Postgraduate Application Form

UNIVERSITY OF CAMBRIDGE
Postgraduate Admissions Office

Zuo, Mr Zihao

Course	MASt in Astrophysics (MASAS)	**Date submitted**	05 Dec 2023
Department	Institute of Astronomy	**Mode of study**	Full Time
Course start date	01 Oct 2024 (MT 2024)	**PUF**	No

Academic History

Aug 2021 - May 2024 *(Not yet obtained)*	Bachelor of Science in Astronomy, Physics, Math (Eberly College of Science) - All or mostly full-time	3.99/4	Pennsylvania State University (*United States*)
	Bachelor of Science in Applied Mathematics (Science and Engineering) - All or mostly full-time	Unknown	Chinese Univ. of HK (Shenzhen) ** (*China*)

Immigration

Nationality	China (1st)
Country of birth	China
Currently ordinarily resident	China
Country of birth is ordinary residence since birth	Yes
Estimated fee status	Overseas
Visa	Required
Visa type	I do not currently have a UK visa

Language

I have recently studied for 3 years (ending within the last 2 years) at a level equivalent to a UK Bachelor degree in a list A country.

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

982/1000 chars

After finishing the MASt in Astrophysics studies, my short-term career goal is to spend three to six years pursuing a Ph.D. degree in Astrophysics. Upon completing my Ph.D. studies, I plan to hold a post-doctoral researcher position at universities, observatories, or other reputable research institutions for two to three years. Afterward, I will apply for faculty positions at research universities. I understand that applying for faculty positions will be extremely competitive. If unable to secure a faculty position, I would explore alternatives, such as pursuing another post-doctoral researcher position to enhance my competitiveness for future faculty opportunities. Alternatively, I would consider transitioning into the industry, where my research skills would make me a qualified data analyst. In conclusion, my long-term career goal is to contribute to the astronomical society as a professional researcher, with the flexibility to explore opportunities in the industry.

Additional Information to Support Application

768/1000 chars

Outside the classroom, I am active in serving the community. I served as the head of the academic department of the Astronomy Society of the Chinese University of Hong Kong (Shenzhen) and regularly organized popular science lectures and star-gazing events. I am also a founding member of the Lumos Community, a non-profit organization, of the Chinese University of Hong Kong (Shenzhen). At Lumos, I served as the head of the planning department to help organize a voluntary teaching program to help children in impoverished areas. The voluntary teaching program was founded by the SF Charity Foundation, which is supported by SF Express, one of the largest logistics companies in China. I value all opportunities to use my passion and expertise to serve the community.

Course Specific Questions

Core - statement of interest

My past experiences have shaped my research interest in the formation and evolution of (super-)massive black holes and galaxies. During my undergraduate studies at Pennsylvania State University, I was supervised by Prof. William Nielson Brandt to study the X-ray emission from distant quasars. More specifically, I studied the X-ray enhancements of quasars that harbor strong relativistic jets at redshifts 4 to 7. This X-ray excess may be attributed to the increased energy density of the cosmic microwave background (CMB), with CMB photons being inverse Compton upscattered to X-rays by relativistic electrons accelerated by the jet. In this project, I learned to analyze X-ray observational data and prepared the manuscript of a research paper. My first-authored paper, titled “The X-ray enhancements of radio-loud quasars at high redshift: New results at z=4--7” has been submitted to MNRAS. I presented my research at the AAS 240th meeting and the 2023 East-Asia AGN workshop. In addition to astronomy, I am also pursuing B.S. degrees in mathematics and physics to prepare myself for the theoretical aspects of astronomy. The advanced courses in physics, mathematics, and computer science laid a solid foundation for my future studies. I believe the Master of Advanced Studies in Astrophysics at the University of Cambridge will strengthen my theoretical foundation, expose me to more research opportunities, and equip me with skills crucial for my future success as a researcher.

Core - reasons for applying

The University of Cambridge is a world leader in astronomical research, with a vibrant research community and a great historical heritage. The Master of Advanced Studies (MASt) in Astrophysics will provide me with a unique opportunity to engage in a series of advanced courses in astrophysics covering a broad range of topics, such as black holes, general relativity, cosmology, gravitational waves, etc. With a research background dominated by observational astronomy, I am eager and well-prepared to explore

	theoretical astrophysics. I am also excited about the research component of the MASt program, where I can work with world leaders in astronomical research to enrich my research experiences. I believe the MASt program will strengthen my academic background and broaden my choices when applying to Ph.D. programs. Besides, I was fascinated by the historical atmosphere at Cambridge when I first visited Cambridge at the age of 15. Studying at Cambridge will be a truly memorable experience.
Astronomy - Extra Materials WP	Uploaded

Application Information

Academic Awards

Mercedes T. Richards Memorial Scholarship in Astronomy and Astrophysics	Academic Excellence	30 Nov 2023	£1,335.00
John and Elizabeth Holmes Teas Scholarship	Academic Excellence	31 Aug 2023	£15,163.00
Erickson Discovery Grant	2022 Summer Research	30 Jun 2022	£2,793.00
The President Walker Award	Academic Excellence	31 Mar 2022	
Academic Performance Scholarship	Academic Excellence	31 Aug 2020	£2,246.00

Employment History

May 2022 -	Research Assistant	Pennsylvania State University (*State College, United States*)
Jan 2023 -	Grader (Department of Mathematics)	Pennsylvania State University (*State College, United States*)

Other Applications Made

Ph.D. in Physics	Caltech (*United States*)
Ph.D. in Astronomy	University of Arizona (*United States*)
Ph.D. in Astronomy	Johns Hopkins University (*United States*)
Ph.D. in Astronomy	MPE (*Germany*)
Ph.D. in Astronomy	University of Michigan (*United States*)

Personal Information

Identifying Information

Full name	Zuo, Mr Zihao	**Date of birth**	17 Oct 2000
Previous name		**Legal gender**	Male

