



# **UNIVERSITY OF HAWAII SYSTEM**

## **Legislative Testimony**

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**Testimony Related to  
Senate Bill 1042 SD1**

**RELATING TO TRANSPORTATION**

**Presented before the  
House Transportation Committee  
The Twenty-Fourth Legislature**

**March 14, 2007**

**by**

**Michael Maberry**

**Assistant Director  
Institute for Astronomy  
University of Hawai'i at Mānoa**

**and**

**Richard Wainscoat**

**Astronomer, Institute for Astronomy, University of Hawai'i at Mānoa  
and  
President, Commission 50, International Astronomical Union  
Protection of Existing and Potential Observatory Sites**

Chair Souki, Vice-Chair Nishimoto, and members of the Committee. My name is Mike Maberry and I am here today to submit this testimony in my capacity as the Assistant Director of the University of Hawai'i at Mānoa, Institute for Astronomy.

As our infrastructure attempts to keep pace with the growth of our population, we are facing an inevitable degradation of our night sky. The summits of Haleakalā and Mauna Kea are two of the five best sites in the world from which to conduct astronomical and space surveillance research. Every 1% of artificial brightening of the night sky results in an effective loss of telescope aperture of 1%. Research activities at the summits of Haleakalā and Mauna Kea represent an important, environmentally clean component of our state's economy that needs to be protected.

Our islands are also home to endangered night-flying birds and sea turtles that can become disoriented and injured due to light pollution.

Many of the tourists who come to Hawai‘i enjoy our pristine and tranquil night sky. Most rarely have an opportunity to see a night sky with so little light pollution. From a tourism standpoint, it is as important to maintain and protect our night sky, as it is to keep our water and beaches clean.

That being said, many residents of Honolulu have already lost their ability to see the Milky Way, and only about the 20 brightest stars can be seen in the sky above central Honolulu. From a dark location on the neighbor islands, you can see 2,000 or more stars.

Additionally, recent studies suggest that overexposure to broad-spectrum light at night contributes to health problems such as the growth of cancer cells in humans.

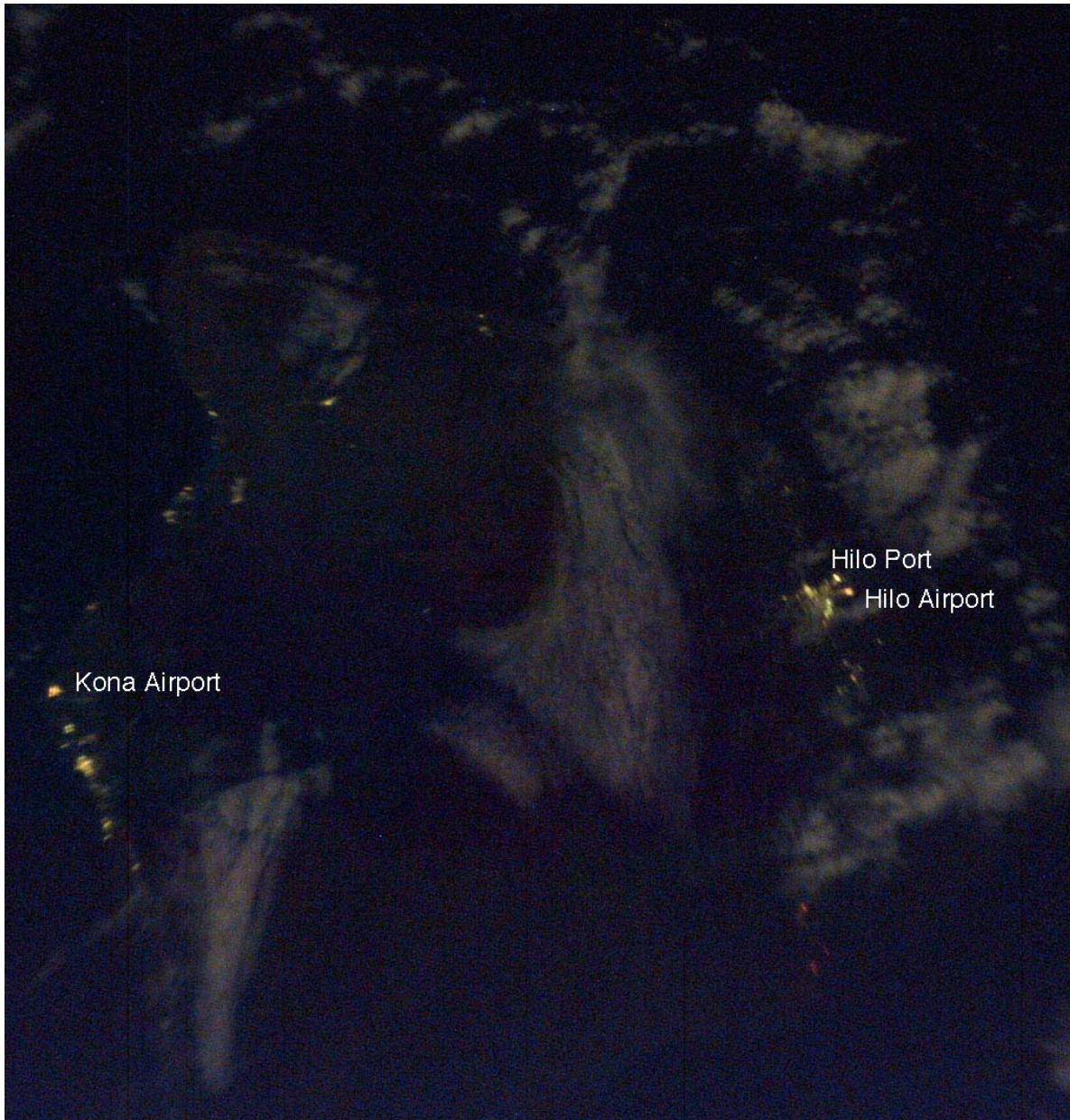
The counties of Hawai‘i and Maui have taken steps to slow down and to some extent recover their night sky by passing ordinances that require the use of properly shielded lighting systems. These more efficient shielded light fixtures direct the light we are generating, which comes at great expense to our economy and environment, downward to illuminate the area where people are, not up into the night sky. Because of the importance of tourism to our state's economy, and the potential health risks of unnecessary light pollution, we anticipate Honolulu and Kauai counties to enact lighting ordinances in the near future.

Unfortunately, some of the major sources of night-light are not under the jurisdiction of the counties.

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At the request of the Institute for Astronomy, NASA astronaut Dr. Ed Lu, a former University of Hawai‘i researcher, obtained nighttime images of Hawai‘i from the International Space Station. These images clearly illustrate that some of the major sources of light pollution on the islands of Hawai‘i and Maui are the airports, harbors, and roadways.



The Kawaihae harbor and Waimea-Kohala airport are also visible in the photograph.

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What this bill will do, to the extent that is practical and not in conflict with any safety regulation, ensure that in the future, when installing new lighting systems at airports, harbors and on state highways, that the state will use lighting systems that comply with the more stringent county requirements. As this bill will only apply to new lighting systems, it will have little or no cost impact on the state.

The University of Hawai‘i strongly supports this bill.

Thank you for your support of our program and for the opportunity to present this testimony.