

Postgraduate Application Form



Evcimen, Mr Kaan

Course

MASt in Astrophysics (MASAS)

Department

Institute of Astronomy

Course start date

01 Oct 2024 (MT 2024)

Date submitted

13 Sep 2023

Mode of study

Full Time

PUF

No

Academic History

Oct 2019 - Nov 2022

Bachelor of Arts in Natural Sciences, Astrophysics (Institute of Astronomy) - All or mostly full-time \*

2.i

University of Cambridge (*United Kingdom*)

Immigration

Nationality

United Kingdom (1st)

Country of birth

United Kingdom

Currently ordinarily resident

United Kingdom

Country of birth is ordinary residence since birth

Yes

Estimated fee status

Home

Visa

Not required

Language

Not required

Scholarships

Apply for funding

Yes

Apply for Cambridge Trust

Yes

Apply for Gates Cambridge

No

\* Document not uploaded at the point of submission  
\*\* Other university

Curriculum Vitae

Uploaded

Career Goals

247/1000 chars

After completing my master's degree, I will definitely move on to a PhD in astrophysics and subsequently go into full time research. I am currently broadly interested in the study of black holes, dark matter/energy, and galaxy formation/evolution.

Additional Information to Support Application

0/1000 chars

Course Specific Questions

Core - statement of interest

I am deeply passionate about astrophysics, driven by the profound connection between mathematics and the cosmic narrative. My undergraduate years at the University of Cambridge provided me with a strong foundation in mathematics and physics. I specialised in astrophysics in my third year and found myself immediately captivated by the challenge of unifying relativity and quantum mechanics, seeking the ultimate theory of "quantum gravity." A highlight of my final year was putting together an extended academic research essay on 'The Role of the Star Forming Environment in Regulating the Formation of Planetary Systems', supervised by Professor Cathie Clarke. This involved discussing the consequences of photoevaporation and tidal effects on the protoplanetary discs of young stars, then going further to investigate how initial conditions (i.e., host star metallicity) can shape planetary formation. Since graduating (June 2022), I have been keeping up with physics by participating in research, interning at both MIT and Caltech. With my MIT supervisors (Dr. Aaron Smith and Dr. Paola Domínguez Fernández), I have been working with multidimensional simulation data to obtain information about variables of interest during the early universe (reionization era). At Caltech, I have been working with Professor Lynne Hillenbrand on mathematically modelling the flux profiles of young stars which have recently experienced accretion outbursts in their protoplanetary discs.

Core - reasons for applying

I am applying to this course as, having already completed the BA in astrophysics at the Institute of Astronomy, I am very aware of how well this programme sets students up to a) advance their astrophysical expertise and b) indulge in career of research in astrophysics after graduating under the guidance of the top academics in the field.

Astronomy - Extra Materials WP

Uploaded

Application Information

Academic Awards

No awards entered

Employment History		
Aug 2023 -	Cyber Security Engineer	Sky (London, United Kingdom)
Jun 2022 - Sep 2022	Technology Summer Intern	HSBC (London, United Kingdom)
Mar 2023 -	Research Intern, Cosmology	Massachusetts Institute of Technology (Cambridge, MA [remote], United States)
May 2023 -	Research Intern, Stellar Astrophysics	Caltech (Pasadena, CA [hybrid], United States)
Other Applications Made		
No other applications entered		

Personal Information

Identifying Information

Full name

Evcimen, Mr Kaan

Date of birth

18 May 2001

Previous name

Legal gender

Male

Contact

Email

ke323@cantab.ac.uk

Phone

07908467045 (1st)

Skype address

Contact address

Flat 2 7A, Tufnell Park Road, London, Greater London, N7 0PG, United Kingdom

Home address

Same as contact address

Valid until

Dependants

Partner

WILL NOT bring partner

Child

WILL NOT bring children

Disability

Disability

Yes  
Learning difference such as dyslexia, dyspraxia, or AD(H)D  

Further information

Adjustment for Interview

Adjustment required

No  
Details

College Preferences

College

Trinity College (1st)  
Trinity Hall (2nd)

Current Membership

College

Trinity Hall

Visa Requirement

Not required

Study Visas

Visa not entered

Funding Application

Cambridge Trust

You will automatically be considered by the Trust for any awards for which you are eligible.