Contact

Email	zihaozuoastro@gmail.com	**Phone**	+15822039140 (1st)
Skype address			+8613951921706 (2nd)
Contact address	1335 Dreibelbis Street, Apt 408, State College, Pennsylvania, 16801, United States	**Home address**	152 Feng Huang Xi Street, 1-206, Nanjing, Jiangsu, 210036, China
Valid until	10 May 2024	**Valid until**	

Dependants

Partner	**WILL NOT** bring partner	**Child**	**WILL NOT** bring children

Disability

Disability	No
Further information	

Adjustment for Interview

Adjustment required	No
Details	

College Preferences

College	No College preference

Current Membership

College	Not College member

Visa Requirement

Visa type	I do not currently have a UK visa

Study Visas

Applicant previously **HAS NOT STUDIED** in the UK

Visa not entered

Funding Application

Cambridge Trust

Here is a list of CT awards that you would like to be considered

Cambridge Masters Studentship
This award is available to all applicants who are pursuing Master's degrees (MASt included). I am eligible because I am applying for the MASt in Astrophysics program.

Cambridge Trust Scholarship (postgraduate)
I am eligible because I am an international student, and I am applying for the MASt in Astrophysics program.

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 at https://www.cambridgetrust.org/our-scholarships/highlighted-scholarships/rowan-williams-cambridge-studentship.
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.

香港中文大學（深圳）
THE CHINESE UNIVERSITY OF HONG KONG, SHENZHEN

LONGGANG • SHENZHEN • CHINA • TEL (0086) 0755 8427 3626 • FAX (0086) 0755 8427 3691

學業成績表
TRANSCRIPT OF ACADEMIC RECORD

Name: ZUO, Zihao | Chinese Name: 左子豪 | Gender: Male
Student ID No.: 119010499 | ID/Passport No.: 320106200010171212 | Date of Birth: 17 Oct 2000

Admitted in: Sep 2019
College: Muse College
School: School of Science and Engineering
Major/Programme: Mathematics and Applied Mathematics
Stream: Applied Mathematics
Mode of Study: Full-time

2019-20 Term 1

Course Code	Course Title	Units	Grade	% of A- and above
CHI1000	Chinese	3.0	A-	37.7
ENG1001	English Bridge Program (EBP)	3.0	A-	30.0
PED1001	Physical Education	1.0	A-	39.3
CHM1001	General Chemistry	3.0	A-	30.6
PHY1001	Mechanics	3.0	A	33.5
MAT1001	Calculus I	3.0	A-	29.1

Units Passed = 16.0 Term GPA = 3.756

2019-20 Term 2

Course Code	Course Title	Units	Grade	% of A- and above
ITE1000	Information Technology	1.0	P	N/A
ENG1002	English for Academic Purposes I	3.0	A	26.2
PED1002	Fitness and Health	1.0	P	N/A
GFN1000	In Dialogue with Nature	3.0	P	N/A
MAT1002	Calculus II	3.0	A-	29.7
CSC1001	Introduction to Computer Science: Programming Methodology	3.0	A-	38.6
CSC1002	Computational Laboratory	1.0	A	51.9
STA2001	Probability and Statistics I	3.0	A-	30.5

Units Passed = 18.0 Term GPA = 3.792

Honour(s)/Award(s): Dean's List 2019-20

2019-20 Summer Session

Course Code	Course Title	Units	Grade	% of A- and above
MAT2040	Linear Algebra	3.0	A	29.4
BIO1001	General Biology	3.0	A-	38.3

Units Passed = 6.0 Term GPA = 3.850

2020-21 Term 1

Course Code	Course Title	Units	Grade	% of A- and above
ENG2001	English for Academic Purposes II	3.0	A-	29.9
GEA2000	Modern Chinese History and Culture	3.0	W	36.8
MAT3007	Optimization	3.0	B+	31.4
STA2002	Probability and Statistics II	3.0	B+	32.7
MAT2006	Elementary Real Analysis	3.0	B+	35.3
PHY2001	Electricity and Magnetism	3.0	A	31.9

香港中文大学（深圳） 教务处

Invalid unless impressed with the Seal of the University. Issue Date: 30 Nov 2023

The maximum GPA attainable is 4.000

Explanatory Notes for Undergraduate Programmes

Grading System

Degree of BA, BBA, BEng, BSc:

Grade and Standard			Sub-divisions	Converted Points
A	Excellent	----------	A	4.0
A-	Very good	----------	A-	3.7
B	Good	----------	B+	3.3
			B	3.0
			B-	2.7
C	Fair	----------	C+	2.3
			C	2.0
			C-	1.7
D	Pass	----------	D+	1.3
			D	1.0
F	Failure	----------	F	0.0

Other designations in grading

I	Incomplete
IP	In progress
NR	Not yet graded
DI	Distinction
PA	Pass
FA	Failure
P	Pass
U	Failure
W	Withdrawn

For specified courses adopting distinction/pass/failure and pass/failure grading basis where other grades are not applicable, results counted towards the total number of units gained by a student but not counted in the calculation of the GPA.

Degree Classification

Degree of BA, BBA, BEng, BSc:

First Class Honours
Second Class Honours Upper Division
Second Class Honours Lower Division
Third Class Honours
Pass

Course Code and Sequence

The first three letters of the course code indicate the subject (e.g. BIO stands for Biology). Normally, full-time undergraduate courses are coded 1000 to 4999 and postgraduate courses, 5000 to 8999.

Total Course Load and Period of Study

Full-time undergraduate students are required to complete 120 units of courses in 4 years. Unit requirements and study periods may also differ for students admitted on advanced standing. Clinical Medicine programme has its specific study period and requirements for graduation.

Credit Transfer

Credits accepted for transfer from other institutions are shown as number of units recognized but not included in GPA calculations.

