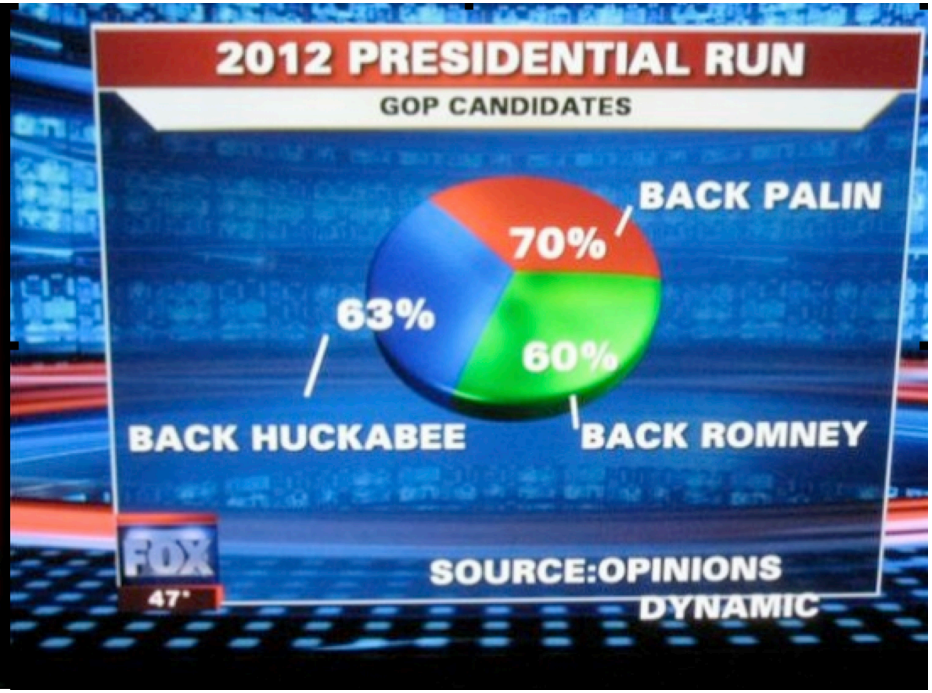
What is a well-written scientific paper?

TRUST ME, ONE CAN LIE WITH DATA!

What is a well-written scientific paper?

TRUST ME, ONE CAN LIE WITH DATA!





What is a well-written scientific paper?

WHAT IS A GOOD FIGURE?

First and foremost, show the data!

Ethical issues in science writing

Ethical issues in science writing

GOOD SCIENTIFIC PRACTICE

1. HONESTY

- Report research truthfully without fabrication, falsification, or omission of relevant data
- Clearly acknowledge limitations and uncertainties
- Avoid overstating the significance of results
- Build knowledge, not ego

Ethical issues in science writing

GOOD SCIENTIFIC PRACTICE

2. TRANSPARENCY

- Describe methods, instruments, and analytical procedures clearly
- Make raw data, software, and processing steps available when possible
- State assumptions and choices that influence results

Ethical issues in science writing

GOOD SCIENTIFIC PRACTICE

3. ACCURACY

- Use validated methods and analyses. Cite them
- Double-check data entries, calculations, and interpretations
- Present findings clearly and precisely, avoiding misleading visuals

Ethical issues in science writing

GOOD SCIENTIFIC PRACTICE

4. OBJECTIVITY

- Design studies and interpret results impartially, minimizing personal bias
- Report both positive and negative or inconclusive outcomes
- Do not tailor analysis to achieve desired results

Ethical issues in science writing

GOOD SCIENTIFIC PRACTICE

5. PROPER ATTRIBUTION

- Cite all relevant prior work and acknowledge intellectual contributions
- Distinguish clearly between your work and that of others
- Recognize collaborators and supporting personnel appropriately

Ethical issues in science writing

GOOD SCIENTIFIC PRACTICE

6. PUBLISH, REASONABLY

- Publish when you/your peers agree you have a result
- Do not “salami slice” your result
- In the near future, when writing papers “becomes easier”, do not “drink” and publish

Ethical issues in science writing

WHAT IS SCIENTIFIC MISCONDUCT? (1)

- Fabrication of data
- Falsification of data:
  - selective reporting
  - rejection of unwanted results
  - manipulation of figures or presentation of results
- Plagiarism (or more general: infringement of intellectual property):
  - usurpation of authorship → **copy & paste** (including **self-plagiarism**)
  - theft of ideas
  - unauthorized publishing → publish unpublished work of others under your name

Ethical issues in science writing

WHAT IS SCIENTIFIC MISCONDUCT? (2)

- Incorrect statements in applications, proposals, etc.:
  - e.g., adding non-existent papers
- Adding co-authors without their knowledge
- Sabotage of research work

Ethical issues in science writing

SCIENTIFIC MISCONDUCT

- **This is a problem for academia**
  - undermines confidence in research integrity
  - tradition of science (which is based on **trust**)
  - wastes time and resources
  - weakens education of young scientists
- **and also for the trust of society in scientific work**

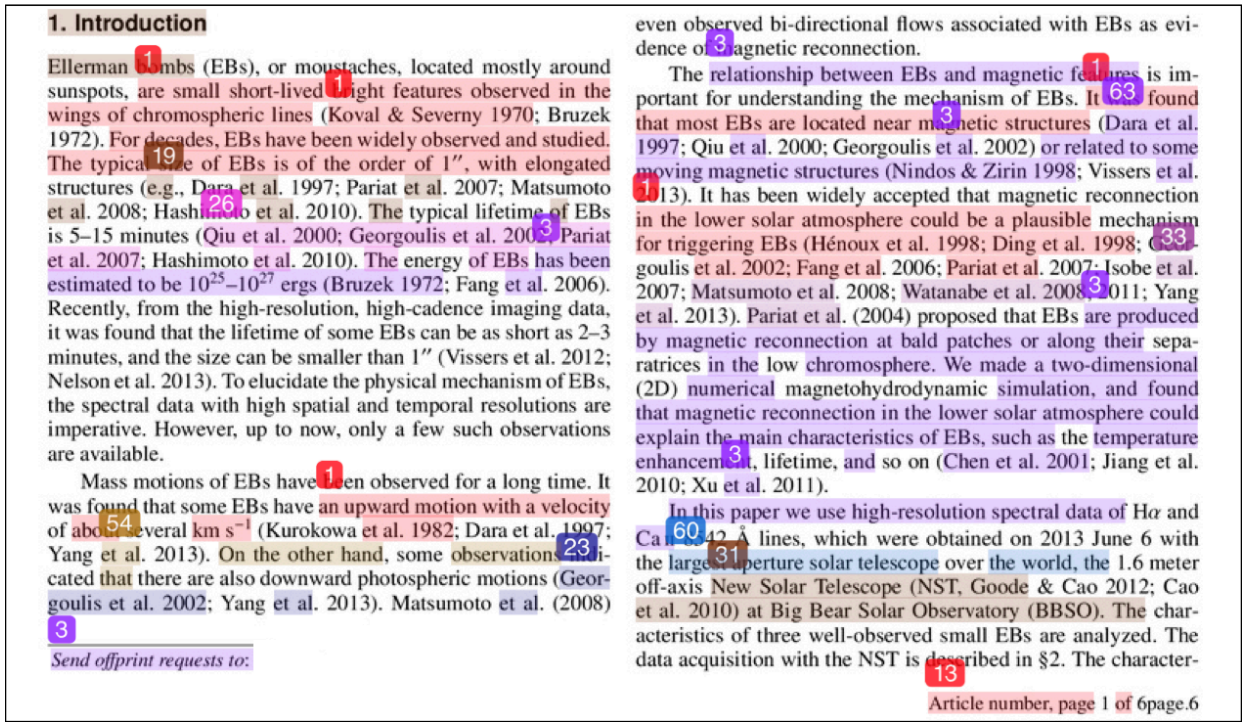
Ethical issues in science writing

COPY AND PASTE IN JOURNAL ARTICLES: A&A

Example from a rejected article

- Automated procedures reveal (self-)plagiarism
- Such procedures are used to check your articles and thesis

DO NOT COPY-PASTE YOUR OWN WORK!!



1. Introduction

Ellerman bombs (EBs), or moustaches, located mostly around sunspots, are small short-lived bright features observed in the wings of chromospheric lines (Koval & Severny 1970; Bruzek 1972). For decades, EBs have been widely observed and studied. The typical size of EBs is of the order of 1″, with elongated structures (e.g., Dara et al. 1997; Pariat et al. 2007; Matsumoto et al. 2008; Hashimoto et al. 2010). The typical lifetime of EBs is 5–15 minutes (Qiu et al. 2000; Georgoulis et al. 2002; Pariat et al. 2007; Hashimoto et al. 2010). The energy of EBs has been estimated to be 10^{25}–10^{27} ergs (Bruzek 1972; Fang et al. 2006). Recently, from the high-resolution, high-cadence imaging data, it was found that the lifetime of some EBs can be as short as 2–3 minutes, and the size can be smaller than 1″ (Vissers et al. 2012; Nelson et al. 2013). To elucidate the physical mechanism of EBs, the spectral data with high spatial and temporal resolutions are imperative. However, up to now, only a few such observations are available.

