



# UNIVERSITY OF HAWAII SYSTEM

## ‘ŌNAEHANA KULANUI O HAWAII

### Legislative Testimony

#### Hō'ike Mana'o I Mua O Ka 'Aha'ōlelo

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Testimony Presented to the  
Senate Committee on Higher Education  
Senate Committee on Energy, Economic Development, and Tourism  
Thursday, February 9, 2023 at 1:01 p.m.

by

Vassilis L. Syrmos, Vice President for Research and Innovation  
University of Hawai'i System

### SB 1510 – RELATING TO UNIVERSITY OF HAWAII ASTRONOMY ENGINEERING AND INSTRUMENTATION

Chairs Kim and DeCoite, Vice Chairs Kidani and Wakai, and Members of the Committees:

The University of Hawai'i (UH) strongly supports SB 1510 which appropriates funds to establish a UH center for the design, development and fabrication of ground-based astronomical instruments; its planning and design; and ten full-time faculty positions.

While astronomy contributes well over \$200 million annually to Hawai'i's economy, most of the current technology development and fabrication that supports the astronomical facilities on Hawai'i Island and Maui occurs outside of the state. Similarly, within the state's astronomy workforce of about 400 engineering and technical positions, only 30 percent are born and raised in Hawai'i.

SB 1510 is the tip of the spear for the UH's new Space Science and Engineering Initiative that aims to create a stronger pipeline and diverse network of local engineers that are equipped with the necessary educational background, experience and facilities to support the growth and sustainability of astronomy in Hawai'i. It is the result of over six months of extensive collaboration between UH Mānoa College of Engineering Dean Brennon Morioka, Institute for Astronomy Director Doug Simons and UH Hilo Chancellor Bonnie Irwin.

The new center will serve as a multi-disciplinary hub for education, research and innovation for both students and faculty, including ties to UH's new aerospace engineering program and a new link to the Akamai Internship Program that has served as a highly successful STEM pathway to astronomy for women, Native Hawaiians and other underrepresented groups for over 20 years. As an advanced manufacturing and prototyping hub, the center will bring a new source of jobs and create revenue for the Hilo community, and at the same time, help to further diversify the state's economy.

The University of Hawai'i supports SB 1510 provided that its passage does not replace or adversely impact priorities as indicated in UH's BOR Approved Budget.

Thank you for the opportunity to testify on this measure.



# Hawai'i Island Chamber of Commerce

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## Testimony to the Senate Committee on Higher Education and the Senate Committee on Energy, Economic Development, and Tourism

Thursday, February 9, 2023 at 1:01PM  
Conference Room 229 & Videoconference

### **RE: SB1510 RELATING TO UNIVERSITY OF HAWAII ASTRONOMY ENGINEERING AND INSTRUMENTATION**

Aloha Chair Kim, Vice Chair Kidani, and Members of the Committee on Higher Education;  
Aloha Chair DeCoite, Vice Chair Wakai and Members of the Committee on Energy, Economic  
Development, and Tourism:

The Hawai'i Island Chamber of Commerce (HICC) is in full support of SB1510 and the benefits this  
initiative will bring to Hawai'i Island and our State.

Founded in 1898, HICC has been a part of our island's business community for 125 years. Our  
organization is comprised of over 300 member businesses and professionals from Hawai'i Island.  
We have embraced business and economic development since our humble beginnings.

We are honored to recognize the work of former Chamber Executive Secretary, Mitsuo Akiyama  
whose contributions on behalf of the Hawai'i Island Chamber of Commerce significantly  
contributed to building astronomy into the successful economic driver it is today on our Island.

Our aim is to support the University of Hawai'i and UH Hilo to further advance their role in  
workforce development, higher education opportunities, as well as research offered on Hawai'i  
Island. SB1510, a collaboration principally between UH Hilo, UH Mānoa College of Engineering,  
and UH Institute for Astronomy, is intended to support many positive outcomes for our Island,  
where most of the astronomy facilities are located. The long-term funding the bill seeks will  
support local workforce development with a focus on engineering jobs; advance engineering  
education, technology development and internship opportunities for island students; increase  
astronomy instrumentation design/build capacity; help train local engineering students for  
placement in jobs in Hawai'i astronomy; and diversify the local economy by increasing STEM  
opportunities.