08/2023
Printed on FSC paper

RA 108953

香港中文大學（深圳）
THE CHINESE UNIVERSITY OF HONG KONG, SHENZHEN
LONGGANG • SHENZHEN • CHINA • TEL (0086) 0755 8427 3626 • FAX (0086) 0755 8427 3691

學業成績表
TRANSCRIPT OF ACADEMIC RECORD

Name: ZUO, Zihao | Chinese Name: 左子豪 | Gender: Male
Student ID No.: 119010499 | ID/Passport No.: 320106200010171212 | Date of Birth: 17 Oct 2000

2020-21 Term 1

Units Passed = 15.0 Term GPA = 3.520

2020-21 Term 2

Course Code	Course Title	Units	Grade	% of A- and above
MAT2002	Ordinary Differential Equations	3.0	B+	39.2
ENG2002S	English for Science & Engineering Communication	3.0	B+	30.1
MAT3253	Complex Variables	3.0	A	38.2
MAT3040	Advanced Linear Algebra	3.0	A-	37.5
MAT2007	Elementary Real Analysis II	3.0	B+	36.1

Units Passed = 15.0 Term GPA = 3.520

Honour(s)/Award(s): Dean's List 2020-21

2020-21 Summer Session

Course Code	Course Title	Units	Grade	% of A- and above
PHY3002	Electrodynamics	3.0	A	50.0
CSC3100	Data Structures	3.0	A-	34.2

Units Passed = 6.0 Term GPA = 3.850

2021-22 Term 1

Granted leave of absence in 2021-22 Term 1

2021-22 Term 2

Granted leave of absence in 2021-22 Term 2

********** Summary **********

	Total Units Passed	Cumulative GPA	Major GPA
CUHK(SZ)	76.0	3.679/4.000	3.660/4.000

****

Remarks:

Withdrawn from studies with effect from 26 August 2022

Major GPA is the grade point average across a list of Major courses defined by the School Board, as being most relevant to the student's Major.

Director of Registry Services

********** End of Transcript **********

Invalid unless impressed with the Seal of the University Issue Date: 30 Nov 2023

The maximum GPA attainable is 4.000

Explanatory Notes for Undergraduate Programmes

Grading System

Degree of BA, BBA, BEng, BSc:

Grade and Standard		Sub-divisions	Converted Points
A	Excellent	A	4.0
A-	Very good	A-	3.7
B	Good	B+	3.3
		B	3.0
		B-	2.7
C	Fair	C+	2.3
		C	2.0
		C-	1.7
D	Pass	D+	1.3
		D	1.0
F	Failure	F	0.0

Other designations in grading

I	Incomplete
IP	In progress
NR	Not yet graded
DI	Distinction
PA	Pass
FA	Failure
P	Pass
U	Failure
W	Withdrawn

For specified courses adopting distinction/pass/failure and pass/failure grading basis where other grades are not applicable, results counted towards the total number of units gained by a student but not counted in the calculation of the GPA.

Degree Classification

Degree of BA, BBA, BEng, BSc:

First Class Honours
Second Class Honours Upper Division
Second Class Honours Lower Division
Third Class Honours
Pass

Course Code and Sequence

The first three letters of the course code indicate the subject (e.g. BIO stands for Biology). Normally, full-time undergraduate courses are coded 1000 to 4999 and postgraduate courses, 5000 to 8999.

Total Course Load and Period of Study

Full-time undergraduate students are required to complete 120 units of courses in 4 years. Unit requirements and study periods may also differ for students admitted on advanced standing. Clinical Medicine programme has its specific study period and requirements for graduation.

Credit Transfer

Credits accepted for transfer from other institutions are shown as number of units recognized but not included in GPA calculations.

08/2023
Printed on FSC paper

RA 108954

SEE REVERSE FOR SECURITY AND VERIFICATION FEATURES

Undergraduate Official Transcript

Name: Zihao Zuo
Student ID: 950120799

Print Date: 11/18/2023

Zihao Zuo
1335 Dreibelbis St Apt 408
Apartment 408
State College, PA 16801-7567
United States of America

Beginning of Undergraduate Record

Fall 2021

Program: Science
Plan: Science (PMAJ) Pre-Major

Course		Description	Attempted	Earned	Grade	Points
ARCH	100	Arch and Ideas	3.000	3.000	A	12.000
ARTH	111	Anc to Med Art	3.000	3.000	A	12.000
ASTRO	291	Solar System	3.000	3.000	A	12.000
ECON	102	Microeconomic Analysis	3.000	3.000	A	12.000
STAT	414	Intro Prob Theory	3.000	3.000	A	12.000
STAT	484	Intro to R	1.000	1.000	A	4.000

			Attempted	Earned	GPA Units	Points
Term GPA	4.000	Term Totals	16.000	16.000	16.000	64.000
Transfer Term GPA		Transfer Totals	68.000	68.000	0.000	0.000
Combined GPA	4.000	Comb Totals	84.000	84.000	16.000	64.000

			Attempted	Earned	GPA Units	Points
Cum GPA	4.000	Cum Totals	16.000	16.000	16.000	64.000
Transfer Cum GPA		Transfer Totals	68.000	68.000	0.000	0.000
Combined Cum GPA	4.000	Comb Totals	84.000	84.000	16.000	64.000

Term Honor: Dean's List

Spring 2022

Program: Science
Plan: Science (PMAJ) Pre-Major

Course		Description	Attempted	Earned	Grade	Points
ASTRO	292	Distant Universe	3.000	3.000	A	12.000
ASTRO	496	Indep Studies	1.000	1.000	A	4.000
MATH	252	PARTIAL DIFF EQ	1.000	1.000	A	4.000
MATH	311W	Discrete Math	3.000	3.000	A	12.000
Course Attributes:		Writing Across the Curriculum				
MATH	403	Analysis I	3.000	3.000	A	12.000
PHYS	213	Fluids&Thermal Phy	2.000	2.000	A	8.000
PHYS	214	Wave Motion&Quan	2.000	2.000	A	8.000
PHYS	237	Intro Modern Phys	3.000	3.000	A	12.000

			Attempted	Earned	GPA Units	Points
Term GPA	4.000	Term Totals	18.000	18.000	18.000	72.000
Transfer Term GPA		Transfer Totals	0.000	0.000	0.000	0.000
Combined GPA	4.000	Comb Totals	18.000	18.000	18.000	72.000

