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*Open Access and*  
**The Open Journal of  
Astrophysics**

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# The Academic Publishing Industry



The Open Journal of  
Astrophysics

- Global revenues of the academic publishing industry amount to about, €22 billion per annum.
- This *exceeds* the annual global revenues of the recorded music industry.
- Profit margins for these publishers are much larger (up to 45%) than Apple, Google and BMW.
- The worst offenders are the `Big Four': Elsevier, Springer, Wiley and Taylor & Francis.

# Why Open Access?



The Open Journal of  
Astrophysics

- Most research in astrophysics (and other “blue skies” subjects) is funded by the taxpayer, so the public *should* have access to it.
- Open science is *better* science
- Does Open Access Publishing go far enough?
- Everything needed to reproduce the results should be made public: data, analysis tools, the lot...

# Open Access: Green, Gold & Diamond



The Open Journal of  
Astrophysics

- “Gold” = free to readers, usually paid for by authors (via “Author Processing Charge”) – this is often large, in order to maintain revenue in the absence of subscription income.
- “Green” = “free” to authors and readers (e.g. arXiv, institutional repositories, etc) self-archiving (possibly) after an embargo period
- “**Diamond**” = immediately free to authors and readers.
- Open Access of some form is mandatory

arXiv is a free distribution service and an open-access archive for 1,943,808 scholarly articles in the fields of physics, mathematics, computer science, quantitative biology, quantitative finance, statistics, electrical engineering and systems science, and economics. Materials on this site are not peer-reviewed by arXiv.

**Subject search and browse:**

Physics

Search

Form Interface

Catchup

**News**

Celebrating [arXiv's 30th anniversary!](#) 1991-2021.

Read about recent news and updates on [arXiv's blog](#). (View the former "what's new" pages here). Read [robots beware](#) before attempting any automated download.

**COVID-19 Quick Links**

See COVID-19 SARS-CoV-2 preprints from

- [arXiv](#)
- [medRxiv and bioRxiv](#)

**Important:** e-prints posted on arXiv are not peer-reviewed by arXiv; they should not be relied upon without context to guide clinical practice or health-related behavior and should not be reported in news media as established information without consulting multiple experts in the field.

**Physics**

- [Astrophysics \(astro-ph new, recent, search\)](#)  
includes: [Astrophysics of Galaxies](#); [Cosmology and Nongalactic Astrophysics](#); [Earth and Planetary Astrophysics](#); [High Energy Astrophysical Phenomena](#); [Instrumentation and Methods for Astrophysics](#); [Solar and Stellar Astrophysics](#)
- [Condensed Matter \(cond-mat new, recent, search\)](#)  
includes: [Disordered Systems and Neural Networks](#); [Materials Science](#); [Mesoscale and Nanoscale Physics](#); [Other Condensed Matter](#); [Quantum Gases](#); [Soft Condensed Matter](#); [Statistical Mechanics](#); [Strongly Correlated Electrons](#); [Superconductivity](#)
- [General Relativity and Quantum Cosmology \(gr-qc new, recent, search\)](#)
- [High Energy Physics - Experiment \(hep-ex new, recent, search\)](#)
- [High Energy Physics - Lattice \(hep-lat new, recent, search\)](#)
- [High Energy Physics - Phenomenology \(hep-ph new, recent, search\)](#)

# Why Academic Journals?



The Open Journal of  
Astrophysics

- Most new astrophysics research has been available via “Green” Open Access via the arXiv for 30 years.
- Running costs are ~\$1M per annum: this amounts to an average of ~\$11 per paper.
- Who looks at journals?
- Why not just referee the arXiv submissions?
- Hence, the *arXiv overlay journal*.



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# The Open Journal of Astrophysics



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<http://astro.theoj.org>



# The Open Journal of Astrophysics



The Open Journal of  
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- **OJAp is a free, open access, community-reviewed “overlay journal” based on the arXiv, i.e. DIAMOND Open Access.**
- **Published by Maynooth Academic Publishing**
- **Annual running cost ~\$1000!**
- **Also thanks to: The Gordon & Betty Moore Foundation, the arXiv, NASA/ADS, Arfon Smith and Chris Lintott.**
- **See also, e.g., the Journal of Open Source Software (JOSS).**

# The six sections of astro-ph...



The Open Journal of  
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1. **astro-ph.GA - Astrophysics of Galaxies.**
2. **astro-ph.CO - Cosmology and Nongalactic Astrophysics.**
3. **astro-ph.EP - Earth and Planetary Astrophysics.**
4. **astro-ph.HE - High Energy Astrophysical Phenomena.**
5. **astro-ph.IM - Instrumentation and Methods for Astrophysics.**
6. **astro-ph.SR - Solar and Stellar Astrophysics.**

# What do we do?



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**Peer Review – usually two referees**

- **Publish – create overlay, issue a DOI and register metadata with CrossRef.**
- **We can now host additional files, e.g. catalogues or software.**
- **Liaise with, e.g., NASA/ADS and Inspire to ensure papers are listed.**

# What do we do differently?



The Open Journal of  
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- **Online only**
- **We charge no fee to either author or reader.**
- **You (the author) keep copyright to your work.**
- **From acceptance to publication takes a few hours.**
- **We curate the paper (store in private repository)**
- **We promote papers on Twitter (@OJ\_Astro) & Facebook (facebook.com/OpenJAstrophysics)**

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# Some statistics...