We want our youth to know there is a future for them here in Hawai'i. Too many either move to  
the mainland after graduating or decide to not come "home" to Hawai'i after receiving their  
degree from a mainland university because of a lack of higher paying level jobs here. We want  
to change that, and the opportunities created through the passage of this bill will help fill this  
void.

Thank you for this opportunity to share our thoughts.



# Hawai'i Island Chamber of Commerce

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**SB-1510**

Submitted on: 2/8/2023 3:43:00 PM

Testimony for HRE on 2/9/2023 1:01:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Christian Wong	Testifying for Hawaii Science and Technology t	Support	Written Testimony Only

Comments:

Aloha,

As the director of a local STEM education nonprofit I'd like to express my support for SB1510 to help create a vibrant STEM industry here on Hawaii island. There is so much amazing research in a wide variety of STEM fields being done here on our island and we would like our keiki to be able to participate and help establish Hawaii as a world leader in STEM. Our kids are so bright, often representing our communities in national and international competitions in robotics, science and engineering fairs, Science Olympiad, math leagues etc. We have some of the brightest kids in the world right here in our community and we would like them to be able to raise their families here and use their talents have rewarding careers and to sustainably continue our Hawaiian values of taking care of the 'aina and kupuna. We want our keiki to have options; to be machinists, scientists, farmers, artists, mechanics, teachers, engineers; we want our keiki to be able to pursue any career they want. Please support SB1510 and give our keiki the tools they need to succeed. Mahalo!

February 8, 2023

Aloha Chair DeCoite and the Senate Committee on Energy, Economic Development and Tourism and Chair Kim and the Senate Committee on Higher Education,

The Kona-Kohala Chamber of Commerce **supports** Senate Bill 1510: Relating to the University of Hawai'i Astronomy Engineering and Instrumentation.

Since our founding in 1968, the Kona-Kohala Chamber of Commerce has worked to enhance the quality of life for our community through a strong, sustainable economy on Hawai'i Island. With 440 member businesses and organizations, our mission is to provide leadership and advocacy for a successful business environment in West Hawai'i.

The Kona-Kohala Chamber strongly supports the astronomy industry on Maunakea noting significant scientific discovery, global leadership, educational outreach, workforce pipelines, jobs and economic impact.

The summit of Maunakea, the highest mountain in Hawai'i, is home to a collection of world-renowned, scientifically productive observatories including W.M. Keck Observatory and Canada-France Hawai'i Telescope. In 2022, the University of Hawai'i Economic Research Organization released an updated economic impact study stating, "Astronomy continues to be a sizable and stabilizing source of economic activity." This includes an annual output of goods and services in the state of \$220.95 million, \$10.10 million in state taxes and 1,313 jobs statewide.

It makes perfect sense to establish a center for design, development, and fabrication of astronomical instruments within the University of Hawai'i (UH). SB 1510 appropriates funds for the center's planning and design and ten full-time equivalent faculty positions within this center.

This commitment will enhance cross-discipline programs between the UH Institute for Astronomy, UH Hilo and UH Mānoa as well as build the local workforce in an industry that diversifies our economy and provides good paying jobs.

We ask that legislators please pass SB 1510.

Sincerely,



Wendy J. Laros, President and CEO  
Kona-Kohala Chamber of Commerce



To: Senator Donna Mercado Kim, Chair  
Senator Michelle Kidani, Vice Chair  
Committee on Higher Education

Senator Lynn DeCoite, Chair  
Senator Glenn Wakai, Vice Chair  
Committee on Energy, Economic Development, and Tourism

From: Maunakea Observatories

RE: **SB1510 - Relating to University of Hawai'i Astronomy Engineering and Instrumentation - In Support**  
Thursday, February 9, 2023; 1:01 p.m.; Conference Room 229 & Videoconference

Aloha Chairs Kim and DeCoite, Vice Chairs Kidani and Wakai and Members of the Committees,

Mahalo for the opportunity to testify in strong support of SB1510: Relating to University of Hawai'i Astronomy Engineering and Instrumentation. We, the undersigned representatives of Maunakea Observatories, appreciate and support the act's purpose as articulated: "to sustain the continued prominence of Hawaii's astronomy by establishing and funding a center for design, development, and fabrication of astronomical instruments within the University of Hawai'i."