Mass motions of EBs have been observed for a long time. It was found that some EBs have an upward motion with a velocity of about several km s^{-1} (Kurokowa et al. 1982; Dara et al. 1997; Yang et al. 2013). On the other hand, some observations indicated that there are also downward photospheric motions (Georgoulis et al. 2002; Yang et al. 2013). Matsumoto et al. (2008) even observed bi-directional flows associated with EBs as evidence of magnetic reconnection.

The relationship between EBs and magnetic features is important for understanding the mechanism of EBs. It is found that most EBs are located near magnetic structures (Dara et al. 1997; Qiu et al. 2000; Georgoulis et al. 2002) or related to some moving magnetic structures (Nindos & Zirin 1998; Vissers et al. 2013). It has been widely accepted that magnetic reconnection in the lower solar atmosphere could be a plausible mechanism for triggering EBs (Hénoux et al. 1998; Ding et al. 1998; Georgoulis et al. 2002; Fang et al. 2006; Pariat et al. 2007; Isobe et al. 2007; Matsumoto et al. 2008; Watanabe et al. 2008, 2011; Yang et al. 2013). Pariat et al. (2004) proposed that EBs are produced by magnetic reconnection at bald patches or along their separatrices in the low chromosphere. We made a two-dimensional (2D) numerical magnetohydrodynamic simulation, and found that magnetic reconnection in the lower solar atmosphere could explain the main characteristics of EBs, such as the temperature enhancement, lifetime, and so on (Chen et al. 2001; Jiang et al. 2010; Xu et al. 2011).

In this paper we use high-resolution spectral data of Hα and Ca II 8542 Å lines, which were obtained on 2013 June 6 with the largest aperture solar telescope over the world, the 1.6 meter off-axis New Solar Telescope (NST, Goode & Cao 2012; Cao et al. 2010) at Big Bear Solar Observatory (BBSO). The characteristics of three well-observed small EBs are analyzed. The data acquisition with the NST is described in §2. The character-

Send offprint requests to:

Ethical issues in science writing

WHEN TO GIVE CREDIT?

IDEAS AND SENTENCES REQUIRING CREDIT

- Direct quotations (but do not make them too long!):
  - always credit the source when you directly quote another person
- Assertions that are arguable or facts that are not widely known
- Judgments, opinions, and claims from others
- Statistics, charts, tables, and graphs from any source
- Information or help provided by friends, instructors, or others:
  - Anyone who assists in the development of your ideas or research deserves credit. Do not forget to acknowledge their contribution

Ethical issues in science writing

WHEN TO GIVE CREDIT?

IDEAS AND SENTENCES NOT REQUIRING CREDIT

- Common knowledge:
  - if other people like you know the material you are including, you do not need to include a citation
- Facts available in a wide variety of sources:
  - information that is commonly available in encyclopaedias, almanacs, and textbooks does not need a citation

From: *"Introduction to good scientific practice", M. Oppermann et al.,17.9.2013, University of Göttingen*

Ethical issues in science writing

AUTHORSHIP

- Gives credit for the contribution to a publication:
  - some journals ask to specify contributions from each author depending on your field, the order of authors is important
- Authorship comes with responsibility. All co-authors:
  - are responsible for the paper (within reason)
  - have to assure that proper procedures have been followed
  - need to check/confirm that proper credit is given (includes unpublished work: talks, posters, discussion at meetings, which provided important input)

Ethical issues in science writing

AUTHORSHIP

- **One possible (but not unique) definition for authorship:**
  - **each author should be able to defend the contents of a paper in a discussion with colleagues, e.g. , at a conference**
- **Everyone should be co-author who (all three items necessary!):**
  - **contributed substantially** (concept and planning of study; acquisition, analysis, and interpretation of data, etc.)
  - **drafted or critically revised** the publication substantially, and
  - **read the paper** and approves submission to be published

  => beware: what "substantial" means depends on group/field/cultural background and is difficult to define
- **Other contributors should be mentioned in the acknowledgements**

Ethical issues in science writing

AUTHORSHIP

- What does not qualify for authorship:
  - providing funds (e.g., through soft money grants)
  - general direction of research group or institution (group head)
  - collection or provision of data
- No honorary authorship:
  - readers can be misled about quality (if a person with high reputation is added)
  - gives an unfair advantage to people working for a “big name”
  - honorary authors receive undeserved credit (“Mathew effect”)
- What about instrument PIs (or Co-Is)?
  - they should not be automatically co-authors
  - however: often the PI team does much more than just providing the data

Ethical issues in science writing

ORDER OF AUTHORS MATTERS A LOT, LIKE IT OR NOT

EXAMPLE

- *Tian H., Kleint L., Peter H., Weber M., Testa P., DeLuca E., Golub L., Schanche N.: Astrophysical Journal Letters, Volume 790, article id. L29, 7pp. (2014)*
- Usually in astrophysics journals:
  - in the text: Tian et al (2014)
  - in references: Tian H., Kleint L., Peter H. et al. 2014, ApJL 790, L29: only the first three authors are listed in the reference list → bad luck for others (but all authors found e.g. in ADS).

Ethical issues in science writing

ORDER OF AUTHORS MATTERS A LOT, LIKE IT OR NOT

NO UNIQUE PRACTICE

- Sequence should not hide a true first author
  - Some journals also name the corresponding author
- Possibilities:
  - alphabetic, unless contributions are unequal, groups may permutate order, info about contributions in footnotes
- The Matthew effect:
  - work becomes associated with the best-known author
- Inform yourself, discuss authorship rules in your group!
- Don´t accept hierarchy, exertion of power... (easier said than done)

Ethical issues in science writing

AI IN SCIENCE WRITING

Ethical issues in science writing

AI IN SCIENCE WRITING

IMPROVING THE READABILITY

- Language corrections
- Making papers shorter and concise

Credit for examples: J. Alves

Ethical issues in science writing

AI IN SCIENCE WRITING

Credit: J. Alves

Survey of Profile Parameters of the 6196 Å Diffuse Interstellar Band

From Uniform Profiles to Doppler Splitting and Blueshifts

M. Piecka[1], S. Hutschenreuter[1], and J. Alves[1,2]

[1] University of Vienna, Department of Astrophysics, Türkenschanzstrasse 17, 1180 Vienna, Austria
e-mail: martin.piecka@univie.ac.at
[2] University of Vienna, Research Network Data Science at Uni Vienna, Kolingasse 14-16, 1090 Vienna, Austria

Received X XX, XXXX; accepted X XX, XXXX

ABSTRACT

The diffuse interstellar band (DIB) at 6196 Å exhibits notable profile variations across the Milky Way. This study addresses three open issues: the unusual broadening of the DIB profile towards Upper Sco, the lack of profile variations towards stars near η Car, and the origin of the blueshift observed in Sco OB1. Using archival spectra of 453 early-type stars across the Galactic disk and in its proximity, we created a catalogue of the DIB's profile parameters. Our analysis identifies Doppler-split components within the DIB profiles across most regions but finds no evidence for these splits being able to account for the observed broadening ($\sim$ 23 km s^{-1}) in Upper Sco or other regions like Orion, Vela OB2, and Melotte 20 (α Per cluster). We propose that neither the ages of the studied stellar populations nor the distances between clusters and nearby clouds contribute significantly to the broadening. However, we detect a gradient in the FWHM within the Sco-Cen and Orion regions, where broadening decreases with distance from the star-forming centres. This result points to a possible connection between the DIB broadening and star formation (likely via the impact of recent supernovae). Regarding Carina Nebula, we confirm the lack of DIB profile variations in a small region near η Car, although an adjacent southern area exhibits significant variations, comparable to those in Upper Sco. In addition to Carina Nebula, we find that Rosette Nebula and NGC 6405 also show consistently narrow profiles ($<$ 20 km s^{-1}) with minimal deviations from the median over spatial scales of a few parsecs. Finally, regarding the origin of the blueshift observed in Sco OB1, we use a comparison with the Lagoon Nebula and argue that the most natural explanation is the presence of an unresolved kinematic component in the profile of the DIB, shifting the measured centre of the band.

