

《观测天体物理专题》

Astro Student Seminar

祝伟

四教4203

2022.02.25

本节大纲

1. 2021秋seminar回顾
2. 2022春seminar形式
3. Research talk

1. Summary of 2021F semester

- 47 students presented!
- Broad range of topics
 - G&C (18), EP (10), HE (10), Sun & Stars (6)
 - Others: SETI (Zhao X.), SN yield from deep sea crust (Zhu J.), Mars (Huang H.)
- Journals: Nature (22), Science (10), others (15)
 - Timely topics (e.g., *Solar corona magnetic field* by Sui C., *Noninteracting low-mass BH* by Wang S.)
 - Counter opinions introduced (e.g., *Whether Sun is quiet* by Yang H., *DM interpretation of 3.5 keV line* by Liu Z.)

How to present a paper?

- Have a clear structure!
- Don't be afraid of spending (too much) time on the research background.
- Summary sentence/Take-home message
- Key figures (or tables)
 - Do you really need this figure/table?
- Your assessment/opinion
 - Do you believe the results? Why?
- Conclusion
- Back-up slides

Recap: How to find, read, and present a research paper?

Astronomy Paper Seminar Participation Guide & Reading Walkthrough

Show affiliations

[Cooke, Kevin C.](#) ; [Connelly, J. L.](#) ; [Jones, K. M.](#) ; [Kirkpatrick, Allison](#) ; [Mills, E. A. C.](#) ; [Crossfield, Ian J. M.](#)

Welcome to the wonderful world of scientific inquiry! On this journey you'll be reading many $\times 10^N$ papers in your discipline. Therefore, efficiency in digesting and relaying this information is paramount. In this guide, we'll review how you can participate in your local astronomy seminars. Participation takes many forms, from contributing a recently discovered article to the discussion of a published paper. In this guide, we'll begin by providing some suggested introductory activities for beginner scientists. Then we discuss how to locate papers and assimilate their results. Finally we conclude with a discussion on paper presentation and note storage. This guide is intended for an undergraduate and graduate student audience, and we encourage faculty to read and distribute this guide to students.

Publication: eprint arXiv:2006.12566

Pub Date: June 2020

arXiv: [arXiv:2006.12566](#) 

Bibcode: [2020arXiv200612566C](#) 

Keywords: Astrophysics - Instrumentation and Methods for Astrophysics; Physics - Physics Education

E-Print Comments: 5 pages, 0 figures

Writing Scientific Papers in Astronomy

Show affiliations

[Knapen, Johan H.](#) ; [Chamba, Nushkia](#) ; [Black, Diane](#)

Writing is a vital component of a modern career in astronomical research. Very few researchers, however, receive any training in how to produce high-quality written work in an efficient manner. We present a step-by-step guide to writing in astronomy. We concentrate on how to write scientific papers, and address various aspects including how to crystallise the ideas that underlie the research project, and how the paper is constructed considering the audience and the chosen journal. We also describe a number of grammar and spelling issues that often cause trouble to writers, including some that are particularly hard to master for non-native English speakers. This paper is aimed primarily at Master's and PhD level students who are presented with the daunting task of writing their first scientific paper, but more senior researchers or writing instructors may well find the ideas presented here useful.

Publication: [eprint arXiv:2110.05503](#)

Pub Date: [October 2021](#)

arXiv: [arXiv:2110.05503](#) 

[Knappen et al. \(2021\)](#)

2022春Seminar课程形式

- 48名同学报名，13周次
- 每个报告20分钟
- 13名同学选课（5+3+5）
 - 天文系：四年级研究生+因特殊原因需要提前选课的学生
- 选题+分组
- 反馈问卷

2022春天体物理专题学生报告反馈 (week-1)



*1. 关于报告内容

	非常不同意	不同意	中立	同意	非常同意
本报告提供了足够的背景知识介绍，且相关介绍与结论非常相关。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
本报告的逻辑清晰，结构合理	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
本报告的结论明确，“take-home message”简洁概要。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
本报告体现了报告人的独立思考能力。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*2. 关于报告PPT

	非常不同意	不同意	中立	同意	非常同意
PPT上总体文字偏多。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PPT上图片太小，导致关键细节看不清楚。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PPT上含有较为复杂的图表，且报告人对其解释不到位。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***3. 关于报告人表现**

	非常不同意	不同意	中立	同意	非常同意
报告人英语表达清晰流畅。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
报告人在报告过程中几乎全程面向PPT，与听众缺少眼神交流。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
报告人时间把控到位。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
报告人回答问题准确到位。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***4. 你对本报告的总体评价**

非常差 1 2 3 4 5 非常好

5. (可选) 你对本报告的其他建议?

6. (可选) 请提供你的姓名，以便报告人后期联系

Seminar选题+分组 (2-4 students/topic)

问卷链接

1. What is the origin of the radius valley? (W. Zhu)
2. What is the cause of the spiral structures in protoplanetary disks? (X. Bai)
3. What is the nature of LB 1-like systems? (W. Zhu)
4. What is the origin of ultra-high energy cosmic rays? (X. Bai)
5. Origin of 511 keV gamma-ray emission from the galactic bulge (H. Feng)
6. 21cm absorption anomaly at cosmic dawn — new physics or systematics? (Y. Mao)
7. Hubble constant from gravitational lensing time delay (S. Mao/D. Xu)
8. Why has fuzzy dark matter started gaining popularity over cold dark matter in the past decade? (D. Xu)

报告安排

- 3/01及之前：Seminar选题+分组（链接见微信群）
- 3/04（第二周）：公布报告安排
 - 祝伟：First isolated black hole from microlensing? (Sahu et al. 2022 vs. Lam et al. 2022)
 - 黄崧：Ultra Diffuse Galaxies (UDGs): Dark matter dominated or deficient?
- 3/11（第三周）
 - 干天君 vs. 蒋昊昌：Planet 9 hypothesis
 - 王森 & 梁岩：TBD
- 3/18（第四周）起：
 - Free-topic & fixed-topic presentations
 - For group presentations: Meet & discuss at least two weeks ahead!

Science talk
Peas in a pod: real or not?