The Open Journal of  
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- **39 papers published (to September 15 2021)**
- **896 citations (average of 23.0 per paper)**
- **Approximately 40% acceptance rate**
- **No Impact Factor (yet) - IF for year N uses N-1 and N-2 and is published in N+1.**

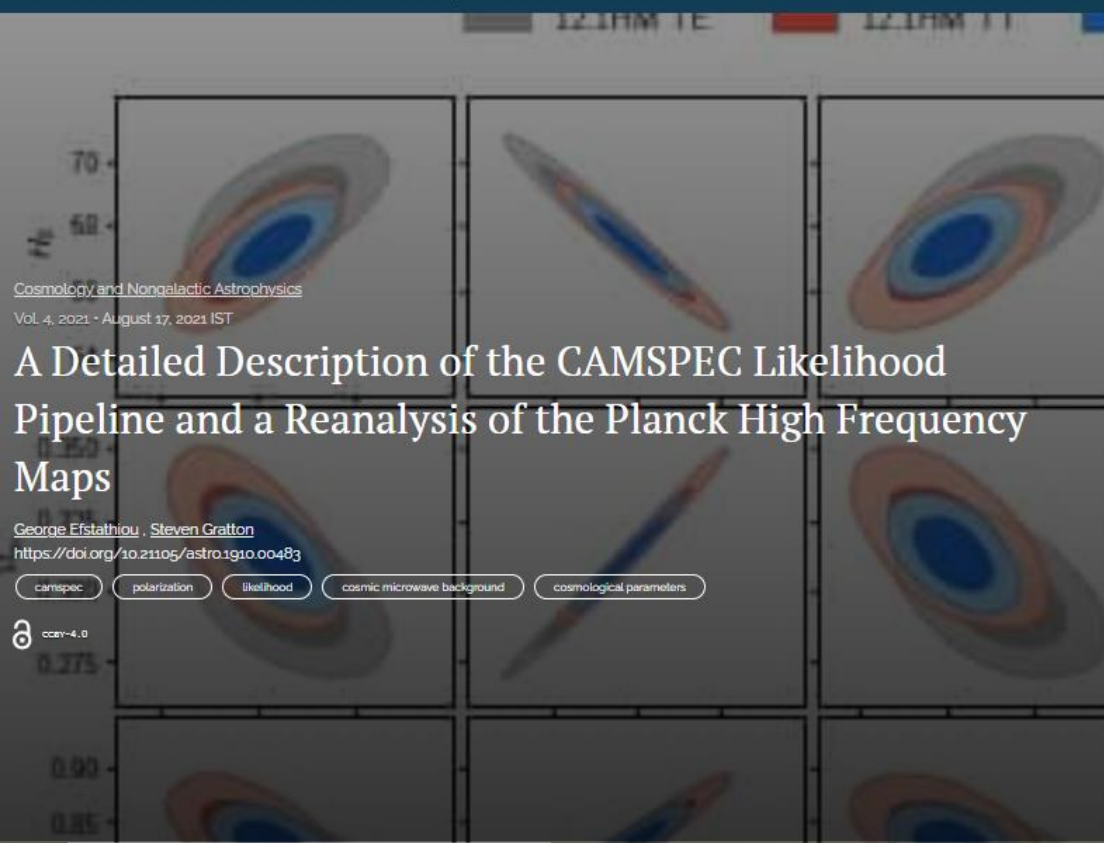
# The future?



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**Preparation for increasing numbers (automation)**

- **We have applied for listing in the Science Citation Index, WoS etc.**
- **Our first Journal Impact Factor (JIF) will appear next year (2022) - average citations per paper in 2021 for papers published in 2019 & 2020.**



Cosmology and Nonrelativistic Astrophysics  
Vol. 4, 2021 - August 17, 2021 IST

# A Detailed Description of the CAMSPEC Likelihood Pipeline and a Reanalysis of the Planck High Frequency Maps

George Efstathiou, Steven Gratton  
<https://doi.org/10.21105/astro.1910.00483>

camspec polarization likelihood cosmic microwave background cosmological parameters



## Abstract

[Read article at ArXiv](#)

This paper presents a detailed description of the CamSpec likelihood which has been used to analyse Planck temperature and polarization maps of the cosmic microwave background since the first Planck data release. We have created a number of likelihoods using a range of Galactic sky masks and different methods of temperature foreground cleaning. Our most powerful likelihood uses 80 percent of the sky in temperature and polarization. Our results show that the six-parameter LCDM cosmology provides an excellent fit to the Planck data. There is no evidence for statistically significant internal tensions in the Planck TT, TE and EE spectra computed for different frequency combinations. We present evidence that the tendencies for the Planck temperature power spectra to favour a lensing amplitude  $A_L > 1$  and positive spatial curvature are caused by statistical fluctuations in the temperature power spectra. Using our statistically most powerful likelihood, we find that the  $A_L$  parameter differs from unity at no more than the 2.2 sigma level. We find no evidence for anomalous shifts in cosmological parameters with multipole range. In fact, we show that the combined TTTEEE likelihood over the restricted multipole range 2-800 gives cosmological parameters for the base LCDM cosmology that are very close to those derived from the full multipole range 2-2500. We present revised constraints on a few extensions of the base LCDM cosmology, focussing on the sum of neutrino masses, number of relativistic species and the tensor-scalar ratio. The results presented here show that the Planck data are remarkably consistent between detector-sets, frequencies and sky area. We find no evidence in our analysis that cosmological parameters determined from the CamSpec likelihood are affected to any significant degree by systematic errors in the Planck data (abridged).



# To support the Open Journal of Astrophysics...



The Open Journal of  
Astrophysics

- **Please consider submitting papers! – if it is appropriate for the astro-ph section of the arXiv then we will consider it!**
- **The rate-limiting step in the publishing process is refereeing, so please take any refereeing requests seriously – this is not a predatory journal!**
- **Support the arXiv!**

**Submissions for the journal are open**

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