Key words. ISM: kinematics and dynamics – ISM: lines and bands – ISM: structure

Ethical issues in science writing

AI IN SCIENCE WRITING

Credit: J. Alves

Survey of Profile Parameters of the 6196 Å Diffuse Interstellar Band

From Uniform Profiles to Doppler Splitting and Blueshifts

M. Piecka[1], S. Hutschenreuter[1], and J. Alves[1,2]

[1] University of Vienna, Department of Astrophysics, Türkenschanzstrasse 17, 1180 Vienna, Austria
e-mail: martin.piecka@univie.ac.at
[2] University of Vienna, Research Network Data Science at Uni Vienna, Kolingasse 14-16, 1090 Vienna, Austria

Received X XX, XXXX; accepted X XX, XXXX

ABSTRACT

The diffuse interstellar band (DIB) at 6196 Å exhibits significant profile variations across the Milky Way, motivating the study of three issues: (1) unusual broadening toward Upper Sco, (2) lack of variations near η Car, and (3) the origin of the blueshift in Sco OB1. Using archival spectra of 453 early-type stars across the Galactic disk, we compiled a catalogue of the DIB's profile parameters. We detect Doppler-split components in most regions, but these cannot account for the observed broadening ($\sim$ 23 km s^{-1}) in Upper Sco, Orion, Vela OB2, and Melotte 20 (α Per). Neither stellar ages nor cluster-cloud distances significantly affect the broadening. However, a gradient in FWHM within Sco-Cen and Orion shows broadening decreasing with distance from star-forming centers, hinting at a link with supernova events. In Carina Nebula, minimal DIB variations occur near η Car, but adjacent southern areas exhibit large deviations similar to Upper Sco. Rosette Nebula and NGC 6405 also show narrow profiles (< 20 km s^{-1}) with minimal spatial variation. Finally, comparing Sco OB1 to Lagoon Nebula suggests the blueshift arises from an unresolved kinematic component shifting the band center.

Key words. ISM: kinematics and dynamics – ISM: lines and bands – ISM: structure

Ethical issues in science writing

Credit: J. Alves

Survey of Profile Parameters of the 6196 Å Diffuse Interstellar Band

From Uniform Profiles to Doppler Splitting and Blueshifts

M. Piecka[1], S. Hutschenreuter[1], and J. Alves[1,2]

[1] University of Vienna, Department of Astrophysics, Türkenschanzstrasse 17, 1180 Vienna, Austria
e-mail: martin.piecka@univie.ac.at
[2] University of Vienna, Research Network Data Science at Uni Vienna, Kolingasse 14-16, 1090 Vienna, Austria

Received X XX, XXXX; accepted X XX, XXXX

ABSTRACT

The diffuse interstellar band (DIB) at 6196 Å exhibits notable profile variations across the Milky Way. This study addresses three open issues: the unusual broadening of the DIB profile towards Upper Sco, the lack of profile variations towards stars near η Car, and the origin of the blueshift observed in Sco OB1. Using archival spectra of 453 early-type stars across the Galactic disk and in its proximity, we created a catalogue of the DIB's profile parameters. Our analysis identifies Doppler-split components within the DIB profiles across most regions but finds no evidence for these splits being able to account for the observed broadening (~ 23 km s^{-1}) in Upper Sco or other regions like Orion, Vela OB2, and Melotte 20 (α Per cluster). We propose that neither the ages of the studied stellar populations nor the distances between clusters and nearby clouds contribute significantly to the broadening. However, we detect a gradient in the FWHM within the Sco-Cen and Orion regions, where broadening decreases with distance from the star-forming centres. This result points to a possible connection between the DIB broadening and star formation (likely via the impact of recent supernovae). Regarding Carina Nebula, we confirm the lack of DIB profile variations in a small region near η Car, although an adjacent southern area exhibits significant variations, comparable to those in Upper Sco. In addition to Carina Nebula, we find that Rosette Nebula and NGC 6405 also show consistently narrow profiles (< 20 km s^{-1}) with minimal deviations from the median over spatial scales of a few parsecs. Finally, regarding the origin of the blueshift observed in Sco OB1, we use a comparison with the Lagoon Nebula and argue that the most natural explanation is the presence of an unresolved kinematic component in the profile of the DIB, shifting the measured centre of the band.

Key words. ISM: kinematics and dynamics – ISM: lines and bands – ISM: structure

1. Introduction

Diffuse interstellar bands (DIBs) are spectral absorption features that can be easily identified in the lines of sight towards OB stars (Herbig 1995). They were originally discovered by Heger (1922), although further research started a decade later when the carriers were identified as interstellar medium (ISM) components (Merrill 1934; Merrill & Wilson 1938). The equivalent widths (EWs) of DIBs were found to be correlated with the interstellar reddening, suggesting a connection to the interstellar dust. It is predominantly believed that the carriers of DIBs are organic or carbonaceous molecules (Leger & D'Hendecourt 1985; Herbig 1993; Salama et al. 1999). Up to this date, hundreds of DIBs have been catalogued in the optical and the near-IR parts of the spectrum (Hobbs et al. 2008, 2009; Cox et al. 2014; Galazutdinov et al. 2017; Fan et al. 2019; Smoker et al. 2023), with only a handful of them being unambiguously assigned to a specific molecule (Foing & Ehrenfreund 1997; Campbell et al. 2015; Cordiner et al. 2019; Nie et al. 2022).

Our understanding of the carriers of the DIBs and the interstellar properties the DIBs trace remains minimal. Some of the most important puzzle pieces added since the late 1990s include the ongoing discussion regarding the profile of the 6614 Å DIB (Welty et al. 1996; Galazutdinov et al. 2002; Cami et al. 2004; Bernstein et al. 2015; Marshall et al. 2015; MacIsaac et al. 2022; Ebenbichler et al. 2024), the discovery of a strong correlation between the 6196 Å and the 6614 Å DIBs (Moutou et al. 1999; McCall et al. 2010; Friedman et al. 2011; Bailey et al. 2016; Krełowski et al. 2016; Bondar 2020), the identification of a specific DIB carrier (C_{60}^+, Campbell et al. 2015), the studies of DIB profile variability (Galazutdinov et al. 1999; Law et al. 2017; Farhang et al. 2023), and the production of 3D maps of DIB EWs (Kos et al. 2014; Zasowski et al. 2015; Farhang et al. 2019; Cox et al. 2024). The review by Krełowski (2018) includes additional information about the observational properties of DIBs. The complexity of the carriers of DIBs raises several questions that are important for our understanding of the ISM – how do the carriers form, what is their role in the ISM, and what properties of the ISM do they trace?

Several unexplained and unexplored observational facts have been reported over the last two decades. For example, some lines of sight appear to show differences in the structure of the 6196 Å DIB. Krełowski et al. (2021) found significant variations in the profile structure of several strong DIBs, including a shift in the central wavelength. These difference are mostly visible in the red wings of the DIBs. Galazutdinov & Krełowski (2023) compared six stars from the Upper Scorpius (USco) region in the Sco-Cen OB association with three different regions: a set of four stars in the direction of the Perseus complex of clouds, a set of three stars located within the Galactic disk below Sco-Cen, and a single target in the Galactic 1st quadrant. USco seems to displays a double-peaked profile of the 6196 Å DIB and a significant broadening compared with the other regions (especially

Ethical issues in science writing

Credit: J. Alves

Survey of Profile Parameters of the 6196 Å Diffuse Interstellar Band

From Uniform Profiles to Doppler Splitting and Blueshifts

M. Piecka[1], S. Hutschenreuter[1], and J. Alves[1,2]

[1] University of Vienna, Department of Astrophysics, Türkenschanzstrasse 17, 1180 Vienna, Austria
e-mail: martin.piecka@univie.ac.at
[2] University of Vienna, Research Network Data Science at Uni Vienna, Kolingasse 14-16, 1090 Vienna, Austria

Received X XX, XXXX; accepted X XX, XXXX

ABSTRACT

The diffuse interstellar band (DIB) at 6196 Å exhibits notable profile variations across the Milky Way. This study addresses three open issues: the unusual broadening of the DIB profile towards Upper Sco, the lack of profile variations towards stars near η Car, and the origin of the blueshift observed in Sco OB1. Using archival spectra of 453 early-type stars across the Galactic disk and in its proximity, we created a catalogue of the DIB's profile parameters. Our analysis identifies Doppler-split components within the DIB profiles across most regions but finds no evidence for these splits being able to account for the observed broadening (~ 23 km s^{-1}) in Upper Sco or other regions like Orion, Vela OB2, and Melotte 20 (α Per cluster). We propose that neither the ages of the studied stellar populations nor the distances between clusters and nearby clouds contribute significantly to the broadening. However, we detect a gradient in the FWHM within the Sco-Cen and Orion regions, where broadening decreases with distance from the star-forming centres. This result points to a possible connection between the DIB broadening and star formation (likely via the impact of recent supernovae). Regarding Carina Nebula, we confirm the lack of DIB profile variations in a small region near η Car, although an adjacent southern area exhibits significant variations, comparable to those in Upper Sco. In addition to Carina Nebula, we find that Rosette Nebula and NGC 6405 also show consistently narrow profiles (< 20 km s^{-1}) with minimal deviations from the median over spatial scales of a few parsecs. Finally, regarding the origin of the blueshift observed in Sco OB1, we use a comparison with the Lagoon Nebula and argue that the most natural explanation is the presence of an unresolved kinematic component in the profile of the DIB, shifting the measured centre of the band.