We believe that this proposal would be important in supporting the long-term success of Hawai'i astronomy, and more importantly, create a more robust high-tech workforce pipeline for local talent, while continuing to strengthen the diversity of Hawai'i Island's economy and the state as a whole. Valuable outcomes of this initiative will include:

- Supporting local workforce development with a focus on engineering jobs
- Diversifying the local economy by increasing STEM opportunities
- Increasing astronomy instrumentation design/build capacity on Hawai'i Island
- Helping train local engineering students for placement in jobs in Hawai'i astronomy

It is clear that in order for Maunakea astronomy to continue to lead the world in scientific achievement, we must continue to innovate. We are grateful for the opportunity for astronomy to provide a platform for creative and motivated local talent to find career pathways in engineering, including in the design, development and fabrication of sophisticated instrumentation. The University's College of Engineering is uniquely well-suited as an anchor for this kind of program, and through the well-established infrastructure of the university system, is well-placed to stand up a world-class center for the design, development and fabrication of astronomical instruments, supported by the proposed full-time equivalent faculty positions to support this endeavor. We stand ready to collaborate with the University in support of the students and faculty who will participate in the Center's success.

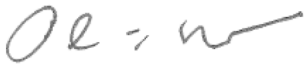
Thank you for the opportunity to testify before your committees in support of SB1510.

With aloha,



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Director Jean-Gabriel Cuby, Canada-France-Hawai'i Telescope



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Director Paul Ho, East Asian Observatory (James Clerk Maxwell Telescope)



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Director Hilton Lewis, W.M. Keck Observatory (Keck I and Keck II)



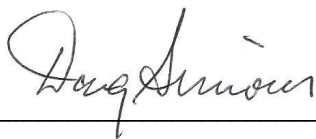
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Director John Rayner, NASA Infrared Telescope Facility



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Director Mark Chun, University of Hawai'i 2.2-meter Telescope



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Director Doug Simons, University of Hawai'i, Institute for Astronomy



## Japanese Chamber of Commerce & Industry of Hawaii

February 7, 2023

Re: SB 1510 Relating to University of Hawaii Astronomy, Engineering and Instrumentation

Senate Committees on Energy, Economic Development and Tourism  
Hawaii State Capital  
Conference Room 229  
415 S. Beretania Street Honolulu, HI 96813

Chair Mercado-Kim, Chair Decoite, vice chairs, and members of the committees,

My name is Toby Taniguchi, and I am the current President of the Japanese Chamber of Commerce and Industry of Hawaii (JCCIH). The Japanese Chamber of Commerce & Industry of Hawaii has been incorporated since 1951 and represents over 300 members of the business community. On behalf of JCCIH, I would like to testify in **strong support of SB1510** which establishes a center for design, development, and fabrication of astronomical instruments within the University of Hawai'i. Specifically, this effort will help to:

- Advance engineering education, technology development, internship opportunities, etc. on Hawai'i Island;
- Support local workforce development with a focus on engineering jobs;
- Increase astronomy instrumentation design/build capacity on Hawai'i Island;
- Diversify the local economy by increasing STEM opportunities;
- Help train local engineering students for placement in jobs in Hawai'i astronomy.

JCCIH has been a supporter of astronomy and education that provides for knowledge, skill and workforce development for our local youth. This bill will not only strengthen education opportunities, but will also further support the industry of astronomy for continued operational needs and much needed revenue for Hawai'i Island and the state as a whole. Thank you for your consideration and the opportunity to testify on this measure. We ask that you please support Senate Bill 1510.

Thank you for your time.  
Mahalo,

Toby Taniguchi  
President, 2022-2023

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**SB-1510**

Submitted on: 2/6/2023 1:21:50 PM

Testimony for HRE on 2/9/2023 1:01:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Alan Urasaki	Individual	Support	Written Testimony Only

Comments:

I stand in support of this measure, and ask the committee to amend the bill to removing "faculty". In this way, these positions would be available to those who are not "faculty" members in the University. For example, my son, who is getting his Masters in Electrical Engineering at UH, focusing on astronomical instrumentation, would see this as a pathway for future employment and developing the workforce in this area. If he was not a faculty member, he would not be eligible for these opportunities. This is a real example for which the purpose of this act would intend to provide.