			Attempted	Earned	GPA Units	Points
Cum GPA	4.000	Cum Totals	34.000	34.000	34.000	136.000
Transfer Cum GPA		Transfer Totals	68.000	68.000	0.000	0.000
Combined Cum GPA	4.000	Comb Totals	102.000	102.000	34.000	136.000

Term Honor: Dean's List

Fall 2022

Program: Science
Plan: Astronomy and Astrophysics (BS) Major
Subplan: Graduate Studies

Program: Science
Plan: Mathematics (BS) Major
Subplan: General

Course		Description	Attempted	Earned	Grade	Points
ASTRO	320	Obs Astro Lab	3.000	3.000	A	12.000
ASTRO	496	Indep Studies	2.000	2.000	A-	7.340
ASTRO	497	Special Topics	3.000	3.000	A	12.000
Course Topic:		Exoplanets and Data Sciences				
ASTRO	550	Hi Ener Astrophys	0.000	0.000	LD	0.000
MATH	455	Intro Num Anly I	3.000	3.000	A	12.000
PHYS	410	Intr Quant Mchs I	4.000	4.000	A	16.000
PHYS	419	Th Mechanics	3.000	3.000	A	12.000

			Attempted	Earned	GPA Units	Points
Term GPA	3.960	Term Totals	18.000	18.000	18.000	71.340
Transfer Term GPA		Transfer Totals	0.000	0.000	0.000	0.000
Combined GPA	3.960	Comb Totals	18.000	18.000	18.000	71.340

			Attempted	Earned	GPA Units	Points
Cum GPA	3.990	Cum Totals	52.000	52.000	52.000	207.340
Transfer Cum GPA		Transfer Totals	68.000	68.000	0.000	0.000
Combined Cum GPA	3.990	Comb Totals	120.000	120.000	52.000	207.340

Robert A. Kubat

PennState

Office of the University Registrar

The Pennsylvania State University
112 Shields Building
University Park, PA 16802
(814) 865-6357
www.registrar.psu.edu

RELEASE OF INFORMATION

In compliance with the Family Education Rights and Privacy Act of 1974, this information is released on the condition that the recipient "will not permit any other party to have access to such information without the written consent of the student."

OFFICIAL DOCUMENT

"Penn State" appears in small print on a blue background across the entire face of the official academic transcript.
official transcript bears the seal of Penn State and the signature of the University Registrar. The raised University seal is not required.

OFFICIAL ELECTRONIC DOCUMENT

An electronic signature and certification appears before you open the PDF transcript, and also on the front page of the transcript. The Statement of Authenticity bears the name of the University Registrar.

ACCREDITATION

The Pennsylvania State University, whose prime purpose has always been to serve the people and the interests of the Commonwealth and the Nation, is accredited by the Middle States Association and is a member of the Association of American Universities.

Each of the Penn State Dickinson Schools of Law is on the approved list of the American Bar Association and is a member of the Association of American Law Schools.

INSTITUTIONAL CODE

The institutional code for The Pennsylvania State University is 003329.

TRANSCRIPTS KEYS

To view academic transcript keys for all academic careers, please visit our website at
http://www.registrar.psu.edu/transcripts/transcript_key_index.cfm

SECURITY FEATURES:

Chemical Sensitive Paper	• Stains or discoloration on this document may indicate alteration attempt.
Invisible Fibers	• Fibers in paper visible under ultraviolet light.
Microprinting	• Small type in box surrounding this section appears as dotted line when copied.
True Watermark	• Hold document to a light source to view. Cannot be copied.
VOID Technology	• When photocopied, the word "VOID" appears prominently across the face of the document.

The square on an original transcript is printed in thermochromic ink. When rubbed or breathed on, it will fade, then gradually return to normal.

SEE REVERSE FOR SECURITY AND VERIFICATION FEATURES

Undergraduate Official Transcript

Name: Zihao Zuo
Student ID: 950120799

Term Honor: Dean's List

Spring 2023

Program: Science
Plan: Astronomy and Astrophysics (BS) Major
Subplan: Graduate Studies

Program: Science
Plan: Mathematics (BS) Major
Subplan: General

Course		Description	Attempted	Earned	Grade	Points
ASTRO	440	Astrophysics	3.000	3.000	A	12.000
ASTRO	497	Special Topics	3.000	3.000	A	12.000
Req Designation:		Honors				
Course Topic:		Radiation Processes				
CHEM	111	Exper Chem I	1.000	1.000	A	4.000
PHYS	420	Thermal Phys	3.000	3.000	A	12.000
PHYS	444	Tpcs in Cntmp Phys	2.000	2.000	A	8.000
PHYS	479	Sp Gen Relativity	3.000	3.000	A	12.000
Req Designation:		Honors				
STAT	415	Intro Math Stat	3.000	3.000	A	12.000

			Attempted	Earned	GPA Units	Points
Term GPA	4.000	Term Totals	18.000	18.000	18.000	72.000
Transfer Term GPA		Transfer Totals	0.000	0.000	0.000	0.000
Combined GPA	4.000	Comb Totals	18.000	18.000	18.000	72.000

			Attempted	Earned	GPA Units	Points
Cum GPA	3.990	Cum Totals	70.000	70.000	70.000	279.340
Transfer Cum GPA		Transfer Totals	68.000	68.000	0.000	0.000
Combined Cum GPA	3.990	Comb Totals	138.000	138.000	70.000	279.340

Term Honor: Dean's List

Summer 2023

Program: Science
Plan: Astronomy and Astrophysics (BS) Major
Subplan: Graduate Studies

Program: Science
Plan: Mathematics (BS) Major
Subplan: General

Program: Science
Plan: Physics (BS) Major
Subplan: General

Course		Description	Attempted	Earned	Grade	Points
ASTRO	7N	Artistic Universe	3.000	3.000	A	12.000
CHEM	113	Exper Chem II	1.000	1.000	A	4.000