Key words. ISM: kinematics and dynamics – ISM: lines and bands – ISM: structure

1. Introduction

Diffuse interstellar bands (DIBs) are spectral absorption features that can be easily identified in the lines of sight towards OB stars (Herbig 1995). They were originally discovered by Heger (1922), although further research started a decade later when the carriers were identified as interstellar medium (ISM) components (Merrill 1934; Merrill & Wilson 1938). The equivalent widths (EWs) of DIBs were found to be correlated with the interstellar reddening, suggesting a connection to the interstellar dust. It is predominantly believed that the carriers of DIBs are organic or carbonaceous molecules (Leger & D'Hendecourt 1985; Herbig 1993; Salama et al. 1999). Up to this date, hundreds of DIBs have been catalogued in the optical and the near-IR parts of the spectrum (Hobbs et al. 2008, 2009; Cox et al. 2014; Galazutdinov et al. 2017; Fan et al. 2019; Smoker et al. 2023), with only a handful of them being unambiguously assigned to a specific molecule (Foing & Ehrenfreund 1997; Campbell et al. 2015; Cordiner et al. 2019; Nie et al. 2022).

Our understanding of the carriers of the DIBs and the interstellar properties the DIBs trace remains minimal. Some of the most important puzzle pieces added since the late 1990s include the ongoing discussion regarding the profile of the 6614 Å DIB (Welty et al. 1996; Galazutdinov et al. 2002; Cami et al. 2004; Bernstein et al. 2015; Marshall et al. 2015; MacIsaac et al. 2022; Ebenbichler et al. 2024), the discovery of a strong correlation between the 6196 Å and the 6614 Å DIBs (Moutou et al. 1999; McCall et al. 2010; Friedman et al. 2011; Bailey et al. 2016; Krełowski et al. 2016; Bondar 2020), the identification of a specific DIB carrier (C_{60}^+, Campbell et al. 2015), the studies of DIB profile variability (Galazutdinov et al. 1999; Law et al. 2017; Farhang et al. 2023), and the production of 3D maps of DIB EWs (Kos et al. 2014; Zasowski et al. 2015; Farhang et al. 2019; Cox et al. 2024). The review by Krełowski (2018) includes additional information about the observational properties of DIBs. The complexity of the carriers of DIBs raises several questions that are important for our understanding of the ISM – how do the carriers form, what is their role in the ISM, and what properties of the ISM do they trace?

Several unexplained and unexplored observational facts have been reported over the last two decades. For example, some lines of sight appear to show differences in the structure of the 6196 Å DIB. Krełowski et al. (2021) found significant variations in the profile structure of several strong DIBs, including a shift in the central wavelength. These difference are mostly visible in the red wings of the DIBs. Galazutdinov & Krełowski (2023) compared six stars from the Upper Scorpius (USco) region in the Sco-Cen OB association with three different regions: a set of four stars in the direction of the Perseus complex of clouds, a set of three stars located within the Galactic disk below Sco-Cen, and a single target in the Galactic 1st quadrant. USco seems to displays a double-peaked profile of the 6196 Å DIB and a significant broadening compared with the other regions (especially

Survey of Profile Parameters of the 6196 Å Diffuse Interstellar Band

From Uniform Profiles to Doppler Splitting and Blueshifts

M. Piecka[1], S. Hutschenreuter[1], and J. Alves[1,2]

[1] University of Vienna, Department of Astrophysics, Türkenschanzstrasse 17, 1180 Vienna, Austria
e-mail: martin.piecka@univie.ac.at
[2] University of Vienna, Research Network Data Science at Uni Vienna, Kolingasse 14-16, 1090 Vienna, Austria

Received X XX, XXXX; accepted X XX, XXXX

ABSTRACT

The diffuse interstellar band (DIB) at 6196 Å exhibits significant profile variations across the Milky Way, motivating the study of three issues: (1) unusual broadening toward Upper Sco, (2) lack of variations near η Car, and (3) the origin of the blueshift in Sco OB1. Using archival spectra of 453 early-type stars across the Galactic disk, we compiled a catalogue of the DIB's profile parameters. We detect Doppler-split components in most regions, but these cannot account for the observed broadening (~ 23 km s^{-1}) in Upper Sco, Orion, Vela OB2, and Melotte 20 (α Per). Neither stellar ages nor cluster-cloud distances significantly affect the broadening. However, a gradient in FWHM within Sco-Cen and Orion shows broadening decreasing with distance from star-forming centers, hinting at a link with supernova events. In Carina Nebula, minimal DIB variations occur near η Car, but adjacent southern areas exhibit large deviations similar to Upper Sco. Rosette Nebula and NGC 6405 also show narrow profiles (< 20 km s^{-1}) with minimal spatial variation. Finally, comparing Sco OB1 to Lagoon Nebula suggests the blueshift arises from an unresolved kinematic component shifting the band center.

Key words. ISM: kinematics and dynamics – ISM: lines and bands – ISM: structure

1. Introduction

Diffuse interstellar bands (DIBs) are spectral absorption features observed toward OB stars (Herbig 1995). First noted by Heger (1922) and identified as interstellar components a decade later (Merrill 1934; Merrill & Wilson 1938), their equivalent widths (EWs) correlate with reddening, suggesting a link to interstellar dust. The carriers are thought to be organic or carbonaceous molecules (Leger & D'Hendecourt 1985; Herbig 1993; Salama et al. 1999). Hundreds of DIBs have been catalogued in optical to near-IR wavelengths (Hobbs et al. 2008, 2009; Cox et al. 2014; Galazutdinov et al. 2017; Fan et al. 2019; Smoker et al. 2023), with only a few unambiguously identified (Foing & Ehrenfreund 1997; Campbell et al. 2015; Cordiner et al. 2019; Nie et al. 2022).

Key discoveries since the late 1990s include ongoing debates about the 6614 Å DIB profile (Welty et al. 1996; Galazutdinov et al. 2002; Cami et al. 2004; Bernstein et al. 2015; Marshall et al. 2015; MacIsaac et al. 2022; Ebenbichler et al. 2024), the strong correlation between the 6196 Å and 6614 Å DIBs (Moutou et al. 1999; McCall et al. 2010; Friedman et al. 2011; Bailey et al. 2016; Krełowski et al. 2016; Bondar 2020), the detection of a specific carrier (C_{60}^+; Campbell et al. 2015), investigations of DIB profile variability (Galazutdinov et al. 1999; Law et al. 2017; Farhang et al. 2023), and 3D mapping of DIB EWs (Kos et al. 2014; Zasowski et al. 2015; Farhang et al. 2019; Cox et al. 2024). Despite progress, the carriers' formation, roles in the ISM, and the properties they trace remain unclear.

Recently, Krełowski et al. (2021) reported significant shifts in the central wavelengths of strong DIBs, mainly in their red wings. Galazutdinov & Krełowski (2023) compared six stars in Upper Scorpius with other regions and found a double-peaked 6196 Å DIB profile and noticeable broadening. Multiple clouds and rotational temperature effects were deemed unlikely causes, suggesting instead that conditions in the intervening cloud could influence these observed discrepancies.

