

Seminar 1

Session 06: Reading a textbook

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first semester, academic year 2022

05 October 2022

Did you download the textbook OpenStax
“Astronomy 2e”?

Have you started reading the textbook
OpenStax “Astronomy 2e”?

If you have not yet started reading the textbook OpenStax “Astronomy 2e”, come and talk to me during 10-min break today.

We can arrange a time to gather in the classroom for reading the textbook.

About last week's exercise

A student have chosen this paper.

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JOURNAL ARTICLE

Polarimetry and photometry of gamma-ray bursts afterglows with RINGO3

M Shrestha, I A Steele, S Kobayashi, R J Smith, C Guidorzi, N Jordana-Mitjans, H Jermak, D Arnold, C G Mundell, A Gomboc

Monthly Notices of the Royal Astronomical Society, Volume 516, Issue 2, October 2022, Pages 1584–1600, <https://doi.org/10.1093/mnras/stac2211>

Published: 16 August 2022 Article history ▾

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ABSTRACT

We present photometric and polarimetric measurements of gamma-ray burst (GRB) optical afterglows observed by the RINGO3 imaging polarimeter over its ~7 yr lifetime mounted on the Liverpool Telescope. During this time, RINGO3 responded to 67 GRB alerts. Of these, 28 had optical afterglows and a further ten were sufficiently bright for photometric and polarimetric analysis ($R \leq 17$). We present high quality multicolour light curves of ten sources: GRR 120606A, GRB

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VIEWS 73

ALTMETRIC 1

More metrics information

About last week's exercise

Abstract of the paper



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investigation of the population in a broad context relative to the current literature. We use survival analysis to fully include the polarization upper limits in comparison with other GRB properties, such as temporal decay rate, isotropic energy, and redshift. We find no clear correlation between polarization properties and wider sample properties and conclude that larger samples of early time polarimetry of GRB afterglows are required to fully understand GRB

About last week's exercise

A word “temporal” was chosen by the student.

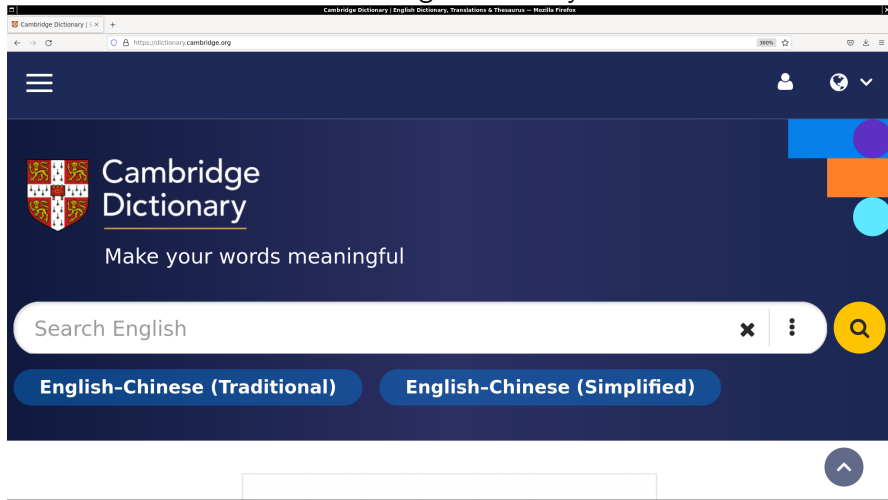


Article Navigation

investigation of the population in a broad context relative to the current literature. We use survival analysis to fully include the polarization upper limits in comparison with other GRB properties, such as **temporal** decay rate, isotropic energy, and redshift. We find no clear correlation between polarization properties and wider sample properties and conclude that larger samples of early time polarimetry of GRB afterglows are required to fully understand GRB