			Attempted	Earned	GPA Units	Points
Term GPA	4.000	Term Totals	4.000	4.000	4.000	16.000
Transfer Term GPA		Transfer Totals	0.000	0.000	0.000	0.000
Combined GPA	4.000	Comb Totals	4.000	4.000	4.000	16.000

			Attempted	Earned	GPA Units	Points
Cum GPA	3.990	Cum Totals	74.000	74.000	74.000	295.340
Transfer Cum GPA		Transfer Totals	68.000	68.000	0.000	0.000
Combined Cum GPA	3.990	Comb Totals	142.000	142.000	74.000	295.340

Fall 2023

Program: Science
Plan: Astronomy and Astrophysics (BS) Major
Subplan: Graduate Studies

Program: Science
Plan: Mathematics (BS) Major
Subplan: General

Program: Science
Plan: Physics (BS) Major
Subplan: General

Course		Description	Attempted	Earned	Grade	Points
ASTRO	485	High-Energy Astro	3.000	0.000		0.000
Req Designation:		Honors				
FDSC	105	Food Facts and Fads	3.000	0.000		0.000
GEOG	2N	Apocalyptic Geographies	3.000	0.000		0.000
PHYS	411	Intr Quant Mchs II	3.000	0.000		0.000
PHYS	457W	Experimental Phys	3.000	0.000		0.000
Course Attributes:		Writing Across the Curriculum				

			Attempted	Earned	GPA Units	Points
Term GPA	0.000	Term Totals	15.000	0.000	0.000	0.000
Transfer Term GPA		Transfer Totals	0.000	0.000	0.000	0.000
Combined GPA	0.000	Comb Totals	15.000	0.000	0.000	0.000

			Attempted	Earned	GPA Units	Points
Cum GPA	3.990	Cum Totals	89.000	74.000	74.000	295.340
Transfer Cum GPA		Transfer Totals	68.000	68.000	0.000	0.000
Combined Cum GPA	3.990	Comb Totals	157.000	142.000	74.000	295.340

Undergraduate Career Totals

			Attempted	Earned	GPA Units	Points
Cum GPA:	3.990	Cum Totals	89.000	74.000	74.000	295.340
Transfer Cum GPA		Transfer Totals	68.000	68.000	0.000	0.000
Combined Cum GPA	3.990	Comb Totals	157.000	142.000	74.000	295.340

Transfer Credits

Transfer Credit from Chinese Univ of Hong Kong, Shenzhen

Fall 2021

Course		Description	Attempted	Earned	Grade	Points
BIOL	XFRGN0	Transfer Credit GN0	3.000	3.000	TR	0.000
CHEM	112	Chem Princ II	3.000	3.000	TR	0.000
CHNS	455	Traditional Lit	3.000	3.000	TR	0.000
CMPSC	XFR100	CMPSC-Transfer Credit Course	1.000	1.000	TR	0.000

PennState

Office of the University Registrar

The Pennsylvania State University
112 Shields Building
University Park, PA 16802
(814) 865-6357
www.registrar.psu.edu

RELEASE OF INFORMATION

In compliance with the Family Education Rights and Privacy Act of 1974, this information is released on the condition that the recipient "will not permit any other party to have access to such information without the written consent of the student."

OFFICIAL DOCUMENT

"Penn State" appears in small print on a blue background across the entire face of the official academic transcript.
official transcript bears the seal of Penn State and the signature of the University Registrar. The raised University seal is not required.

OFFICIAL ELECTRONIC DOCUMENT

An electronic signature and certification appears before you open the PDF transcript, and also on the front page of the transcript. The Statement of Authenticity bears the name of the University Registrar.

ACCREDITATION

The Pennsylvania State University, whose prime purpose has always been to serve the people and the interests of the Commonwealth and the Nation, is accredited by the Middle States Association and is a member of the Association of American Universities.

Each of the Penn State Dickinson Schools of Law is on the approved list of the American Bar Association and is a member of the Association of American Law Schools.

INSTITUTIONAL CODE

The institutional code for The Pennsylvania State University is 003329.

TRANSCRIPTS KEYS

To view academic transcript keys for all academic careers, please visit our website at
http://www.registrar.psu.edu/transcripts/transcript_key_index.cfm

SECURITY FEATURES:

Chemical Sensitive Paper	• Stains or discoloration on this document may indicate alteration attempt.
Invisible Fibers	• Fibers in paper visible under ultraviolet light.
Microprinting	• Small type in box surrounding this section appears as dotted line when copied.
True Watermark	• Hold document to a light source to view. Cannot be copied.
VOID Technology	• When photocopied, the word "VOID" appears prominently across the face of the document.

The square on an original transcript is printed in thermochromic ink. When rubbed or breathed on, it will fade, then gradually return to normal.

SEE REVERSE FOR SECURITY AND VERIFICATION FEATURES

Undergraduate Official Transcript

Name: Zihao Zuo
Student ID: 950120799

Course		Description	Attempted	Earned	Grade	Points
CMPSC	XFR100	CMPSC-Transfer Credit Course	3.000	3.000	TR	0.000
CMPSC	462	Data Structures	3.000	3.000	TR	0.000
ENGL	XFRGH	Transfer Credit GH	3.000	3.000	TR	0.000
ENGL	15	Rhetoric and Comp	3.000	3.000	TR	0.000
ENGL	202C	Technical Writing	3.000	3.000	TR	0.000
KINES	XFRGHA	Transfer Credit GHA	1.000	1.000	TR	0.000
MATH	319	Elem. Mathematical Statistics	3.000	3.000	TR	0.000
MATH	318	Elem Probability	3.000	3.000	TR	0.000
MATH	312	Real Analysis	3.000	3.000	TR	0.000
MATH	220	Matrices	3.000	3.000	TR	0.000
MATH	XFRGQ1	Transfer Credit GQ1	1.000	1.000	TR	0.000
MATH	XFRGQ2	Transfer Credit GQ2	2.000	2.000	TR	0.000
MATH	XFRGQ1	Transfer Credit GQ1	3.000	3.000	TR	0.000
MATH	XFR400	MATH-Transfer Credit Course	3.000	3.000	TR	0.000
MATH	XFR400	MATH-Transfer Credit Course	3.000	3.000	TR	0.000
MATH	XFR400	MATH-Transfer Credit Course	3.000	3.000	TR	0.000
MATH	XFRGQ2	Transfer Credit GQ2	3.000	3.000	TR	0.000
PHYS	XFRGN2	Transfer Credit GN2	3.000	3.000	TR	0.000
PHYS	XFRGN2	Transfer Credit GN2	3.000	3.000	TR	0.000
PHYS	400	Int Elec and Magnet1	3.000	3.000	TR	0.000
Course Trans GPA:	0.000	Transfer Totals:	65.000	65.000		0.000