No identified awards.

Gates Cambridge Scholarships (Overseas)

Apply for Gates Cambridge

No

Personal Statement

0/3000 chars

Harding Scholarship

Mastercard Foundation

UKRI

Department Funding

College Funding

Based on the information you have provided, you are eligible to apply for these awards.

Girton Joyce Biddle Scholarship

You have applied for Girton Joyce Biddle Scholarship

## Sheepshanks Studentship in Astronomy

You have applied for Sheepshanks Studentship in Astronomy

## Wolfson College & Rowan Williams Cambridge Studentship

Separate application form

To be considered for this studentship, applicants should complete and return a separate application form to the Trust, which has been designed to assist the Trust in the identification of eligible candidates. The Rowan Williams Cambridge Studentship application form is available [here](#).

Notes for applicants:

The Rowan Williams Cambridge Studentships are not available for courses offered by the Institute of Continuing Education, premium rate courses offered by the Judge Business School (including MBA, MFin, EMBA etc.) or for courses where the fees are charged at the higher Clinical rate.

Selection panels will assess applications taking regard of the severity of barriers faced to pursuing higher education at the University of Cambridge.

## Your Funding

### Funding Sources

*No funding sources entered*

### Declaration

The information you have provided forms the legal basis of your application to the University of Cambridge. We reserve the right to refuse admission in the event of any misrepresentation by you. Submission of an application does not imply an offer of admission.

- The University of Cambridge, the Cambridge Colleges, the Gates Cambridge Trust and the Cambridge Commonwealth, European and International Trust (and their collaborators) will use your personal information for the purpose of processing your applications for admission and funding and deciding whether to offer you a place for the course you have applied for. For further information on the use of your personal information during the application process, please see [How we use your personal information \(for applicants\)](#).
- I certify that all the information given in this application is complete and accurate. I also understand that if I have given false or misleading information, the University of Cambridge will not admit me as a Postgraduate student and may take legal action against me.
- I certify that I am the original and sole author of all work submitted as part of this application, except where clearly indicated otherwise.
- I understand that if my application is unsuccessful, the papers relating to it will be destroyed and cannot be returned.

**I confirm that I have read, understand and agree to the above declarations.**

Postgraduate Application Form  
(Supplementary)



Evcimen, Mr Kaan

Course	MASt in Astrophysics (MASAS)	Date submitted	13 Sep 2023
Department	Institute of Astronomy	Mode of study	Full Time
Course start date	01 Oct 2024 (MT 2024)		

Academic History

Oct 2019 - Nov 2022	Bachelor of Arts in Natural Sciences, Astrophysics (Institute of Astronomy)	2.i	University of Cambridge ( <i>United Kingdom</i> )
CAN'T UPLOAD	Other (please outline below) It says that my transcript pdf is encrypted and cannot be merged. However, the institute should have a copy of my transcript as I have already studied there. If not, I am happy to provide it via email :)		

\*\* Other university

# Academic reference for Mr Kaan Evcimen

## MASt in Astrophysics

### Referee Details

Name	Professor Cathie Clarke	Job title	Professor of Astrophysics
Email	cclarke@ast.cam.ac.uk	Department	University of Cambridge   Institute of Astronomy
Phone		Institution	Institute of Astronomy
Relationship	Supervisor and essay adviser	City	Cambridge, UK
Known for	since October 2021	Country	United Kingdom

### Reference

Academic ranking	Not in any of the above categories 39
Student potential	Distinctly original/creative/independent of thought
Course suitability	Exceptionally Suitable

Reference provided as uploaded file. Please see the next page.