About last week's exercise

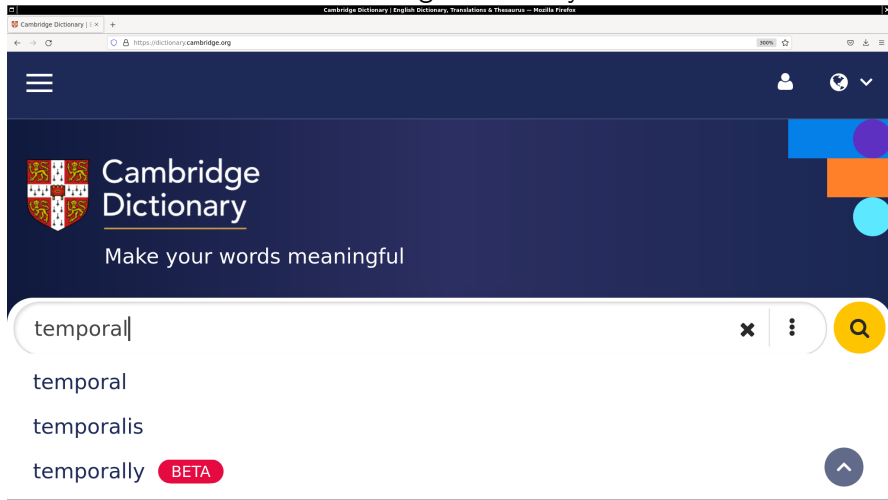
Cambridge Dictionary



The screenshot shows the Cambridge Dictionary website homepage. The browser address bar displays the URL <https://dictionary.cambridge.org>. The page features a dark blue header with a hamburger menu icon on the left and user, globe, and dropdown icons on the right. The main content area includes the Cambridge Dictionary logo (a shield with a cross and four quadrants) and the text "Cambridge Dictionary" in a large, white, serif font. Below the logo is the tagline "Make your words meaningful" in a smaller, white, sans-serif font. A prominent white search bar with rounded corners contains the placeholder text "Search English" and includes a clear button (x), a menu icon (three dots), and a yellow magnifying glass icon. Below the search bar are two blue buttons with white text: "English-Chinese (Traditional)" and "English-Chinese (Simplified)". The bottom right corner of the page has a circular button with an upward-pointing arrow.

About last week's exercise

Cambridge Dictionary



The screenshot shows the Cambridge Dictionary website in a browser window. The page title is "Cambridge Dictionary | English Dictionary, Translations & Thesaurus - Mozilla Firefox". The URL in the address bar is "https://dictionary.cambridge.org". The page features a dark blue header with a hamburger menu icon on the left, a user profile icon, a globe icon, and a dropdown arrow on the right. Below the header, the Cambridge Dictionary logo (a shield with a cross) is displayed next to the text "Cambridge Dictionary" and the tagline "Make your words meaningful". A search bar is positioned below the header, containing the text "temporal". To the right of the search bar are icons for clearing the search (an 'x'), a list of suggestions (three dots), and a search button (a magnifying glass). Below the search bar, a list of suggestions is shown: "temporal", "temporalis", and "temporally". A red "BETA" badge is located to the right of the "temporally" suggestion. A small upward-pointing arrow icon is visible at the bottom right of the search area.

About last week's exercise

Meaning of the word "temporal"

The screenshot shows the Cambridge Dictionary website. The page title is "TEMPORAL | meaning, definition in Cambridge English Dictionary". The URL is "https://dictionary.cambridge.org/dictionary/english/temporal". The page features the Cambridge Dictionary logo and navigation icons. The main heading is "temporal" in a large blue font, followed by the word "adjective" in a smaller blue font. Below this, the pronunciation is given for UK and US: UK /'tem.pər.əl/ and US /'tem.pə.əl/. A horizontal line separates this from the section "temporal adjective (PHYSICAL)" in purple. Below this, the word "formal" is listed. At the bottom, there is a navigation bar with "Contents" and "To top" (with an up arrow icon). A blue advertisement banner for "HOLIC" is visible in the lower part of the page.