Article number, page 1 of 28

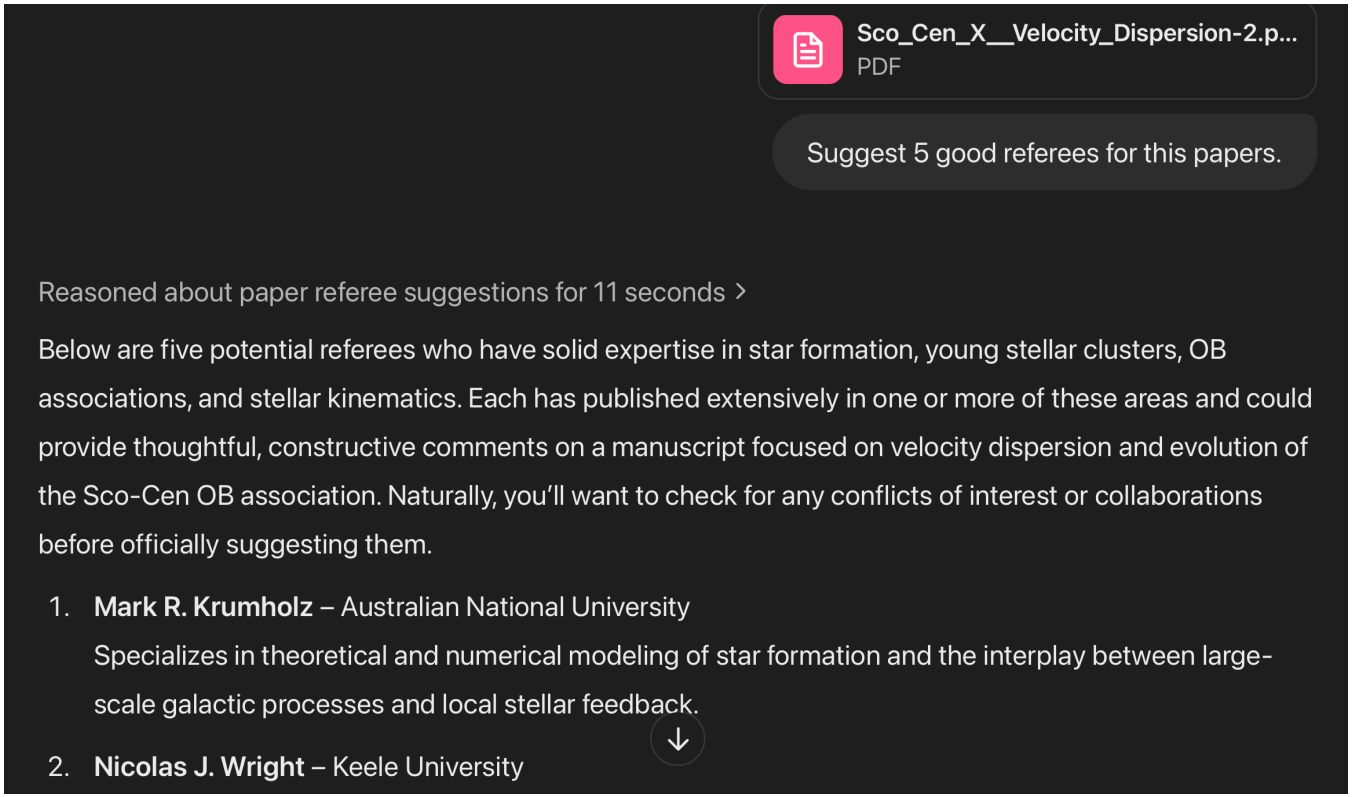
Ethical issues in science writing

AI IN SCIENCE WRITING

SUGGESTING REFEREES

- "Suggest 5 referees for this paper"
  => ChatGPT

Credit: J. Alves



Ethical issues in science writing

AI IN SCIENCE WRITING

SUGGESTING REFEREES

- "Suggest 5 referees for this paper" => ChatGPT
- ChatGPT => 5 referee suggestions in 11 sec

Credit: J. Alves

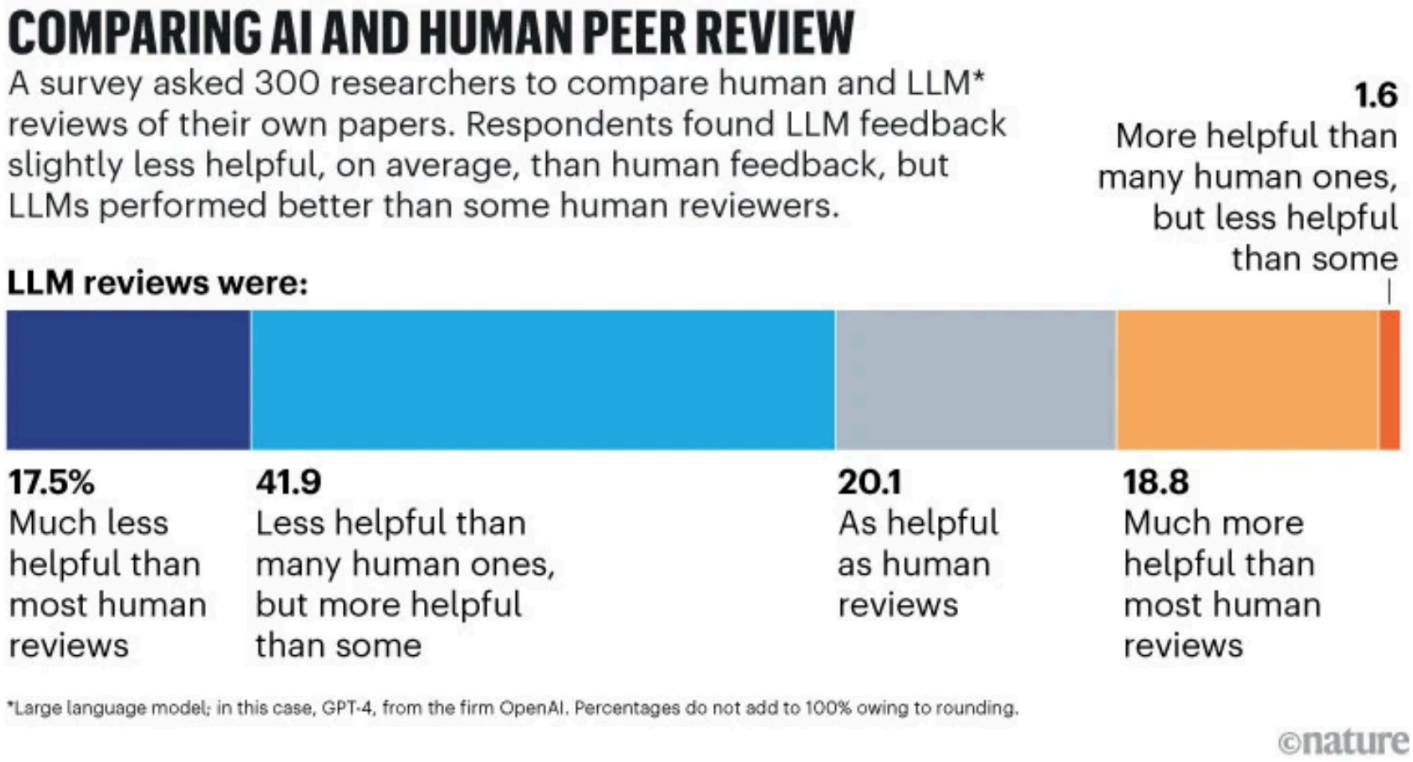
2. **Nicolas J. Wright** – Keele University
   Has worked extensively on the formation and evolution of stellar associations and on the Gaia-based study of stellar kinematics, clusters, and OB associations.
3. **Anthony G. A. Brown** – Leiden Observatory
   A leader in the Gaia Data Processing and Analysis Consortium, deeply familiar with astrometric techniques, stellar clusters, and galactic structure studies.
4. **Jonathan Gagné** – Institut de recherche sur les exoplanètes (iREx), Université de Montréal
   Known for research on the kinematics and membership of young moving groups and associations, including work with large spectroscopic surveys.
5. **Catherine Zucker** – Space Telescope Science Institute
   Focuses on 3D structure of the local interstellar medium, stellar feedback processes, and the dynamics of star-forming complexes, often employing Gaia data.

These experts cover a good range of perspectives—from observational and analytical to theoretical—and are well-positioned to review a paper on the dynamical evolution of an OB association.

Ethical issues in science writing

AI IN SCIENCE WRITING

AI REFEREES?



Ethical issues in science writing

AI IN SCIENCE WRITING

THE CHALLENGES

- **Bias:** AI algorithms mirror biases in their training data. If not controlled, can lead to skewed or incompleteness
- **Reproducibility:** AI-driven results can be difficult to reproduce if data, models, or parameters are not disclosed. Proprietary algorithms or datasets reduce transparency
- **Transparency:** some AI models function as "black boxes" making it difficult to explain how a decision was reached, reduces trust. Privacy?
- **Ethical Concerns:** Automated systems can be manipulated. Energy footprint

Ethical issues in science writing

AI IN SCIENCE WRITING

BUT…

“THERE IS NO FUTURE WHERE WE DO NOT EMBRACE AI TOOLS. OR WE WILL BE “EMBRACED” BY THEM”

(J. Alves)

AI IN SCIENCE WRITING

HUMANS NEEDED AS NEVER BEFORE

Where to publish my paper?

LANDSCAPE OF ASTRONOMICAL PUBLISHING

Where to publish my paper?

LANDSCAPE OF ASTRONOMICAL PUBLISHING

JOURNALS DIFFER BY OWNERSHIP

- Owned by a (for profit) publisher:
  - Publisher selects (and can fire) the editorial board, and sets the price
  - Publisher answers to its shareholders: usually expensive...
- Owned by a learned society (or other non-profit):
  - Society selects the editorial board, and negociates a contract with a publisher
  - Usually cheaper

Where to publish my paper?

LANDSCAPE OF ASTRONOMICAL PUBLISHING

MAKING A JOURNAL COSTS MONEY

- Funding sources:
  - Library subscriptions
  - Page charges
  - Direct government/academy/learned society funds
- Astronomy journals use very varied combinations of those

Where to publish my paper?

LANDSCAPE OF ASTRONOMICAL PUBLISHING

THE CORE ASTRONOMY JOURNALS

- 3-6 journals
- (Very) broad topic coverage
- Together publish >90% of all astronomy
- Needed by every astronomer
- High(ish) Impact Factors, within a factor of <2 range
- Astronomy is unusual; Biology has hundreds/thousands of journals, with IF ranges of >50

Where to publish my paper?

LANDSCAPE OF ASTRONOMICAL PUBLISHING

THE CORE ASTRONOMY JOURNALS

- Astronomy & Astrophysics (Continental Europe, South America, Armenia)
- AAS journals: ApJ, ApJ Letters, ApJ Suppl, AJ (US)
- MNRAS (UK)
- (PASP) (US)
- (Nature Astronomy)

Where to publish my paper?

LANDSCAPE OF ASTRONOMICAL PUBLISHING

OTHER ASTRONOMY JOURNALS: THE SPECIALISTS

- Experimental Astronomy
- Icarus (Planetary Science)
- Planetary & Space Science
- The Planetary Science Journal (new)
- Solar Physics
- (PASP)

Where to publish my paper?

LANDSCAPE OF ASTRONOMICAL PUBLISHING

NATURE* AND *SCIENCE

- Cover all of science, including astronomy
- Short format

Look for scoops, occasionally at the expense of rigor
Nature published the ADN double helix and 51 Peg,
but also Cold Fusion and Memory of Water ;-)

Where to publish my paper?

