



DEPARTMENT OF PHYSICS

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Selection Committee
Hong Kong Laureate Forum

To whom it may concern,

It is a pleasure to endorse Damon Hoi Tim Cheung's application to attend the 2025 Hong Kong Laureate Forum. Damon is a brilliant graduate student here at the University of Michigan who works with me on analysis of LIGO gravitational wave data. He is making excellent progress toward his Ph.D. which I expect him to complete in 2026.

Damon is carrying out searches for continuous gravitational waves from central compact objects, thought to be neutron stars, at the centers of young, nearby supernova remnants in our galaxy. A continuous gravitational wave discovery would be a major scientific breakthrough, both in understanding the astrophysics of neutron stars and in permitting tests of gravity with unprecedented precision.

Although we have not yet made a first detection, Damon recently obtained the most sensitive upper limits on supernova remnant signals ever achieved for three promising targets: Cassiopeia A, Vela Jr. and G347.3-0.5. Damon presented these new results on behalf of the LIGO-Virgo-KAGRA Collaboration at the March 2025 American Physical Society meeting in Anaheim, California. The results are expected to be published in June 2025 in combination with (less sensitive) results from other LIGO searches for other supernova remnants. As we await those results from collaborators, Damon is also searching for signals from the remnant of Supernova 1987A and from three dense globular clusters in the galaxy.

Damon has shown great initiative, resourcefulness and cleverness in these computationally demanding searches, which collectively require millions of CPU hours and run on thousands of computers worldwide that make up the Open Science Grid. Our primary competitor in search sensitivity, in fact, has been the famous Einstein@Home distributed-computing consortium, which has not been able to surpass the sensitivity we have achieved. At the same time, Damon has worked with other LIGO collaborators on studies of gravitational wave lensing and has explored the potential benefits of machine learning in searches for continuous gravitational waves. His breadth and versatility are impressive.

Given Damon's background and the very promising career ahead of him, I believe he is an excellent candidate for the Hong Kong Laureate Forum. He would both benefit from the experience and contribute to a stimulating intellectual environment at the Forum. I give his application my highest endorsement and urge you to accept him.

Sincerely,

A handwritten signature in black ink that reads 'Keith Riles'.

Keith Riles
H. Richard Crane Professor of Physics