TEMPORAL | meaning, definition in Cambridge English Dictionary

Cambridge Dictionary

temporal

adjective

UK /'tem.pər.əl/ US /'tem.pə.əl/

temporal adjective (PHYSICAL)

formal

HOLIC 口罩界精品就在台北婦幼展

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About last week's exercise

Meaning of the word "temporal"



formal

relating to practical matters or physical things, rather than spiritual ones:

- *The tyranny of the monarchy lies in its spiritual rather than its temporal power: it tyrannizes the imagination.*

– SMART Vocabulary: related words and phrases

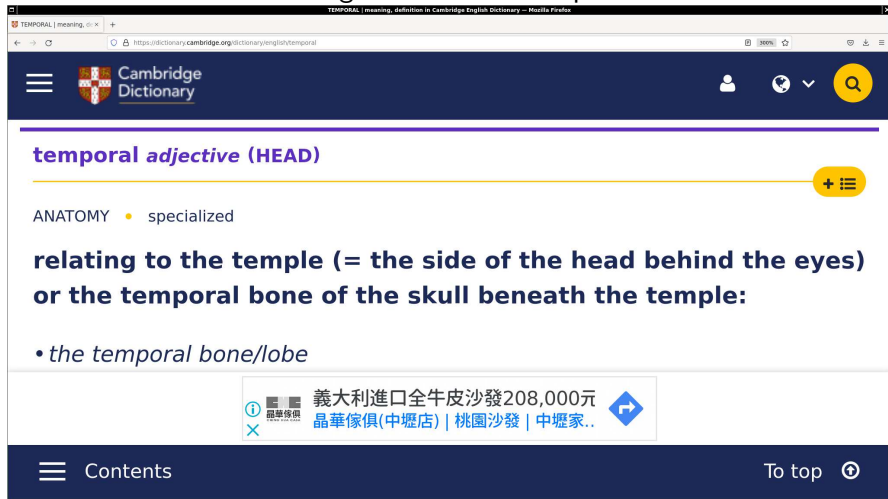


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Meaning of the word “temporal”



TEMPORAL | meaning, definition in Cambridge English Dictionary - Mozilla Firefox

TEMPORAL | meaning, definition in Cambridge English Dictionary - Mozilla Firefox

Cambridge Dictionary

temporal *adjective* (HEAD)

ANATOMY • specialized

relating to the temple (= the side of the head behind the eyes) or the temporal bone of the skull beneath the temple:

- *the temporal bone/lobe*

義大利進口全牛皮沙發208,000元
晶華傢俱(中壢店) | 桃園沙發 | 中壢家..

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About last week's exercise

Meaning of the word “temporal”



temporal *adjective* (TIME)

LANGUAGE • formal or specialized

relating to time:

- *The drug reduces spatial and temporal awareness.*
- *This book will appeal to anyone interested in temporal reference in*

Advertisement for a furniture store. Text: 義大利進口全牛皮沙發208,000元 (Italian imported all-leather sofa 208,000 yuan), 晶華傢俱(中壢店) | 桃園沙發 | 中壢家.. (Jinghua Furniture (Zhongli branch) | Taoyuan sofa | Zhongli home..). Includes a logo and a blue arrow icon.

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About last week's exercise

- Meaning of the word “temporal”
 - ① relating to practical matters or physical things, rather than spiritual ones
 - ② relating to the temple (= the side of the head behind the eyes) or the temporal bone of the skull beneath the temple
 - ③ relating to time
- What is the meaning of the word “temporal” in following sentence?
 - “We use survival analysis to fully include the polarization upper limits in comparison with other GRB properties, such as temporal decay rate, isotropic energy, and redshift.”
- “temporal decay rate”
 - physical matter rather than spiritual?
 - something about the temple?
 - something about time?

About last week's exercise

- There may be more than one meaning for a word.
- If there are more than one meaning for a word, you need to find out which meaning is used for the sentence you are reading.
 - You need to read the sentence to find out the answer.
 - You may need to read a few sentences before and/or after the sentence.
- If you are not used to use dictionaries, try some more times.

Today's Exercise #1

- Visit A&A (Astronomy and Astrophysics) website.
 - <https://www.aanda.org/>
- Click a link “All volumes”.
- Choose Vol. 665 (September 2022).
 - <https://www.aanda.org/articles/aa/abs/2022/09/contents/contents.html>
- Go through the table of contents, and choose a paper for this exercise.
- Read the abstract.
- Find an English word that you do not know the meaning.
- Use a dictionary (e.g. Cambridge Dictionary, Merriam-Webster Dictionary) to find out the meaning of the word you choose.
- Find a technical term that you do not know the meaning.
- Use an encyclopedia (e.g. Encyclopaedia Britannica, Scholarpedia) to find out the meaning of the term you choose.