Transfer Credit from Chinese Univ of HK, Shenzhen

Fall 2021

Course		Description	Attempted	Earned	Grade	Points
TRN	XFRGEN	TRN - General Transfer Credit	3.000	3.000	TR	0.000
Course Trans GPA:	0.000	Transfer Totals:	3.000	3.000		0.000

End of Undergraduate Official Transcript

PennState

Office of the University Registrar

The Pennsylvania State University
112 Shields Building
University Park, PA 16802
(814) 865-6357
www.registrar.psu.edu

RELEASE OF INFORMATION

In compliance with the Family Education Rights and Privacy Act of 1974, this information is released on the condition that the recipient "will not permit any other party to have access to such information without the written consent of the student."

OFFICIAL DOCUMENT

"Penn State" appears in small print on a blue background across the entire face of the official academic transcript.
official transcript bears the seal of Penn State and the signature of the University Registrar. The raised University seal is not required.

OFFICIAL ELECTRONIC DOCUMENT

An electronic signature and certification appears before you open the PDF transcript, and also on the front page of the transcript. The Statement of Authenticity bears the name of the University Registrar.

ACCREDITATION

The Pennsylvania State University, whose prime purpose has always been to serve the people and the interests of the Commonwealth and the Nation, is accredited by the Middle States Association and is a member of the Association of American Universities.

Each of the Penn State Dickinson Schools of Law is on the approved list of the American Bar Association and is a member of the Association of American Law Schools.

INSTITUTIONAL CODE

The institutional code for The Pennsylvania State University is 003329.

TRANSCRIPTS KEYS

To view academic transcript keys for all academic careers, please visit our website at
http://www.registrar.psu.edu/transcripts/transcript_key_index.cfm

SECURITY FEATURES:

Chemical Sensitive Paper	• Stains or discoloration on this document may indicate alteration attempt.
Invisible Fibers	• Fibers in paper visible under ultraviolet light.
Microprinting	• Small type in box surrounding this section appears as dotted line when copied.
True Watermark	• Hold document to a light source to view. Cannot be copied.
VOID Technology	• When photocopied, the word "VOID" appears prominently across the face of the document.

The square on an original transcript is printed in thermochromic ink. When rubbed or breathed on, it will fade, then gradually return to normal.

Academic reference for **Mr Zihao Zuo**

MASt in Astrophysics

Referee Details

Name	Professor William Brandt	**Job title**	Professor of Astronomy & Astrophysics
Email	wnbrandt@gmail.com	**Department**	
Phone		**Institution**	Pennsylvania State University
Relationship	Research supervisor, classroom teacher	**City**	State College
Known for	2 years	**Country**	United States

Reference

Academic ranking	The best performance in their year I teach about 10-20 majors in Astronomy & Astrophysics, and I have been teaching for 27 years. So, I'd estimate about 400 students.
Student potential	Distinctly original/creative/independent of thought
Course suitability	Exceptionally Suitable

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

PennState
Department of Astronomy & Astrophysics
The Pennsylvania State University
525 Davey Laboratory, University Park, PA 16802
USA

Prof. W.N. Brandt
514A Davey Laboratory
+1-814-865-3509
wnbrandt@gmail.com
personal.psu.edu/wnb3/

November 9, 2023

Recommendation Letter for Mr. Zihao Zuo

To Whom It May Concern:

It is my pleasure to strongly recommend Mr. Zihao Zuo for graduate studies in astronomy, astrophysics, and/or physics at any leading graduate program. Zihao is an excellent undergraduate student in the Department of Astronomy & Astrophysics here at Penn State who has been leading work in my group on the X-ray properties of radio-loud quasars. I am also presently teaching him in an advanced undergraduate classroom course on high-energy astrophysics.

Zihao joined my research group in late 2021, and I have been mentoring him together with Shifu Zhu, a graduate-student group member (who has recently moved to a postdoctoral position at the University of Science and Technology of China). Zihao has focused on studying the X-ray luminosity enhancements of highly radio-loud quasars. Specifically, highly radio-loud quasars (HRLQs) at $z \gtrsim 4$ show apparent enhanced X-ray emission compared to matched HRLQs at lower redshifts, perhaps due to a redshift-dependent fractional contribution to the X-ray luminosity from inverse-Compton scattering of cosmic microwave background photons (IC/CMB). Using new *Chandra* observations and archival X-ray data, we have investigated this phenomenon with an optically flux-limited sample of 41 HRLQs at z = 4–5.5 all with sensitive X-ray coverage, the largest sample utilized to date by a wide margin. X-ray enhancements were assessed using X-ray-to-optical flux ratios and spectral energy distributions. We have confirmed the presence of X-ray enhancements at a 4.9-5.7σ significance level, finding that the median factor of enhancement is ≈ 1.8 at our sample median redshift of $z \approx 4.4$. Under an IC/CMB model, the expected enhancement at lower redshifts is modest; e.g., ≈ 4% at $z \approx 1.5$. We have also investigated a sample of seven radio-loud quasars (RLQs; log $R > 1$) at even higher redshifts of z = 5.6–6.8, using new and archival X-ray data. These RLQs also show evidence for X-ray enhancements by a median factor of ≈ 2.7 at a 3.5-4.9σ significance level. The X-ray spectral and other properties of these z = 5.6-6.8 RLQs, however, pose challenges for a straightforward IC/CMB interpretation of their enhancements. This work is presently submitted to MNRAS as Zuo et al., and we have addressed the first (and hopefully only) round of referee feedback and recently re-submitted.