LANDSCAPE OF ASTRONOMICAL PUBLISHING

NATURE AND *SCIENCE*

- **Pros:**
  - Good PR machine
  - Known to the biologist on your promotion committee
- **Cons:**
  - Not always accessible to readers: expensive or inconvenient
  - ~10% acceptance rate
  - Sometimes poor editing

Where to publish my paper?

LANDSCAPE OF ASTRONOMICAL PUBLISHING

THE REVIEW JOURNALS

- Annual Reviews of Astronomy & Astrophysics
- Annual Reviews of Earth & Planetary Science
- A&A Reviews (unrelated to A&A...)
- Space Science Reviews

Not (usually) a venue for young scientists
Mostly solicit their authors
Very important resource for synthetic background

How the journals work?

How the journals work?

EXAMPLE: HOW DOES A&A WORK?

EDITING

- Selection (and hopefully improvement) of the journal content
  - Initial filtering
  - Finding referees
  - Processing/analysing referee reports
  - Acceptance processing (hopefully :-))

How the journals work?

EXAMPLE: HOW DOES A&A WORK?

INITIAL FILTERING

- No God-given right to a referee ;-)
- Surprises many affected authors...
- As the EiC, check “suspicious” papers
- As the Scientific Editor, read every paper (almost...)
  - Is it appropriate for A&A?
  - Is it well written?

How the journals work?

EXAMPLE: HOW DOES A&A WORK?

FINDING A REFEREE

- **Referees are increasingly more difficult to find!**
- Referees work for free (for an A&A calendar :-))
  - as a service to the community
  - (to maintain the value of their own publications)
  - to learn something As the EiC, check “suspicious” papers
- Is it A LOT harder to find a referee for a poor paper:
  - much more work; easiest report is “publish as is”; hardest is rejection
  - much less fun

How the journals work?

EXAMPLE: HOW DOES A&A WORK?

FINDING A REFEREE

- Ideally, a referee:
  - is competent on every aspect
  - has a broad view of the field
  - nonetheless cares about details
  - will accept the job...
  - will actually produce a report within a few weeks

Conflicting requirements...

How the journals work?

EXAMPLE: HOW DOES A&A WORK?

FINDING A REFEREE

- Senior colleagues:
  - have the broad view
  - easily identified
  - but busy...
- Post-docs/PhD students:
  - are eager to help
  - some do not yet have broad perspective
  - harder to identify

Choice is a compromise

How the journals work?

EXAMPLE: HOW DOES A&A WORK?

FINDING A REFEREE

- Identify 3-5 potential referees: enough for ~90% of cases
- Send request
- Wait up to ~4 days for an answer
  - please, please, reply faster!
- Iterate until successful...

Takes 0.5 day to 1 month... Median ~1 week

How the journals work?

EXAMPLE: HOW DOES A&A WORK?

READING A REPORT

- How to react to a rejection, or deep modification, recommendation?
  - breathe deeply
  - read carefully
  - **NEVER reply immediately**
  - go out for a beer :-)

A few days later, read again, and calmly go through every point

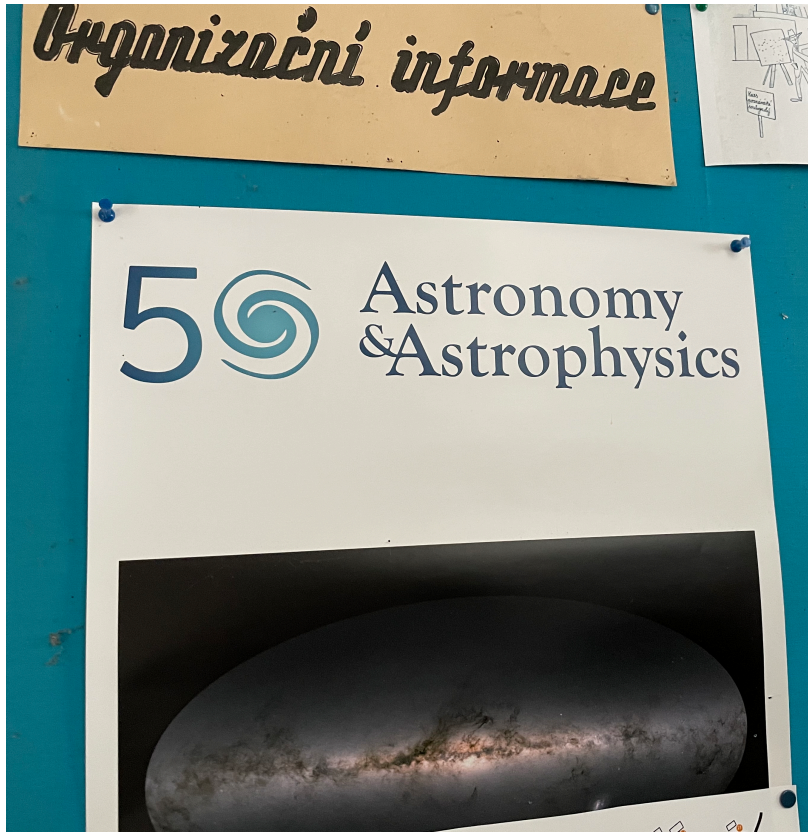
How the journals work?

EXAMPLE: HOW DOES A&A WORK?

READING A REPORT

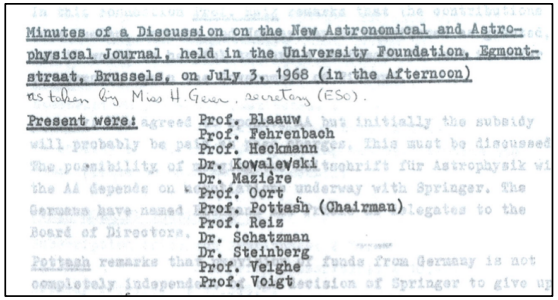
- Is the referee right on some points?
  - are they important? can this be repaired?
  - should paper be declared a loss? Better admit an error than publish an embarrassment...
- If the referee misunderstood, don't fault him/her, clarify the manuscript:
  - others would probably misunderstand too, and never tell you. Referee is doing you a favour...

A&A: a journal by astronomers, for astronomers



Brief history of A&A

- **April 6, 1968:** astronomers from Belgium, Denmark, France, Germany, and the Netherlands (5 countries) agreed to create a European Journal to substitute national and local astronomical journals/bulletins

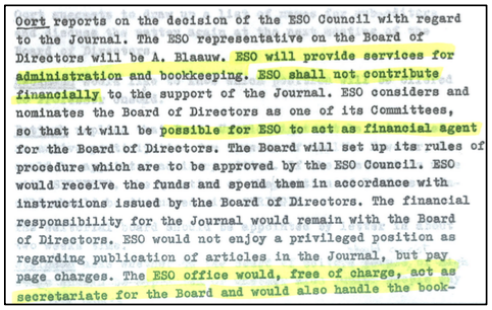


Minutes of a Discussion on the New Astronomical and Astrophysical Journal, held in the University Foundation, Egmontstraat, Brussels, on July 3, 1968 (in the Afternoon)

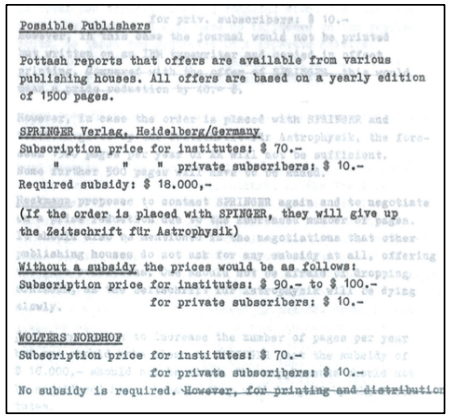
as taken by Miss H. Gear, secretary (ESO).

Present were:

Prof. Blaauw
Prof. Fehrenbach
Prof. Heckmann
Dr. Kowalewski
Dr. Mazière
Prof. Oort
Prof. Pottash (Chairman)
Prof. Reiz
Dr. Schatzman
Dr. Steinberg
Prof. Velghe
Prof. Voigt



Oort reports on the decision of the ESO Council with regard to the Journal. The ESO representative on the Board of Directors will be A. Blaauw. ESO will provide services for administration and bookkeeping. ESO shall not contribute financially to the support of the Journal. ESO considers and nominates the Board of Directors as one of its Committees, so that it will be possible for ESO to act as financial agent for the Board of Directors. The Board will set up its rules of procedure which are to be approved by the ESO Council. ESO would receive the funds and spend them in accordance with instructions issued by the Board of Directors. The financial responsibility for the Journal would remain with the Board of Directors. ESO would not enjoy a privileged position as regarding publication of articles in the Journal, but pay page charges. The ESO office would, free of charge, act as secretariate for the Board and would also handle the book-



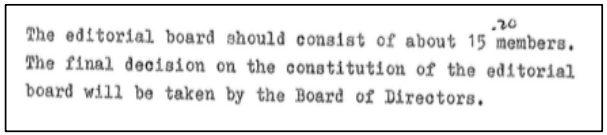
Possible Publishers

Pottash reports that offers are available from various publishing houses. All offers are based on a yearly edition of 1500 pages.