UNIVERSITY OF  
CAMBRIDGE

Institute of Astronomy

**Professor Cathie Clarke FRS**  
*Professor of Theoretical Astrophysics*

November 1, 2023

Dear Colleagues,

I am writing in very strong support of Kaan Evcimen for a place on the MAST in Astrophysics at the University of Cambridge. I know Kaan well because I supervised him for my course on Stellar Dynamics which formed part of his third year course in Astrophysics; I also advised him for his research essay on environmental effects on protoplanetary discs.

Kaan is an unusual student who was on a steeply rising trajectory during his third year. While he had only performed moderately in his second year exams. (a lower Second) it soon became obvious that he was engaging with the course in a deep and self-motivated way; right from the start of the year he was sending the lecturers thoughtful and insightful questions. Likewise he took every opportunity to discuss his reading for his literature review with me and was tenacious in making sure he achieved a high level of understanding before setting pen to paper.

I supervised Kaan in the first term and then met with him again in the examination term to have a final revision supervision. I was very pleasantly surprised by his development over the intervening months. While he had struggled a bit in the first term, I found that by the time he came to tackle exam. questions on this material he was producing answers of a caliber comparable with the best students – I was very impressed! He then went on to perform well in the examinations, obtaining a high 2.1 (67%). This qualified him to continue with the Cambridge MSci year (Part III Astrophysics) but Kaan decided to graduate with a BA at this point. I think that to some extent his confidence had not caught up with his level of achievement and he hesitated to take a step that was being taken by others with considerably lower attainment levels. But by pausing his studies at this point, it also allowed him to appraise what were the aspects of his studies to date that most captured him. His present application for this MSc course has thus been very carefully considered.

I have no doubt that Kaan has the intellectual qualities and commitment to make an outstanding success of the MAST course. His time away from academe has sharpened his wish to pursue his astronomical interests and I would expect his trajectory to continue to rise. Since leaving Cambridge he has been very proactive in seeking research internships and I think he would be in a good position to hit the ground running as he embarked on further graduate study. I recommend him very strongly.

Yours Sincerely,

*C. J. Clarke*

Professor Cathie Clarke



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<https://www.ast.cam.ac.uk/people/cathie.j.clarke>



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<https://www.ast.cam.ac.uk/people/cathie.j.clarke>

Academic reference for Mr Kaan Evcimen

MASt in Astrophysics

Referee Details

Name	Professor Lynne Hillenbrand	Job title	Professor of Astrophysics
Email	lah@astro.caltech.edu	Department	Caltech   Department of Astronomy and Astrophysics
Phone		Institution	Department of Astronomy and Astrophysics
Relationship	research mentor	City	Pasadena, CA, US
Known for	since early spring of 2023	Country	United States

Reference

Academic ranking	Among the top 20% in year (i.e., in the top 8 if the group size was 40) small number of students in comparison group
Student potential	Distinctly original/creative/independent of thought
Course suitability	Very Suitable

Reference provided as uploaded file. Please see the next page.

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December 4, 2023

## Letter of reference for Kaan Evcimen

University of Cambridge  
Cambridge, UK

Dear Admissions Committee:

I write regarding *Mr Kaan Evcimen*, a young researcher with notable potential who is seeking admission to a Master's degree program en route to a Ph.D. He has applied for your MAST in Astrophysics. I have known Kaan since the spring of 2023, when he contacted me about doing a remote research project under my supervision.

Based on his previous experience in the area of protoplanetary disks and young star clusters with Cathie Clarke, I decided to pitch him a project on the lightcurves of outbursting accretion disks, specifically FU Ori type systems in which Cathie and I have both been interested over the years. Kaan and I began to correspond about the need for an empirical framework for characterizing FU Ori lightcurve shapes, both during the rise phases of a few months to years, and the decay phases of years to decades (perhaps centuries). The mechanics of the project were relatively straightforward for a competent student, so I thought the tasks would suit a remote worker who was also balancing school and another research activity.

Kaan's progress was so impressive that I invited him to visit Caltech for two weeks so that we could focus together on moving the project along. During this time, he worked up a generalized fitting scheme for the rise and decay of photometric lightcurves. The FU Ori lightcurves demonstrate great diversity, which means that simple schemes can not be blithely applied. Furthermore, the unique dataset (NEOWISE) consists of only sparsely sampled photometric data points over a limited duration of the full event, which presents some challenge to standard fitting techniques.

