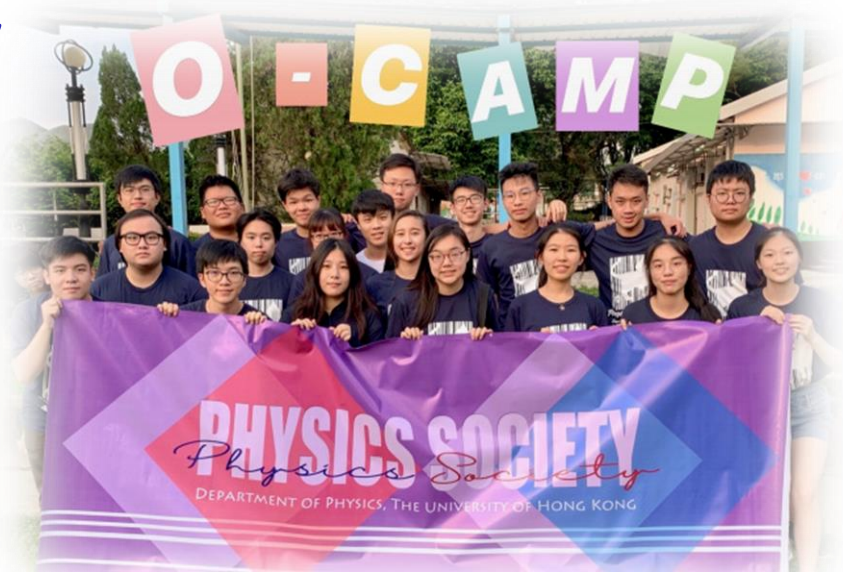




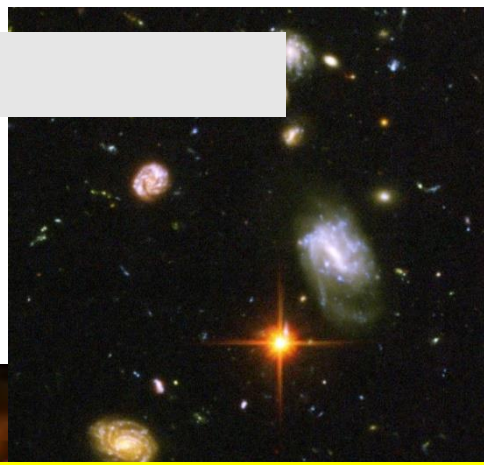
Major in Physics
Major in Physics (Intensive)

