

JAN 25 2023

A BILL FOR AN ACT

RELATING TO UNIVERSITY OF HAWAII ASTRONOMY ENGINEERING AND
INSTRUMENTATION.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

1 SECTION 1. The legislature finds that astronomy
2 contributes over \$200,000,000 annually to Hawaii's economy,
3 creates workforce opportunities throughout the State, and is an
4 internationally recognized discipline of academic and research
5 excellence at the University of Hawaii. Although the
6 observatories on the islands of Hawaii and Maui are readily
7 associated with Hawaii's astronomy industry, the industry is
8 sustained by a wide range of ground-based support, technical
9 expertise, and innovation in fields as diverse as remote
10 sensing, opto-mechanics, robotics, and autonomous devices.

11 These ground-based activities take place, in part, at the
12 several campuses and academic and professional programs of the
13 University of Hawaii, including at the University of Hawaii at
14 Hilo, University of Hawaii institute for astronomy facilities on
15 Hawaii, Maui, and Oahu, and University of Hawaii at Manoa
16 college of engineering. These support activities, in turn, draw



1 upon and nurture a diverse, talented, and robust science,
2 technology, engineering, and math-trained workforce. However, a
3 significant amount of the technology and instruments used by
4 Hawaii's astronomical facilities are developed and fabricated
5 outside of Hawaii.

6 The legislature further finds that as the sole institution
7 of public higher education in the State, the University of
8 Hawaii has the unique capacity to draw upon its academic
9 disciplines and professional engineering programs to serve as
10 the hub for Hawaii astronomy engineering and instrument
11 development. The University has successfully established and
12 administers cross-discipline centers, such as the University of
13 Hawaii institute for astronomy and University of Hawaii at Manoa
14 school of ocean and earth science and technology.

15 The legislature further finds that the University of Hawaii
16 is also uniquely situated to create viable career pathways in
17 astronomical instrumentation through its network of community
18 colleges. The demand for more formal educational, research, and
19 career opportunities in space sciences and engineering fields
20 continues to grow, especially with renewed federal and
21 international interest in expanded space exploration. However,



1 less than fifteen per cent of engineering schools nationwide
2 have focused or dedicated aerospace or related programs directly
3 supporting these career paths. The University of Hawaii is
4 poised to address this need, particularly through its workforce
5 development programs at Maui college and Hawaii community
6 college. The existing observatory facilities are appropriate
7 platforms for instrumentation and technology development,
8 facility innovation, and operational upgrade and advancement
9 investigations and could thus expand employment opportunities
10 for Hawaii's local high-tech workforce. In addition, a new
11 facility dedicated to the development and fabrication of
12 astronomical instruments would increase the instructional and
13 educational offerings to Hawaii's students by providing student
14 internships, undergraduate research opportunities, and exposure
15 to engineering careers in astronomy.

16 The legislature further finds that due to astronomy's
17 importance to the State, establishing and funding a center
18 dedicated to designing, developing, and fabricating instruments
19 used in astronomy are in the public interest and are matters of
20 statewide concern. The new center will augment and complement
21 the existing core University of Hawaii faculty within the



1 college of engineering, institute of astronomy, school of ocean
2 and earth science and technology, and University of Hawaii at
3 Hilo who specialize in additive manufacturing and prototyping;
4 electronics; mechanical; systems and servo controls; optics;
5 software; lasers; and structural engineering. Further, the
6 University would be responsible for the physical siting,
7 organizational structure, and management of the center.

8 Therefore, the purpose of this Act is to sustain the
9 continued prominence of Hawaii's astronomy by establishing and
10 funding a center for design, development, and fabrication of
11 astronomical instruments within the University of Hawaii,
12 including the funding of ten full-time equivalent faculty
13 positions.

14 SECTION 2. (a) There is established a center for design,
15 development, and fabrication of astronomical instruments within
16 the University of Hawaii.

17 (b) The University of Hawaii shall be responsible for the
18 physical siting, organizational structure, and management of the
19 center for design, development, and fabrication of astronomical
20 instruments established pursuant to subsection (a).



1 SECTION 3. There is appropriated out of the general
2 revenues of the State of Hawaii the sum of \$2,000,000 or so much
3 thereof as may be necessary for fiscal year 2023-2024 for the
4 planning and design of a center for design, development, and
5 fabrication of astronomical instruments within the University of
6 Hawaii.

7 The sum appropriated shall be expended by the University of
8 Hawaii for the purposes of this Act.

9 SECTION 4. There is appropriated out of the general
10 revenues of the State of Hawaii the sum of \$1,900,000 or so much
11 thereof as may be necessary for fiscal year 2023-2024 and the
12 same sum or so much thereof as may be necessary for fiscal year
13 2024-2025 for ten full-time equivalent (10.0 FTE) faculty
14 positions within the center for design, development, and
15 fabrication of astronomical instruments established pursuant to
16 section 2 of this Act; provided that the sums appropriated for
17 each fiscal year shall be expended as follows:


- 18 (1) \$1,150,000 for recurring ten full-time equivalent
19 (10.0 FTE) faculty positions; and
20 (2) \$750,000 for non-recurring start-up expenses for ten
21 positions.



1 The sums appropriated shall be expended by the University
2 of Hawaii for the purposes of this Act.

3 SECTION 5. This Act shall take effect on July 1, 2023.

4

INTRODUCED BY: 



S.B. NO. 1510

Report Title:

University of Hawaii; Astronomy; Instruments; Center; Positions; Appropriation

Description:

Establishes 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.

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