In the end, we have a reliably functioning framework for the quantitative analysis of FU Ori lightcurves, with the main requirement being self-consistent determination of outburst amplitudes and timescales across objects. Ultimately such quantification will be used to attempt to distinguish between proposed outburst mechanisms, which include more impulsive events like binary encounters or rapid infall, to longer duration instabilities of various flavors arising in the disks.


Over the fall of 2023 Kaan has continued to work on the analysis enabled by his code development. We plan to submit a paper sometime in the late January to February time frame. Kaan has been proactive in keeping the project momentum going.

I have worked with several tens of SURF (Summer Undergraduate Research Fellowship) students over the years, only a few of whom have been from institutions other than my own Caltech. While the situation with Kaan was not formally a SURF, he accomplished as much in a two week visit as some students I have worked with manage over ten weeks. The code he delivered was complete and well-documented. The thought he put into the project goals, and the discussions he brought to me regarding the appropriate functions for us to try (and those we could abandon because they were specific cases of other functions) illustrate a student with deep consideration.

Although I do not know much about his academic side, Kaan is a quick study. As noted above, however, he does not rush into implementation. Many students will just code and produce plots – because they can – but that is not usually the route to understanding, and in fact is often the path towards confusion. Kaan admirably studies the situation, plans his attack, and then methodically carries out the steps, making sure everything is consistent with logic and expectation, and calling out cases where something does not make sense or the assumptions may be leading us astray.

Finally, Kaan is a truly genuine and pleasant human being, with a compelling personal story. He is an astronomy enthusiast and would do well in any department that prizes public engagement and outreach. Kaan Evcimen's love of learning, aptitude, skill, and persistence bode well for success at the Master's level.

Sincerely,

A handwritten signature in cursive script, reading "Lynne A. Hillenbrand".

Lynne A. Hillenbrand  
Professor of Astronomy

We thank you for your time spent taking this survey.  
Your response has been recorded.

Below is a summary of your responses

[Download PDF](#)

Institute of Astronomy

**Important: please read before continuing**

In this form, you will be asked a series of questions to help us gather information about your **previous** university study. The questions relate to your previous study, not the course that you are currently applying to. Depending on department procedures, relevant contextual data may have a small impact on some funding opportunities, so if your application is eligible for University funding, we encourage you to fill in this form.

You will be given the opportunity to tell us about any events or circumstances that have had an impact on your education, and limited your ability to perform in your studies. **You do not need to provide personal or detailed information about these circumstances**, we only ask you give details of the **impact** that they have had on your studies.

Please only provide the information that you are asked for in the form, and leave the text box blank if you cannot/ do not wish to respond. You should only provide information in the form if you feel comfortable to do so. Your application will not be disadvantaged if you choose not to respond to the questions, and your academic merit will be assessed based on the information you provide in other parts of the application. Once you have completed this form, you will need to download a PDF copy of your answers to upload to the [applicant portal](#). You will be given the option to download the PDF at end of the form, and you will also receive a copy by email. This

the PDF at end of the form, and you will also receive a copy by email. This will be sent to you as soon as the form is submitted.

Your first name:

Kaan

Your surname:

Evcimen

Your email address:

ke323@cantab.ac.uk

Confirm your email address:

ke323@cantab.ac.uk

**The following questions relate to your experience of studying at undergraduate/ bachelor's level.**

Your undergraduate/ bachelor's institution:

University of Cambridge

Did you undertake your degree full-time or part-time?

☒ **Full-time**

☐ Part-time (for any part of the degree)

When choosing your university, were there any factors other than grades that you felt limited your choice of institution?

*e.g. not being able to live away from home, financial considerations, concerns about fitting in*

N/A

Characters remaining: 997

Did you have any essential regular commitments that impacted the extent to which you could dedicate yourself to your studies? If so, please explain the impact of this on your studies.