Minor in Physics
Minor in Astronomy

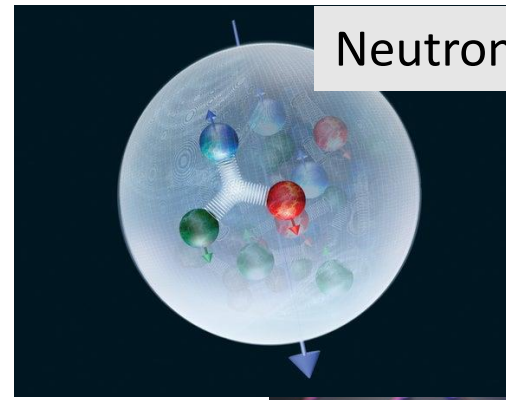




Galaxies

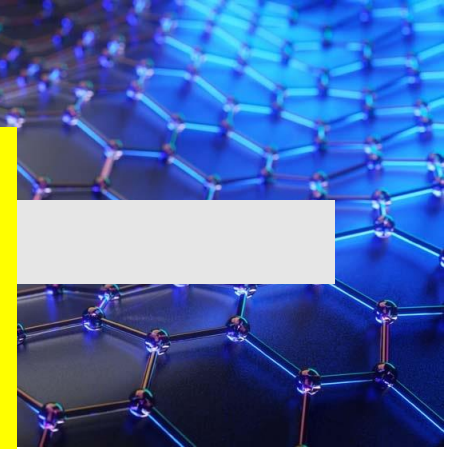


Neutrons

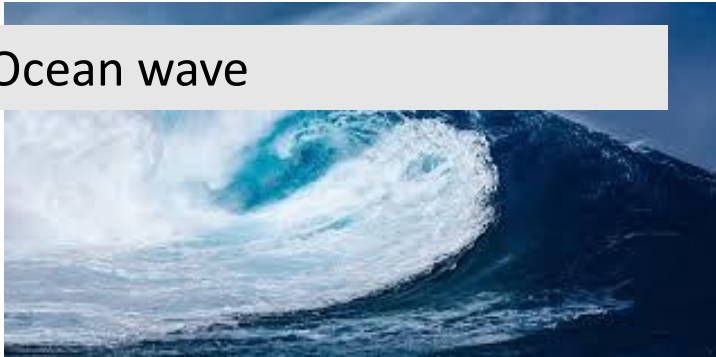


Sun-Earth

Why Physics?
**A diverse universe around us,
and we have many questions.**



Ocean wave



Hummingbird

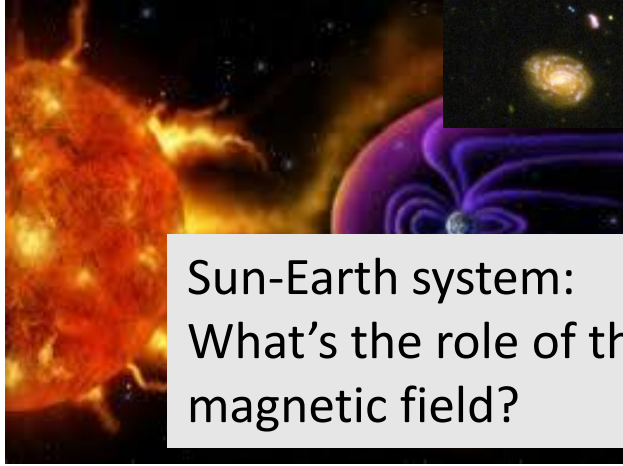
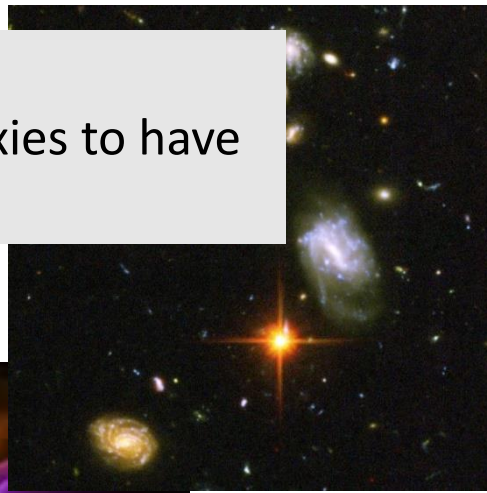


E.Coli bacteria



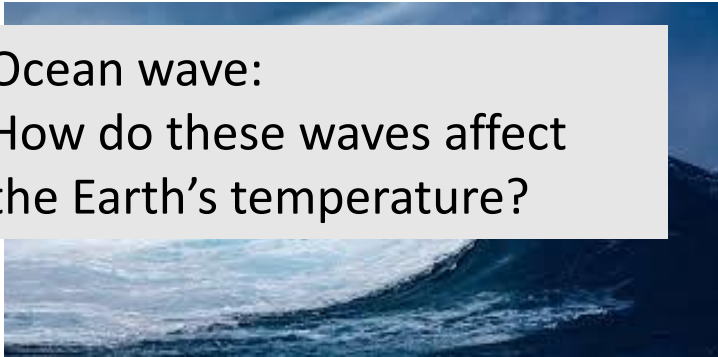


Galaxies:
What caused galaxies to have different shapes?