I urge the committee to pass with the forementioned amendment. Mahalo.

**SB-1510**

Submitted on: 2/6/2023 2:32:13 PM

Testimony for HRE on 2/9/2023 1:01:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
cheryl B.	Individual	Comments	Written Testimony Only

Comments:

COMMENTS on this bill which establishes a center for design, development, and fabrication of astronomical instruments within the University of Hawai'i. Appropriates funds for the center's planning and design and ten full-time equivalent faculty positions within the center.

What amount of funds will be allotted for this center? How will it compare to the allocations given to other sciences and departments within the university? When will we get a complete disclosure on where exactly the touted \$200,000,000 impact on the economy would be found? Is that the salaries of the current astronomers and work force? How much will those ten full-time faculty positions make? Has anyone looked at how much the current astronomy faculty makes? Will this committee address the public concerns about UH's ties to the military and the affect it has on these islands? If this passes, who will hold this place accountable?

Yes, many good things come out of this department but I am not sure why it receives more attention than other departments at UH which are also internationally recognized. It is concerning that we don't see other bills supporting more departments doing amazing work as well.

As a retired educator, it would be nice to see the legislator think as highly of the UH dept. of education as it does the department of astronomy. Just my mana`o.

**SB-1510**

Submitted on: 2/6/2023 5:47:06 PM

Testimony for HRE on 2/9/2023 1:01:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Nimr Tamimi	Individual	Support	Written Testimony Only

Comments:

I am in support of SB1510, East Hawaii is the most economically depressed area of our State and can use any help it can get in creating more opportunities for our children so they don't have to leave for better opportunities elsewhere or turn to less desirable opportunities in our community. I believe this measure will help with this and could be a springboard for more/other opportunities in the future.

**SB-1510**

Submitted on: 2/6/2023 8:20:23 PM

Testimony for HRE on 2/9/2023 1:01:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Ka'iu Kimura	Individual	Support	Written Testimony Only

Comments:

Aloha nui e nā lāā o nā komike hanohano o ka ‘aha ‘ōlelo, aloha nui ‘oukou,

I humbly request your support of SB1510. I believe this initiative will provide invaluable opportunities for our local community - in particular our youth - in the field of engineering, building up local skill, talent, and workforce potential to meet the demands and needs of the astronomy sector.

Mahalo nui for your consideration of this request,

na Ka'iu Kimura

**Mitchell D. Roth**  
*Mayor*



**Lee E. Lord**  
*Managing Director*

**Robert H. Command**  
*Deputy Managing Director*

## County of Hawai'i Office of the Mayor

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February 8, 2023

Chair, Senator Lynn DeCoite  
Vice Chair, Senator Glenn Wakai  
Senate Committee on Energy, Economic Development, and Tourism

Chair, Senator Donna Mercado Kim  
Vice Chair, Senator Michelle N. Kidani  
Senate Committee on Higher Education

Hawai'i State Legislature  
415 S. Beretania Street  
Honolulu, Hawai'i 96813

Subject: S.B. 1510 RELATING TO UNIVERSITY OF HAWAII ASTRONOMY ENGINEERING  
AND INSTRUMENTATION  
Hearing Date: Thursday, February 9, 2023, at 1:01 p.m.  
Time/Place of Hearing: Via Video Conference, Conference Room 229

Aloha Chair DeCoite, Vice Chair Wakai, and members of the Committee on Energy, Economic Development, and Tourism; Chair Mercado Kim, Vice Chair Kidani, and members of the Committee on Higher Education,

The County of Hawai'i strongly supports SB 1510, which establishes and funds a center for the design, development, and fabrication of astronomical instruments within the University of Hawaii (UH). Hawai'i has a well-deserved reputation for astronomical excellence and the creation of this center will help ensure that we begin to enhance opportunities for local engineers and technicians as a part of the UH's new Space Science and Engineering Initiative. As Act 255 noted last year, support of astronomy remains a policy of the State of Hawai'i and this center demonstrates what collaboration can lead to, as the UH College of Engineering, the Institute for Astronomy and the University of Hawai'i at Hilo have been hard at work developing a multi-disciplinary hub for education, research, and innovation that will serve students and faculty for the long-term.