*e.g. caring responsibilities, being a single parent or guardian, employment during studies*

N/A

Characters remaining: 997

Did you experience any serious disruption to your studies that prevented you from studying for at least 3 months over the course of a year? If so, please explain the impact of this on your studies. It is not necessary to provide details about the nature of the disruption.

*e.g. illness, bereavement*

N/A

Characters remaining: 997

**The following questions relate to your previous experience of university study at all levels (undergraduate and/or postgraduate).**

Some students get off to a slower start than others in their studies, and later show an upward progression in their marks.

Were there any circumstances that you feel initially inhibited your academic performance? If so, please provide details of the impact on your studies, and the change in circumstances that allowed you to improve your performance.

N/A

Characters remaining: 997

Please use the space below to let us know about anything else that has had an impact on your studies or educational pathway. You might like to explain any incomplete qualifications or course changes.

N/A

Characters remaining: 997

Powered by Qualtrics [↗](#)

# Kaan Evcimen

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osnapitzkaan@gmail.com // kaaan@mit.edu  
kaanevcimen.com

## Research Interests

I am broadly interested in the study of black holes, dark matter/energy, and galaxy formation/evolution. My previous research involves working with cosmological simulations ([thesan-project.com](https://thesan-project.com)) and stellar modelling.

## Education

**University of Cambridge** 2019 - 2022  
*BA (Hons), Astrophysics*  
Grade: 2.i (68%)

**City and Islington College** 2017 - 2019  
*A-levels: Mathematics, Further Mathematics, Physics*  
Grade: A\*A\*A\*

## Research Experience

**Caltech** May 2023 - present  
*Mathematically modelling the flux profiles of young stars*  
Supervised by Professor Lynne Hillenbrand

- Created code which analyses and fits light curves from various datasets (NEOWISE, Gaia, and ZTF) to theoretical models
- From the modelled equations, we can then extract key characteristics (i.e., timescales and amplitudes) to help understand the variability in these stellar systems

**Massachusetts Institute of Technology** Mar 2023 - present  
*Analysing primordial magnetic fields in cosmological simulations*  
Supervised by Dr. Aaron Smith and Dr. Paola Domínguez Fernández

- Working with multidimensional simulation data (THESAN) to obtain information about variables of interest during the early universe (reionization era)

**University of Cambridge (Part II Astrophysics Project)** Oct 2021 - Jun 2022  
*The role of the star forming environment in regulating the formation of planetary systems*  
Supervised by Professor Cathie Clarke

- Studied the consequences of photoevaporation and tidal effects on the protoplanetary discs of young stars
- Conducted further analysis on how initial conditions (i.e., host star metallicity) can shape planetary formation

## Publications

Hillenbrand, L.A. and **Evcimen, K.**; 2024, *AJ*, in preparation:  
“A heuristic approach to the light curves of young star outbursters”

**Evcimen, K.**, Smith, A., Domínguez, P., et al.; 2024, *MNRAS*, in preparation:  
“The THESAN project: evolution of magnetic fields and rotation measure during the reionization era”

<b>Talks</b>	“Understanding the light curves of young star outbursters” <i>Department of Astronomy and Astrophysics, Caltech</i>	Aug 2023
	“The Davisson-Germer experiment - an accidental breakthrough?” <i>Cavendish Laboratory, University of Cambridge</i>	Mar 2021
<b>Relevant Modules</b>	Physics: Quantum Mechanics, Relativity, Structure and Evolution of Stars, Stellar Dynamics and Galaxies, Statistical Physics, Astrophysical Fluid Dynamics, Topics in Astrophysics, Cosmology	
	Mathematics: Advanced Calculus, Advanced Differential Equations, Group Theory, Number Theory, Statistics, Tensors, Fourier Analysis, Matrix Theory	
<b>Computational Skills</b>	<ul style="list-style-type: none"> <li>• Programming languages: Python, MATLAB, C++, Javascript, L<sup>A</sup>T<sub>E</sub>X</li> <li>• Web development: HTML, CSS</li> </ul>	
<b>Organisations</b>	Institute of Physics (IoP) Cambridge University Astronomy Society (CUAS)	