Today's Exercise #1

Astronomy and Astrophysics



**Astronomy
& Astrophysics**

All volumes For authors

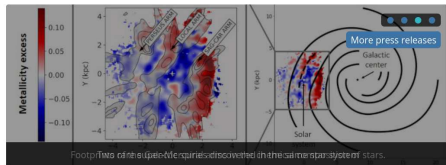
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Astronomy & Astrophysics

Worldwide astronomical and astrophysical research

Editor-in-Chief: Thierry Forveille
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Managing Editor: David Elbaz

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Footprints of the peculiar orbits discovered in the same spatial region.

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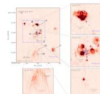
Orbital motion near Sagittarius A*. Constraints from polarimetric ALMA observations

COMPTEL data analysis using GammaLib and tools

The VLT-FLAMES survey of massive stars.
NGC2004#115: A triple system hosting a possible short period B+BH binary

LATEST VOLUME | All

Volume 666 (October 2022)
(in progress)



Today's Exercise #1

Astronomy and Astrophysics

The screenshot shows the website for Astronomy & Astrophysics. At the top, there is a navigation bar with the journal logo, 'All volumes', 'For authors', a search bar, and a menu icon. Below this is a large banner image of a starry sky with a bright orange nebula. The main content area features a breadcrumb trail 'Home > All issues' and a row of filter buttons: 'All volumes', 'Special issues', 'Forthcoming', 'Highlights', and 'Press releases'. The title 'Astronomy & Astrophysics: All volumes' is followed by a legend indicating that a square icon represents free access to the whole year/issue. A grid of year buttons is displayed, ranging from 2022 to 2003, with an 'Earlier years' button. A dropdown menu is open, showing '2022 Vol. 657-666' and 'Vol. 666 - October 2022 (in progress)'.

Home > All issues

All volumes Special issues Forthcoming Highlights Press releases

Astronomy & Astrophysics: All volumes

■ Indicates free access to the whole year/issue

2022 2021 2020 2019 2018 2017 2016 2015 2014 2013
2012 2011 2010 2009 2008 2007 2006 2005 2004 2003
2002 2001 Earlier years

▼ ■ 2022 Vol. 657-666

■ Vol. 666 - October 2022 (in progress)

Today's Exercise #1

Astronomy and Astrophysics

Astronomy & Astrophysics (A&A) — Mozilla Firefox

Astronomy & Astrophysics: All volumes

■ Indicates free access to the whole year/issue

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2012 2011 2010 2009 2008 2007 2006 2005 2004 2003
2002 2001 Earlier years

▼ ■ 2022 Vol. 657-666

- Vol. 666 - October 2022 (in progress)
- Vol. 665 - September 2022
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- Vol. 663 - July 2022
- Vol. 662 - June 2022
- Vol. 661 - May 2022
- Vol. 660 - April 2022
- Vol. 659 - March 2022
- Vol. 658 - February 2022
- Vol. 657 - January 2022

Today's Exercise #1

Astronomy and Astrophysics

Astronomy & Astrophysics (A&A) — Mozilla Firefox

Astronomy & Astrophysics: x +

https://www.aanda.org/articles/aabs/2022/09/contents/contents.html

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& Astrophysics

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Astronomy & Astrophysics

Volume 665 (September 2022)



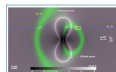
Test particles trace mass flows in the chromosphere (Druett, M. K., et al., 2022, A&A, 665, A6)



NOEMA mosaics overlaid on Herschel Cygnus X data (Beuther, H., et al., 2022, A&A, 665, A63)



On-sky correction of static speckles with VLT/SPHERE (Potier, A., et al., 2022, A&A, 665, A136)



Magnification map around a microlens near a caustic (Diego, J. M., 2022, A&A, 665, A127)

Astronomy and Astrophysics

Astronomy & Astrophysics (A&A) — Mozilla Firefox

Astronomy & Astrophysics: x +

← → ↻ <https://www.aanda.org/articles/aa/abs/2022/09/contents/contents.html> 330%

- Astrophysical processes

[Open Access](#)