We are particularly pleased that this bill has the potential to encourage our young people to develop their talents for science, technology, engineering, and mathematics (STEM) while showing them that they can have a career on Hawaii Island that provides quality work, a place to raise a family, and pride in their vocation.

Thank you for the opportunity to testify in support of this bill and we encourage the Committees to move this legislation forward with positive recommendations for Senate passage.

Mahalo,

A handwritten signature in black ink that reads "Mitchell D. Roth". The signature is written in a cursive style with a large, sweeping initial "M".

Mitchell D. Roth  
Mayor  
County of Hawai'i



## *Ke Kula 'O Nāwahīokalani'ōpu'u*

*"No 'Ane'i Ko Kākou Ola"*

SB1510: Relating to University of Hawai'i  
Astronomy, Engineering and Instrumentation

### **STRONGLY SUPPORT**

E ka Luna Ho'omalū DeCoite, ka Hope Luna Ho'omalū Wakai a me nā lālā Kōmike,  
Aloha nui kākou,

My name is Dr. Kauanoe Kamanā. I am the director of Ke Kula 'O Nāwahīokalani'ōpu'u, a P-12 Hawaiian language medium laboratory school established by the 1997 state legislature when it established the Hawaiian language college at the University of Hawai'i at Hilo. I write in **strong support of SB1510**.

SB1510 provides an important opportunity for students from Hawai'i Island, other neighbor islands, and from elsewhere who are attracted to studying in a rural area.

High school students from Nāwahīokalani'ōpu'u have had opportunities to learn more about astronomy, engineering, and science in general through engaging in educational programs and student internships at 'Imiloa. 'Imiloa involved them in discussions with formal academic researchers and institutions from various scientific disciplines in developing Hawaiian names for astronomical bodies. They were also involved in building and designing 'Imiloa educational project displays using the Hawaiian language and reflecting the Hawaiian worldview. Those opportunities have awakened their interest in engineering and applied sciences. This bill will provide students such as ours at Nāwahīokalani'ōpu'u, an opportunity to gain experience and training for high tech positions here on Hawai'i Island and in other communities throughout Hawai'i. Working collaboratively with scientists, Hawaiian language and cultural experts and fellow Hawaiian speaking peers from across our state will provide important opportunities to grow our language and cultural worldview. We support Hawai'i's young people and their engaging in fields of work that will provide for their families and extended 'ohana and thereby ensure that they will prosper here at home.

Me ka mahalo 'oia'i'o,

Principal, Director  
Ke Kula 'O Nāwahīokalani'ōpu'u

# The Success Factory

nextechhawaii.org



February 8, 2023

## **STRONG SUPPORT for SB2510 RELATING TO UNIVERSITY OF HAWAII ASTRONOMY ENGINEERING AND INSTRUMENTATION.**

Dear Chairs DeCoite and Kim, Vice Chairs Wakai and Kidani, and Committee members.

I'm testifying on behalf of **The Success Factory**, a 501(c)(3) non-profit that serves as an economic development initiative by inspiring and building STEM career readiness through NexTech STEM Programs for Hawaii Island youth.

**We strongly support SB2510, which will** *Establish a center for design, development, and fabrication of astronomical instruments within the University of Hawaii. Appropriates funds for the center's planning and design and ten full-time equivalent faculty positions within the center.*

**SB2510** will help Hawaii further its leadership role in astronomy, create local capacity for the design, engineering, and manufacture of critical technology, facilitate the creation of much-needed local job and career opportunities, and catalyze innovations that will benefit our general economy.

Mahalo for this opportunity to testify in support of SB2510. Please support this measure.

A handwritten signature in black ink, appearing to read "Noel Morin", with a long horizontal stroke extending to the right.