I have been very positively impressed by Zihao's research work. He has effectively utilized the scientific literature in his research, demonstrated solid data-analysis and programming skills, shown appropriate skepticism in his work, addressed co-author and referee feedback on his paper efficiently, and presented his ongoing findings clearly during our twice-weekly group meetings. He is also friendly and collaborative, effectively interacting with myself, Shifu, and other members of my group. In my assessment, Zihao is already performing in his research like one of our seasoned graduate students.

I have also interacted with Zihao in the classroom since he is presently taking my demanding undergraduate course on high-energy astrophysics (Astro 485). This course covers X-ray and gamma-ray astrophysics, as well as some gravitational wave and particle astrophysics, at nearly a graduate level, and many of our best undergraduates take the course. Zihao's performance on the homework sets and midterm exam has been consistently excellent; he is one of the two best-performing students in this class of 18. He works all the problems of moderate difficulty with ease, and he usually solves the difficult problems as well - these are often graduate-level problems borrowed from Caltech and Cambridge courses on the topic. Zihao clearly has a strong desire to learn, and he asks thoughtful questions when needed.

Based on all the above, I am pleased to give Zihao Zuo a very strong recommendation for graduate school. He is very smart, he is creative in solving technical analysis challenges, he is well motivated and proactive, he is delivering genuinely valuable undergraduate research, and he is strong with computer-based data analysis and programming. He is moreover a good all-around group member and collaborator.

I am a highly selective graduate advisor – e.g., most of my former graduate students have become faculty members worldwide. I would be delighted to have Zihao as one of my graduate students.

If you would like any further information, please feel free to contact me directly.

Sincerely Yours,

W. Niel Brandt
Eberly Chair Professor of Astronomy & Astrophysics and Professor of Physics

Academic reference for **Mr Zihao Zuo**

MASt in Astrophysics

Referee Details

Name	Dr Michael Eracleous	**Job title**	Professor
Email	mxe17@psu.edu	**Department**	Astronomy and Astrophysics
Phone		**Institution**	Pennsylvania State University
Relationship	Advanced astrophysics course instructor	**City**	State College
Known for	since January 2023	**Country**	United States

Reference

Academic ranking	The best performance you have known in the last 5 years
	Top 5% of about 280 students who have taken advanced undergraduate courses from me since 1999. Top. 2% of 140 students who have taken the same nebular astrophysics course from me.
Student potential	Outstandingly original/creative/independent of thought
Course suitability	Exceptionally Suitable

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

PennState

Department of Astronomy & Astrophysics
The Pennsylvania State University
525 Davey Lab, University Park, PA 16802

Prof. Michael Eracleous
sites.google.com/psu.edu/mxe17
mxe17@psu.edu

December 1, 2023

MASt Admissions Committee
University of Cambridge

Dear Committee Members,

I am writing this letter in strong and enthusiastic support of the application by Mr. Zihao Zuo, currently a 4th-year undergraduate student at Penn State, to the MASt Admissions Committee at the University of Cambridge Mr. Zuo was a student in an advanced undergraduate course on radiation processes that I taught in the spring of 2023. His performance was absolutely outstanding, as I detail below. The course covered radiation processes from astrophysical plasmas and some special relativity with applications to astrophysics. The level was that of the textbooks by L. Spitzer ("Physical Processes in the Interstellar Medium," Wiley, 2004) and G. Rybicky & A. P. Lightman ("Radiative Processes in Astrophysics," Wiley, 2004).

Mr. Zuo performed extremely well in this course and earned an A. In fact, he was the best student in a class of 12. I would rank him in the top 2% of about 140 students that have ever taken that course from me. I would also rank him in the top 5% of approximately 280 students that have taken an advanced undergraduate course from me since 1999. The work that Mr. Zuo turned in was always outstanding. He showed a deep understanding of the course material and a broad knowledge of astrophysics in general. His solutions to homework and exam problems were insightful; he was able to identify the essence of each problem and he went straight to the point. I would also note that his work ethic and dedication are impressive.

As substantial part of the coursework was an independent project, which involved calculating the level populations of the 5-level [O III] ion as a function of temperature and density and exploring the consequences. This project gave Mr. Zuo an opportunity to showcase his initiative, independence, and computing skills. He set up the problem, developed a `Python` code to carry out the numerical solution and then explored the behavior of the system as the temperature and density varied. The exploration involved, among other things, calculating the relative intensities of different emission lines and figuring out how these behaved above and below the critical densities of the relevant transitions. I only had to help Mr. Zuo define the problem at the very beginning and he took over from there. When I pointed him to sources for the atomic data that he needed for his code, he did not just follow my guidance. He took the initiative and went on to cross-check all the data that he found against a variety of databases, identify and resolve discrepancies, and actually understand how the discrepancies arose. In the end, Mr. Zuo produced a clear and concise paper presenting his methodology and summarizing very effectively the lessons he had learned in the process. This type of independence, initiative, and scientific maturity is something I would expect from a relatively advanced graduate student.

In conclusion, I consider Mr. Zuo to be extremely promising. He is not only talented but also enthusiastic and dedicated. I have had the chance to talk to him about his research as well on

occasion. Although we did not talk about the technical details very much, his enthusiasm and motivation were plainly obvious. In view of the above, I recommend him to you most enthusiastically and without any reservations.

Sincerely,

Michael Eracleous
Professor of Astronomy & Astrophysics

UNIVERSITY OF CAMBRIDGE

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:

Zihao

Your surname:

Zuo

Your email address:

zihaozuoastro@gmail.com

Confirm your email address:

zihaozuoastro@gmail.com

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

Your undergraduate/ bachelor's institution:

Pennsylvania State University

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

Due to the uncertainties imposed by the COVID-19 pandemic, I did not make the final decision to apply to transfer from the Chinese University of Hong Kong, Shenzhen, to a U.S. university until March 2021. This is late in the application cycle, and consequently, it is behind the application deadlines of most universities, limiting my choices of schools.