SPRINGER Verlag, Heidelberg/Germany
Subscription price for institutes: $ 70.-
" " " private subscribers: $ 10.-
Required subsidy: $ 18.000,-
(If the order is placed with SPINGER, they will give up the Zeitschrift für Astrophysik)

Without a subsidy the prices would be as follows:
Subscription price for institutes: $ 90.- to $ 100.-
for private subscribers: $ 10.-

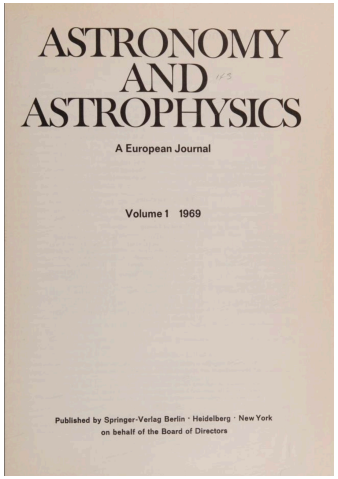
WOLTERS NORDHOF
Subscription price for institutes: $ 70.-
for private subscribers: $ 10.-
No subsidy is required. However, for printing and distributio



The editorial board should consist of about 15 ~~members~~ 20. The final decision on the constitution of the editorial board will be taken by the Board of Directors.

Brief history of A&A

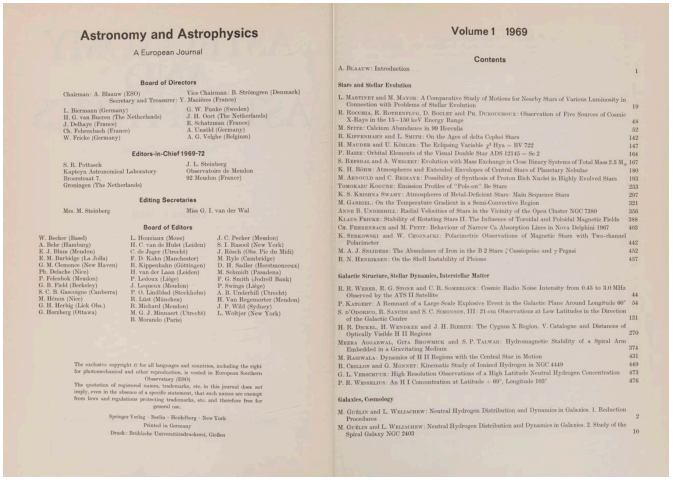
- **April 6, 1968:** astronomers from Belgium, Denmark, France, Germany, and the Netherlands (5 countries) agreed to create a European Journal to substitute national and local astronomical journals/bulletins
- **Jan 1969:** the first issue of A&A


ASTRONOMY AND ASTROPHYSICS

A European Journal

Volume 1 1969

Published by Springer-Verlag Berlin · Heidelberg · New York on behalf of the Board of Directors


Astronomy and Astrophysics

A European Journal

Volume 1 1969

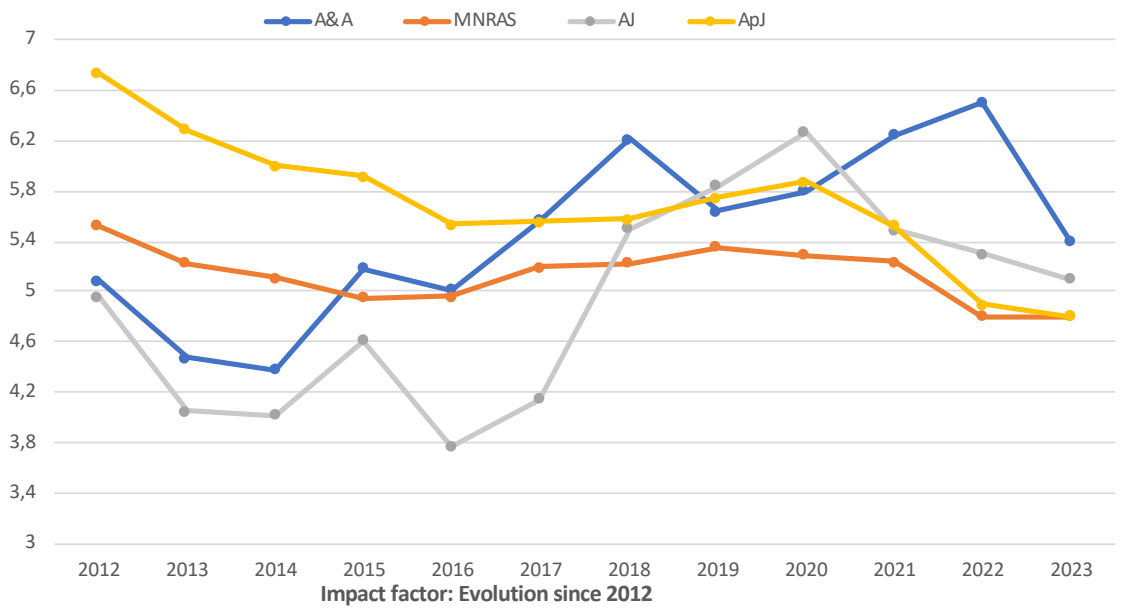
Contents

Brief history of A&A

- **April 6, 1968:** astronomers from Belgium, Denmark, France, Germany, and the Netherlands (5 countries) agreed to create a European Journal to substitute national and local astronomical journals/bulletins
- **Jan 1969:** the first issue of A&A
- **A&A today:** a consortium of Sponsoring Bodies from 28 countries in Europe and beyond, plus ESO, and 2 observer countries (www.aanda.org/board-of-directors)
- **Unique approach to science publishing:** “A Journal run by astronomers, for astronomers”
- **A&A Impact Factor 2024:** 5.4, first amongst the ”BIG 4” in astronomy!

Brief history of A&A

Impact Factor of A&A



Organization of A&A

- **Board of Directors:** one member per Sponsoring Body. The governing body that owns the Journal:
  - long-term strategy and policies of the Journal
  - appoints the Scientific Editors
  - negotiates contract with the Publisher
- **Scientific Editors (20):** Editor in Chief, Letters Editor in Chief, Managing Editor, 17 AEs
  - responsible for the contents of the Journal
  - manage the refereeing process
- **Editorial Office:** day-to-day interface with the Publisher
- **Publisher (EDP Sciences):** production, sales, distribution, promotion

Organisation of A&A

- **Board of Directors**
- **Scientific Editors**
- **Editorial Office**
- **Publisher**

In addition:

- **ESO:** acts on behalf of the Board for contractual, legal matters, and financial administration
- **CDS:** on-line publication of article data

Publication of A&A

- **Open Access:** A&A is published under the Subscribe-to-Open (S2O) model:
  - Free access to read worldwide
  - Free publication for authors from the A&A sponsoring countries (charges for long papers)
  - Page charges for authors from non-sponsoring countries
  - Subscriptions cover a substantial fraction of the A&A publication costs

Important: subscriptions critical to keep the S2O going!

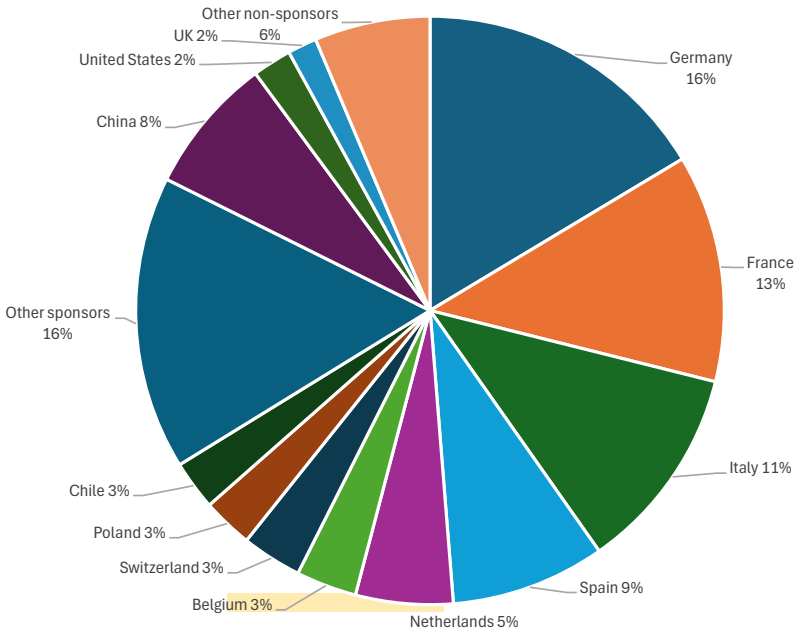
Publication of A&A

- **Charges for long papers:** from 2 April 2025:
  - 12 main body + 8 pages appendices: no page charges for authors from the A&A sponsoring countries
  - Beyond 12 main body and/or 8 pages: charges for all authors
  - No page limit in exceptional cases: papers of major space missions, instruments, etc.