Noel Morin  
President  
The Success Factory  
Hilo, Hawaii



**SB-1510**

Submitted on: 2/7/2023 11:41:00 AM

Testimony for HRE on 2/9/2023 1:01:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Bruce K. Meyers	Individual	Support	Written Testimony Only

Comments:

I support this bill as it will help our Hawaii Island people have more local options to catapult them into the engineering profession. I am the president of a Hawaii Island engineering firm and have hired several graduates from Manoa who are from the East Hawaii area. This would help up- and-coming high school graduates and college undergraduates who want to live in their home town to choose a profession that I know personally can provide an excellent living.

**SB-1510**

Submitted on: 2/7/2023 12:00:11 PM

Testimony for HRE on 2/9/2023 1:01:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Neal Herbert	Individual	Support	Written Testimony Only

Comments:

This a great idea that would create local jobs and add to Hawaii's economy, gaining multiple times the program costs...really a no-brainer.

Neal Hebert, PE

nfherbert@twc.com

Aloha Chairs Kim and DeCoite, and Vice-Chairs Kidani and Wakai,

My name is Chase Urasaki, a second-year Masters of Science student in Electrical Engineering at UH and I am writing in **strong support** of SB1510 - RELATING TO UNIVERSITY OF HAWAII ASTRONOMY ENGINEERING AND INSTRUMENTATION.

I graduated from Aiea High School in 2015 and attended UH Manoa to obtain my undergraduate degrees in Astrophysics and Math in 2019. During my time as an undergraduate, I have done research under faculty in the institute for astronomy as well as participated in the Akamai internship program, where I was fortunate enough to do research at the new Daniel K. Inouye Solar Telescope on Haleakala on Maui. While I am grateful for all of the opportunities and experiences that I have had here, my research interests have always laid with instrumentation.

Instead of accepting a position on the mainland for a PhD program in astronomy, I decided to first pursue a Master's degree here at UH with the intention of going back to complete a PhD in astronomy. This led me to my current work, where I am working with the Hawai'i Space Flight Lab (HSFL) to develop a way to optically measure and characterize micro-vibrations in CubeSats. CubeSats are a quickly growing way that institutions are building, developing, and launching their own small satellites into orbit to achieve specialized space based observations. This instead of the more traditional method of writing observing proposals and hoping they are awarded time by committees for ground or space-based facilities like those on Mauna Kea or the new James Webb Space Telescope. In my opinion, CubeSats ultimately cannot replace these facilities as their technological capabilities are limited, but they do allow for the implementation and improvement of novel and exciting concepts. Recognizing this, the HSFL has already started to work closely with some of the faculty at the IfA to develop concepts for space missions to help keep UH at the forefront of astronomical discoveries. In this way, I think that the collaboration in the spirit SB1510 has already begun - and this bill will be a way to formalize this work and give it the push to expand.

Astronomy in Hawaii is and always has been a fantastic pathway for good-paying, clean, and high-tech jobs. It is multifaceted, combining aspects of physics with engineering, math, and computer science. With all the talk of reducing the 'brain drain' that we have here and the concern with a lack of opportunities for our children here, it makes me optimistic to see that the legislature has introduced this measure as a way to address this.

My only comments about this bill as written is the **amendment of "Faculty Positions" to language such as "working and practicing professionals"**. I am concerned that the specificity of faculty creates a restriction to the people who can potentially be hired for these positions. These positions should be filled with those who have the expertise to apply for and get awarded grants for the funding to design, develop, and fabricate these instruments. These individuals may not be at the faculty level, but sometimes employees or engineers at the university or within departments.

I feel a strong personal responsibility to provide testimony on this bill - having been born and raised here, gone to a public high school, graduated from the UH and continuing my education there, and look forward to a potential career in astronomy in Hawai'i. The creation of the center and funding for it as outlined in this measure are tailor-made for someone with my background, interests and aspirations. As a result, I see this bill not only as an investment into my future, but an investment into the future of the exceptional programs, faculty, and facilities we have at UH, and an investment into the future of STEM students in Hawai'i.

If you have any questions, please do not hesitate to reach out to me at [chasemu@hawaii.edu](mailto:chasemu@hawaii.edu).

Mahalo for your time and consideration.