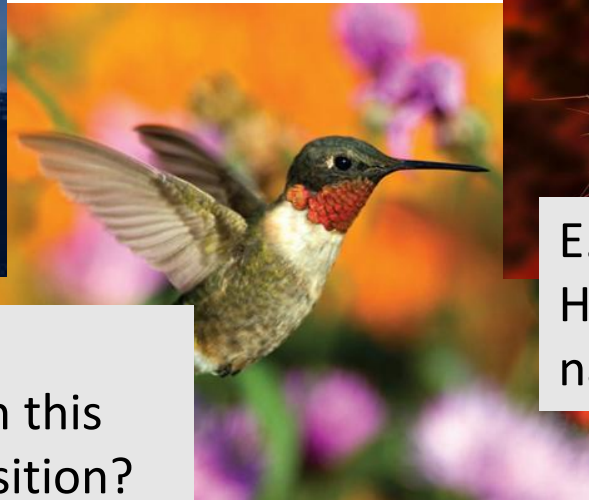


Sun-Earth system:
What's the role of the Earth's magnetic field?

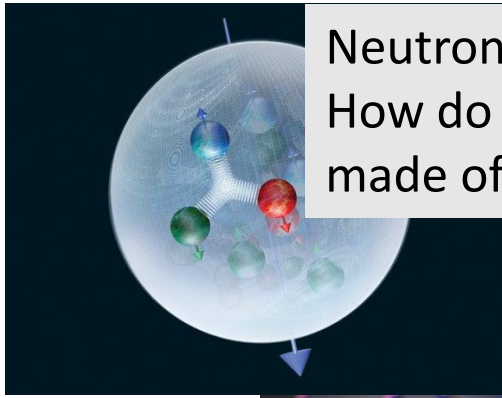
Ocean wave:
How do these waves affect the Earth's temperature?



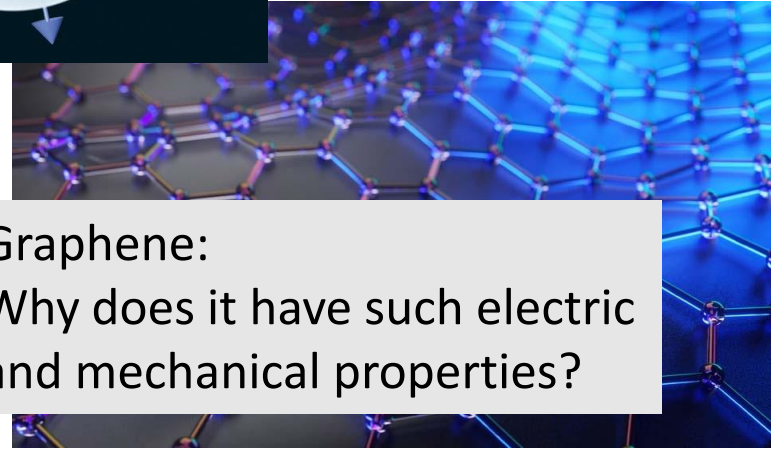
Hummingbird:
How can they maintain this "suspension in air" position?



Neutrons:
How do we know they are made of three quarks?



Graphene:
Why does it have such electric and mechanical properties?

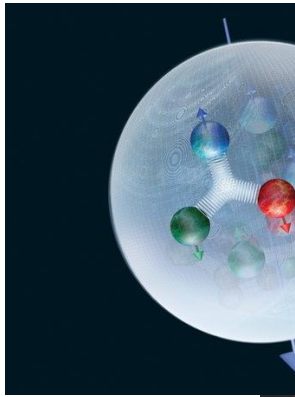
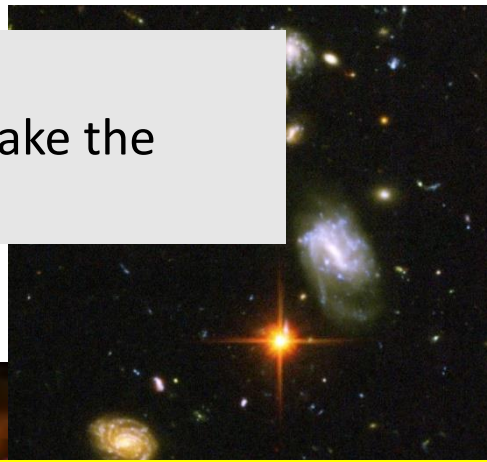


E.Coli bacteria:
How can these bacteria navigate around?





Galaxies:
How long does it take the
galaxies to form?



Neutrons:
Why neutron weighs much
more than its three
quarks?