Merging of unequal mass binary black holes in non-axisymmetric galactic nuclei A86
Peter Berczik, Manuel Arca Sedda, Margaryta Sobolenko, Marina Ishchenko, Olexander Sobodar and Rainer Spurzem
Published online: 13 September 2022
DOI: <https://doi.org/10.1051/0004-6361/202244354>
Full HTML | PDF (529.3 KB) | ePUB (2.951 MB) | References | NASA ADS Abstract Service

[Open Access](#)

Particle energization in colliding subcritical collisionless shocks investigated in the laboratory A87
A. Fazzini, W. Yao, K. Burdonov, J. Béard, S. N. Chen, A. Ciardi, E. d'Humières, R. Diab, E. D. Filippov, S. Kislov et al. (9 more)
Published online: 13 September 2022
DOI: <https://doi.org/10.1051/0004-6361/202243277>
Full HTML | PDF (2.667 MB) | ePUB (10.86 MB) | References | NASA ADS Abstract Service

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Are pulsar halos rare? - Modeling the halos around PSRs J0633+1746 and B0656+14 in the light of *Fermi*-LAT, HAWC, and AMS-02 observations and extrapolating to other nearby pulsars A132
Pierrick Martin, Alexandre Marcowith and Luigi Tibaldo
Published online: 20 September 2022
DOI: <https://doi.org/10.1051/0004-6361/202243481>
Full HTML | PDF (838.7 KB) | ePUB (9.245 MB) | References | NASA ADS Abstract Service

[Open Access](#)

Highly collimated microquasar jets as efficient cosmic-ray sources A145
G. I. Esrohar, I. I. Pellizza and G. F. Romero

Today's Exercise #1

- When you finish this exercise,
 - tell us the which paper you have chosen,
 - tell us the English word you have chosen,
 - tell us the dictionary you use,
 - tell us the meaning of the word you have chosen,
 - tell us the technical term you have chosen,
 - tell us the encyclopedia you use,
 - tell us the meaning of the technical term you have chosen.
- If any problem, talk to me.

Any question?

- Any question about the chapter of textbook OpenStax “Astronomy 2e” that you are reading?
- If there is any question, ask about it.

Today's Exercise #2

- Visit ApJ (Astrophysical Journal) website.
 - <https://iopscience.iop.org/journal/0004-637X>
- Choose Vol. 937.
 - <https://iopscience.iop.org/volume/0004-637X/937>
- Choose the issue “Number 1, 2022 September 20”.
 - <https://iopscience.iop.org/issue/0004-637X/937/1>
- Go through the table of contents, and choose a paper for this exercise.
- Read the abstract.
- Analyse the abstract.
 - What is the context of the abstract?
 - What is the method of the abstract?
 - What is the result of the abstract?
 - What is the discussion of the abstract?
 - What is the conclusion of the abstract?

Today's Exercise #2

- When you finish this exercise,
 - tell us which paper you have chosen,
 - tell us the result of your analysis.

Next week

- Next week, we will have two oral presentations.
- Who are the speakers next week?
- Is your preparation OK?
 - If you have finished reading the chapter and are making presentation slide, that's good.
 - If you are still reading the chapter, check out how much more things you need to do before the oral presentation.
- Your oral presentation has a big impact to your grade.
- If you have any difficulty, come and talk to me.

Next week

- You need to ask at least one question next week.
- If it is not easy for you to ask a question, ask a very simple question.
 - for example, ask the meaning of an English word.
 - What is the meaning of the word “opaque”?
 - for example, ask the meaning of a technical term.
 - What is “photosphere”?
 - What is “differential rotation”?

Next week

- If you are the first speaker next week, come to the classroom at 9:45 and set up your computer.
 - Start your talk at 10:00.
- If you are not the first speaker next week, come to the classroom 2-3 min before 10:00.
 - Do not miss the beginning part of the talk.
- We start the talk at 10:00.

Next week

- I'll ask very basic questions about math/physics/astronomy.
- If you are a speaker next week, study about basic technical terms before your talk.

Submission of today's exercises

- How to submit your answers to the exercises?
- Go to the web page of the course.
 - https://s3b.astro.ncu.edu.tw/seminar1_202209/
- Find a link to the Google Forms.
- Make a single PDF file that contains answers for both Exercise #1 and #2.
- Upload the file.
- Deadline: 10:00 on 12/Oct/2022