Publication of A&A

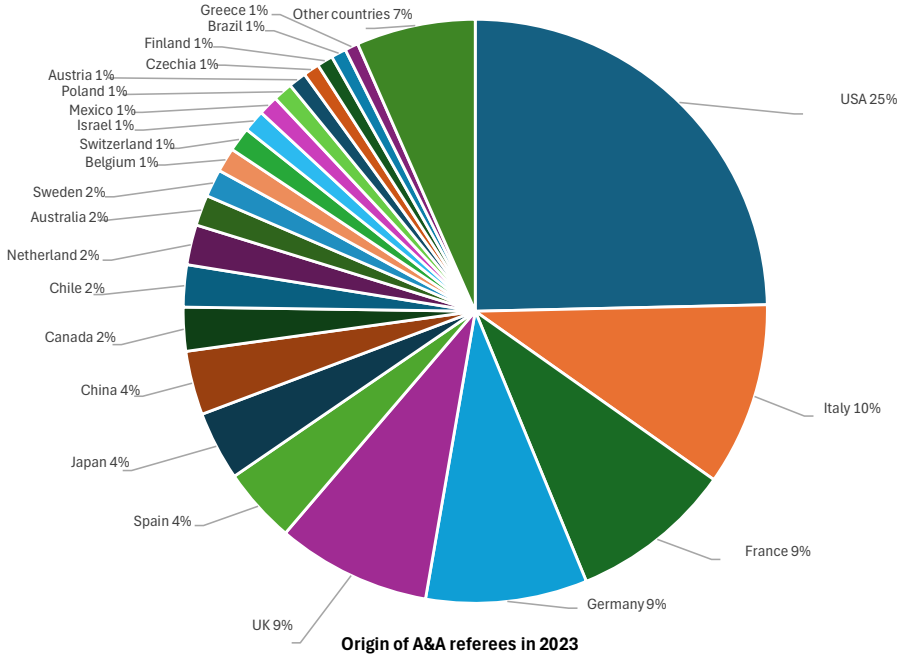
A&A papers and referees in 2023

Submissions per country



Origin of A&A MJ submissions in 2023

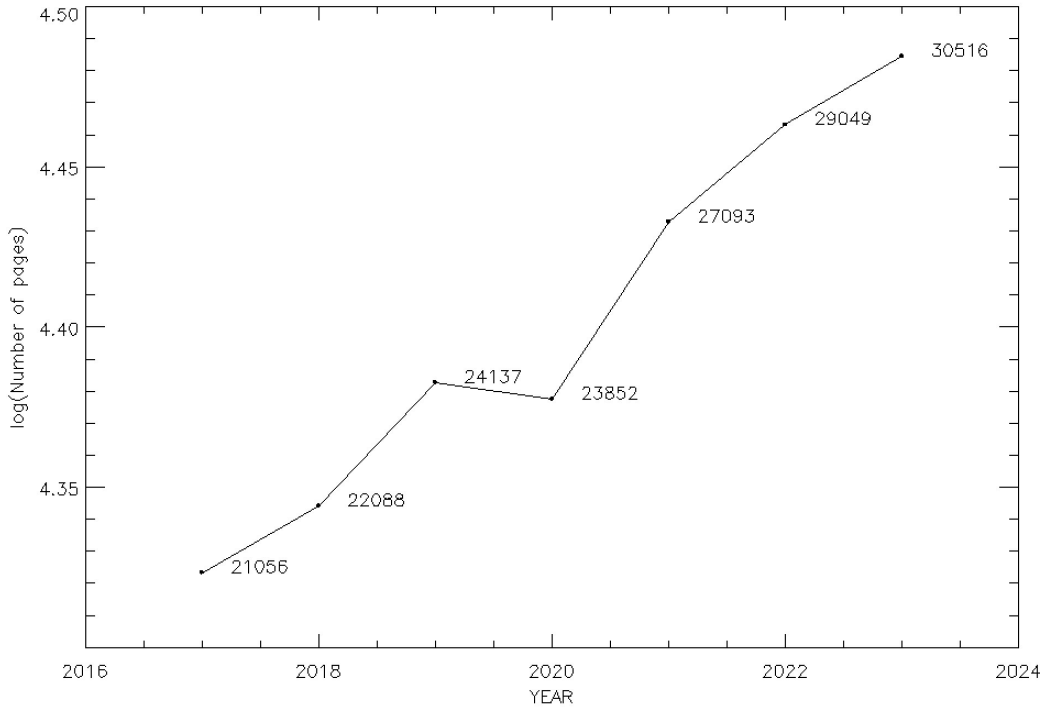
Referees per country



Origin of A&A referees in 2023

Publication of A&A

Evolution of published pages: A&A is growing, fast!



A&A is special

UNIQUE OPERATIONAL MODEL

- **The only main astronomical journal** that does not belong to a single organisation or country
- **A truly international journal,** run by a consortium of 28 sponsoring countries and free to read under the S2O Open Access model
- **A&A sponsoring countries** share the operational costs of the Journal (publication, Editor's and Editorial Offices, Open Access)
- **Authors from the A&A sponsoring countries** do not pay page charges (except for long papers)
- **"A journal published by astronomers, for astronomers":** the A&A Board of Directors, Editors are professional astronomers

A&A is special

SUPPORT FOR A NEW GENERATION OF ASTRONOMERS

- **A&A Awards for Best PhD Article and Best Young Career Researcher Article:**
  - First edition 2021
  - Current edition 2025:
    - Call for applications: mid-October 2024
    - Deadline: end-November
    - Awardees announced: March 2025
    - Presentation of Awards at EAS 2025 in Cork, Ireland
    - Awardees receive an A&A Award diploma, free participation at EAS, and a small cash prize
  - **Next edition 2026:** call for applications mid-October 2025. Do apply!

A&A is special

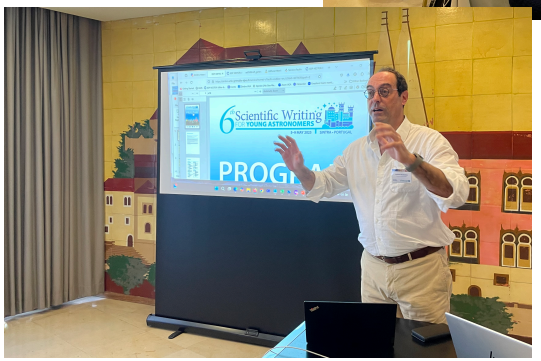
SUPPORT FOR A NEW GENERATION OF ASTRONOMERS

- **Special Session on Science Writing at EAS 2024:**
  - Annual Meeting of the European Astronomical Society (EAS), 1-5 July 2024, Padova, Italy
  - ~50 attendees, presentations with practical advice, interactive discussions
- **Special Session on Science Publishing at EAS 2025:**
  - Annual Meeting of the European Astronomical Society (EAS), 23–27 June 2025, Cork, Ireland
  - A discussion with the community on the future of science publishing in astronomy
  - >100 attendees, very engaged and productive discussion with the community!
- **Special Session on Science Publishing at EAS 2026: planned**

A&A is special

SUPPORT FOR A NEW GENERATION OF ASTRONOMERS

- **Scientific Writing for Young Astronomers, SWYA:**
  - SWYA schools started in 2008
  - Six editions until now:
    - 2008: Blankenberge, Belgium
    - 2009: Blankenberge, Belgium
    - 2014: Tihany, Hungary
    - 2016: Puerto Varas, Chile
    - 2020: Kunming, China
    - 2025: Sintra, Portugal



A&A is special

SUPPORT FOR A NEW GENERATION OF ASTRONOMERS

- **Scientific Writing for Young Astronomers, SWYA:**
  - SWYA schools started in 2008
  - Six editions until now:
    - 2008: Blankenberge, Belgium
    - 2009: Blankenberge, Belgium
    - 2014: Tihany, Hungary
    - 2016: Puerto Varas, Chile
    - 2020: Kunming, China
    - 2025: Sintra, Portugal
  - Seventh edition, 2027:
    - **TBA – PLEASE GET IN TOUCH WITH ME IF YOU WOULD BE WILLING TO HOST IT IN YOUR COUNTRY!**

The future of A&A

- **“A&A beyond 2030”: a strategic plan for the development of A&A**
  - Initiated by the A&A Board of Directors in 2024, a descendant of the “A&A 2022” project
  - A Strategic Development Roadmap of A&A: 2026
- **Living up to the motto “A journal published by astronomers for astronomers”**
- **Publish in (or referee for!) A&A!**

Conclusions and takeaways

WHAT CAN I DO AS AN AUTHOR/REFEREE/EDITOR?

Conclusions and takeaways

WHAT CAN I DO AS AN AUTHOR/REFEREE/EDITOR?

BE RESPONSIBLE, FAIR, AND CONSTRUCTIVE

BE HONEST

“DON’T BE A JERK”

(J. Alves)

Conclusions and takeaways

“AS LONG AS WE REMEMBER WHAT THE PAPER IS, WE WILL BE FINE”

(J. Alves)

己所不欲，勿施于人

孔子

What you do not want done to yourself, do not do to others

Confucius