Sun
Wh
ene

Why Physics?
**Physics is a powerful way to
understand the natural world, hence
giving solutions to human's challenges.**

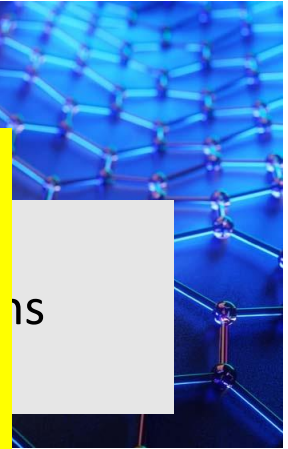
Ocean wave
Where does the Earth get the
energy to initiate the waves?



Hummingbird:
What dictates their bright
colors?



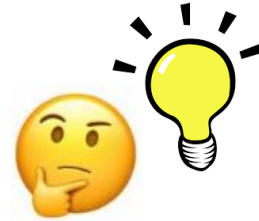
E.Coli bacteria:
Why some E.coli were so
harmful to human?





Skill set after a university physics training

- Understanding the world (How things work?)
- Discovering relationships
- Quantitative thinking
- Hands on experience with wide range of equipment
- Problem identification and solving
- Designing research plans
- Communication skills (oral presentation, writing reports, ...)





Majors and Minors

- **Physics Major (96 credits; 16 courses)**
 - **Large flexibility** in curriculum, lead to diverse career paths
- **Physics Major (Intensive) (144 credits; 24 courses)**
 - **Comprehensive training** in physics, targeted for students who want to pursue Master or PhD in physics or other science/technical disciplines
- **Astronomy Minor (36 credits; 6 courses)**
 - Suitable for all students (BSc or non-BSc) interested in the subject
 - Minimum physics and mathematics background needed
- **Physics Minor (42 credits; 7 courses)**
 - Skills learnt in could be useful in many science and non-science fields (e.g., chemistry, economics and finance)

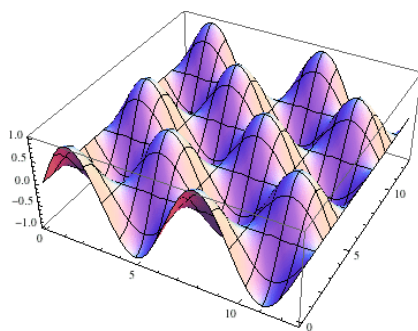


Four (optional) themes for physics or physics(intensive) majors

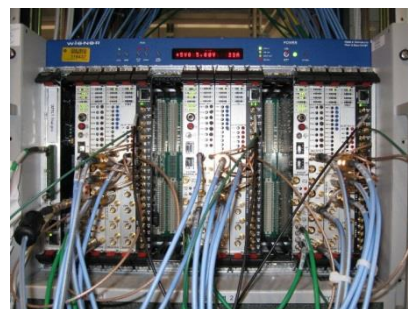
- *Optional* for students (may choose 0, 1 or 2 themes)



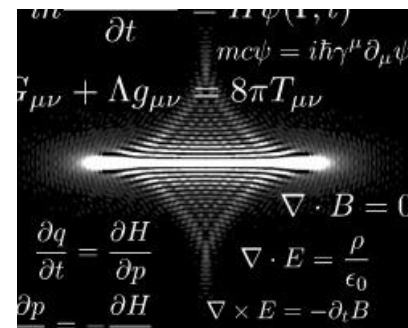
Astrophysics



**Computational
Physics**



**Experimental
Physics**



**Theoretical
Physics**

- Help students to **build expertise** in specific areas
- Enhanced training to prepare for postgraduate studies
- Student **strength endorsed** by the Department with certificate of completion
(*will also be a factor in HKU physics postgrad admission consideration*)



Studying astronomy in HKU



- If I want to study astronomy, should I select the
Minor in Astronomy?
Major in Physics (Intensive) with Astrophysics theme?
Major in Physics - Minor in Astronomy combination?
 - The Minor in Astronomy is suitable for science or non-science students with *minimal physics and mathematics requirements*
 - If you want to pursue postgraduate research in astronomy, then EITHER Major in Physics (Intensive) with Astrophysics theme OR Major in Physics - Minor in Astronomy combination are good



Why Physics @ HKU?