Characters remaining: 646

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.

After starting my second year at the Chinese University of Hong Kong, Shenzhen (CUHKSZ hereafter) as a Mathematics student, I realized that I was not interested in pursuing a solely mathematics-oriented academic career. My prior research experience in solar astronomy during high school and my engagement with the Astronomy Society at CUHKSZ motivated me to embark on an academic journey in astrophysics. While grappling with decisions about my future academic and career path, my grades experienced a decline in 2020-2021 Term 1. Although there was a slight recovery in the following semester, my grades were still not ideal due to the considerable time I dedicated to transfer applications. After joining Pennsylvania State University, driven by a firm commitment to a career in astronomy and free from previous distractions, I fully dedicated myself to academic studies, resulting in a superb GPA of 3.99/4.00.

Characters remaining: 87

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.

Due to the heavy course load, I had to withdraw from ASTRO 550, a graduate course in high-energy astrophysics taught by Prof. William Nielson Brandt in 2022 Fall. In that semester, I was concurrently enrolled in courses in exoplanets, observational astronomy, theoretical mechanics, quantum mechanics, and numerical analysis. Additionally, I was working on my research project supervised by Prof. Brandt. I decided to withdraw from ASTRO 550 because the heavy courseload restricted my ability to thoroughly complete the assigned readings of this course. However, in 2023 Fall, I am enrolled in ASTRO 485, the undergraduate version of ASTRO 550. In this course, I am undertaking an honors project exclusively available to students from the Schreyer Honors College at Penn State. This project investigates the interior structure of White Dwarfs. I expect to get an A in the course. An unexpected benefit of this experience has been the deepened understanding of high-energy astrophysics phenomenology.

Characters remaining: 1

Powered by Qualtrics

ZIHAO ZUO

+1 5822039140 | zihaozuoastro@gmail.com |
www.linkedin.com/in/zihaozuo
State College, PA, 16802

EDUCATION

BS | Majors: Astronomy (Honors), Math, and Physics | GPA: 3.99/4.00 May. 2024 (Expected)
The Pennsylvania State University PA, The USA

PUBLICATION

1. **Zuo Z.**, Zhu S., Brandt W. N., Garmire G. P., Vito F., Wu J., and Xue Y., 2023, The X-ray enhancements of radio-loud quasars at high redshift: New results at $z = 4$ –7. Submitted to *MNRAS*.

2. **Zuo Z.**, Li Y., Sha J., and Zhou T., 2019, A Solar Jet Triggered by a Decaying Satellite Sunspot. *Acta Astronomica Sinica*, 60(6):56.

RESEARCH EXPERIENCE

Undergraduate Research Assistant Jan. 2022 – present
The Pennsylvania State University
Supervisor: Dr. Niel Brandt PA, The USA

- Investigated the X-ray enhancements of high-redshift radio-loud quasars.
- Selecting blazars in three LSST Deep Drilling Fields (XMM-SERVS fields).

Astrostatistics Summer School June, 2022
The Pennsylvania State University PA, The USA

- Topics include probability and inference, Bayesian inference, MCMC, time series analysis, ML/DL, and their astronomical applications.

The 13th Observational Astrophysics Workshop Oct. 2021
The National Astronomical Observatory of China Beijing, China

- Learned to use IRAF to reduce and analyze observational data.

Zijin Scientific Research Program Dec. 2016 – July 2019
The Purple Mountain Observatory & High School Affiliated to Nanjing Normal University
Supervisor: Dr. Tuanhui Zhou Nanjing, China

- Analyzed multi-wavelength data of a solar jet event in NOAA Active Region 12127 that happened on Aug. 1, 2014.

CONFERENCES AND PRESENTATIONS

AAS 240th Meeting June, 2022
The American Astronomical Society Pasadena, CA

- Presentation title: X-ray Enhancements of High-redshift Highly Radio-loud Quasars

East-Asia AGN Workshop 2023 Sep. 2023
The Organizing Committee Kagoshima, Japan

- Presentation title: The X-ray enhancements of radio-loud quasars at high redshift: New results at z=4–7

Honors and Awards

Dean's List — All semesters
Recognition of student's academic excellence.

Academic Performance Scholarship ($\sim$ \$3200) — Academic Year 2019-2020
Merit based grant for top 5% students.

The President Walker Award — Spring 2022
Awarded to students with 4.0/4.0 GPA.

Erickson Discovery Grant (\$3500) — Spring 2022
2022 summer research founding.

John and Elizabeth Holmes Teas Scholarship (\$19000) — Aug. 2023
Merit based scholorship.

Mercedes T. Richards Memorial Scholarship in Astronomy and Astrophysics (\$1673) — Nov. 2023
Awarded for student's outstanding academic performance.

Skills

Languages: Chinese (Native), English (Proficient)
Programming: Python, MATLAB, Java, R, Bash
Document Creation: Microsoft Office Suite, LaTeX

Work Experience

Grader — Jan. 2023 – May. 2023
Eberly College of Science — PA, the USA

- Serve as a grader for MATH 231 multivariable calculus.

Executive Assistant — Sep. 2020 – Aug. 2021
School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen — Shenzhen, China

- Assist the School office in handling administrative affairs, collecting and arranging materials and office documents

Extracurricular Activities

The Astronomy Association — Sep.2019 – Aug. 2021
The Chinese University of Hong Kong, Shenzhen — Shenzhen, China

- Head of academic department
- Organize popular science lectures

The Physics Association — Aug.2020 – Aug. 2021
School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen — Shenzhen, China

- Co-founder
- Head of communication department

The Lumos Community — Nov.2020 – Aug. 2021
Muse College, The Chinese University of Hong Kong, Shenzhen — Shenzhen, China

- Co-founder
- Head of planning department
- Organize voluntary teaching programs