- Faculty with diverse research interest

Broad range of courses taught by expert staff on that topic; Outside experts invited to offer specialty courses

- Outstanding track record on research

Many channels for students to get involved, e.g. research project courses, Summer Research Fellowship

- A friendly learning environment

Small class size; *Low student-to-teacher ratio (lower than 6:1)*

- Long standing tradition of rigorous physics training

Alumni network in business, education, government and academia



Research Areas

➤ Academic Staff:

25 Professoriate staff

3 Research Assistant Professors + 4 Lecturers

➤ Research Areas:

Atomic and Quantum Physics



Astronomy and Astrophysics



Experimental Condensed Matter and Material Science



Theoretical and Computational Condensed Matter Physics



Experimental Nuclear and Particle Physics





Why Physics @ HKU?



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Outside Classroom Learning Opportunities

Overseas Summer Research Fellowship (8 weeks during summer)

Participants engage in research field of their own choosing;
Physics Department **match student's interest with researchers**



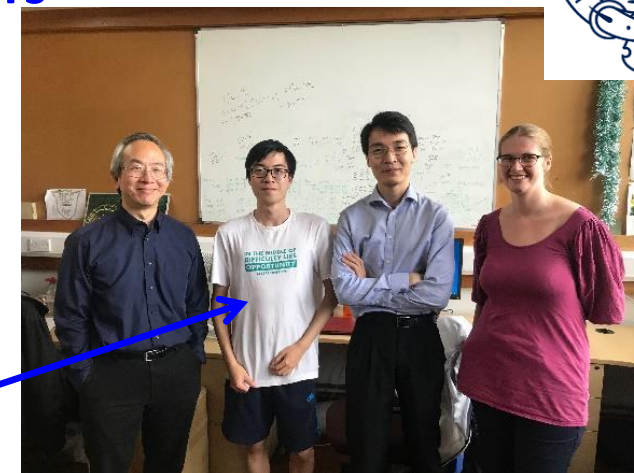
2019 summer



Marco Yeung (experimental nuclear physics) with Prof Shunji Nishimura, **RIKEN**

Kelvin Tsang (experimental particle physics) Prof Jeff Tseng, **Oxford**

Zhao Qingqing (computational condensed matter physics) Prof Owen Miller, **Yale**



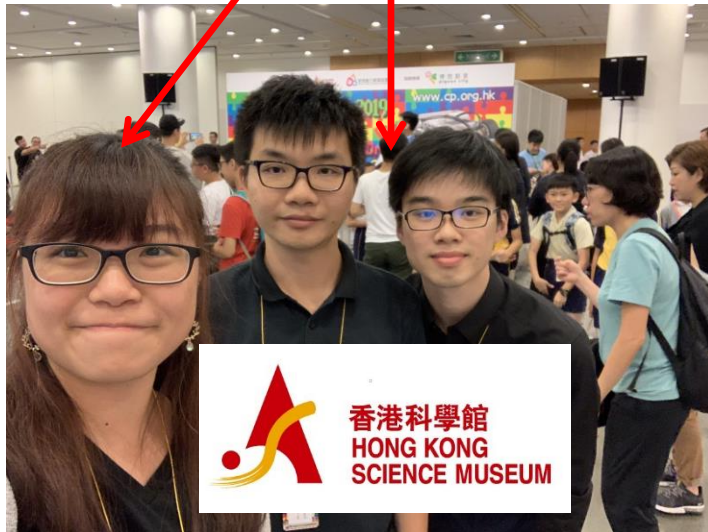


Outside Classroom Learning Opportunities

Summer Internship (8 weeks during summer)

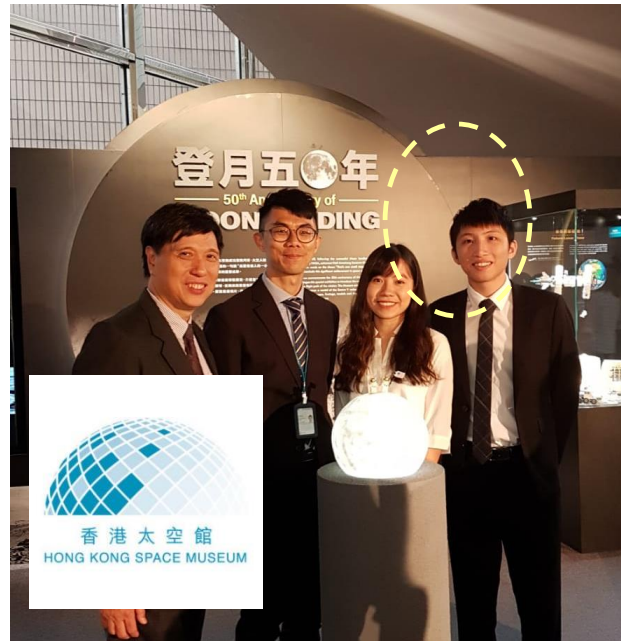
Participants engage in actual work to apply their book knowledge

*Elizabeth Kwok &
Jason Siu (HK
Science Museum)*



2019 summer

*Leo Lee (HK
Space Museum)*



*Keith Tse & Billy Chu
(Ho Koon
Astronomical Centre)*





Outside Classroom Learning Opportunities

Summer Internship (Secondary Schools)

8 weeks during summer

Participants get first-hand experience working both in and out of classroom settings

2019 summer

Anthony Chow (Yu Chun Keung No 2 Memorial College)



Leung Cheuk Yin (St Joseph Anglo-Chinese School)



Kenny Fan (Cheung Sha Wan Catholic Secondary School)





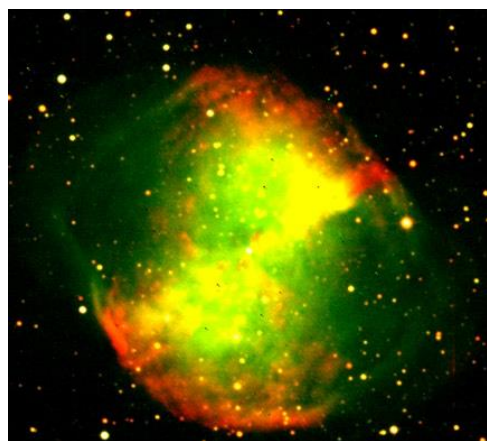
Outside Classroom Learning Opportunities

Undergraduate Overseas Experiential Learning (1-2 weeks)

Summer School on Observational Astronomy (Summer 2019)

Lectures and hands-on projects

CEFCA (Teruel, Spain)



12 HKU undergraduates
who have taken advanced
Astronomy courses





Outside Classroom Learning Opportunities

Undergraduate Overseas Experiential Learning (1-2 weeks)

Summer School on Nuclear Physics at RIKEN (2016, 2017, 2018, 2019)
Together with Peking University & Seoul National University



Nishina School at RIKEN
(Tokyo, Japan)



5 HKU undergraduates who took nuclear physics course and training





Career Prospects

Government:



Administrative Officer

Executive Officer

Scientific Officer (HK Observatory)

Physicist (Health Department)

Hong Kong International Airport

Industry & Commercial Firms:



Assistant Manager

Staff Accountant

Computer Programmer

Financial Consultant

Researcher

Companies include: HSBC, Standard Chartered Bank, The Hong Kong Electric Co., others include publishing, communications, logistics, etc.

Education:

School Teachers in local secondary schools and
International schools




Where did our students go for further studies recently?

 Princeton University

 Stanford University

 University of Oxford

 University of Cambridge

 University of Chicago

 McGill University

 Columbia University


 University of Michigan


 Brown University

 Imperial College London

 Johns Hopkins University

 MIT (Massachusetts Institute of Technology)

 University of Texas at Austin

 California Institute of Technology

 University of California, San Diego

 University of California at Los Angeles (UCLA)

 University of Illinois – Urbana – Champaign

 Stony Brook University, State University of New York

 University of Tokyo

 Max Planck Institute for Radio Astronomy

 Universität Hamburg

 Leiden University



Thank you!

**Please contact us at physdept@hku.hk
for inquiries**

**HKU Department of Physics homepage:
<http://www.physics.hku.hk/>**