



UNIVERSITY OF HAWAI'I SYSTEM

Legislative Testimony

**Testimony Related to
House Bill 155 HD1 SD1**

RELATING TO THE DEPARTMENT OF TRANSPORTATION

**Presented before the
Ways and Means Committee
The Twenty-Fourth Legislature**

March 28, 2007

by

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Chairs Baker and Vice-Chair Tsutsui 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.

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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 exposure to bright light at night contributes to health problems such as the growth of cancer cells in humans.

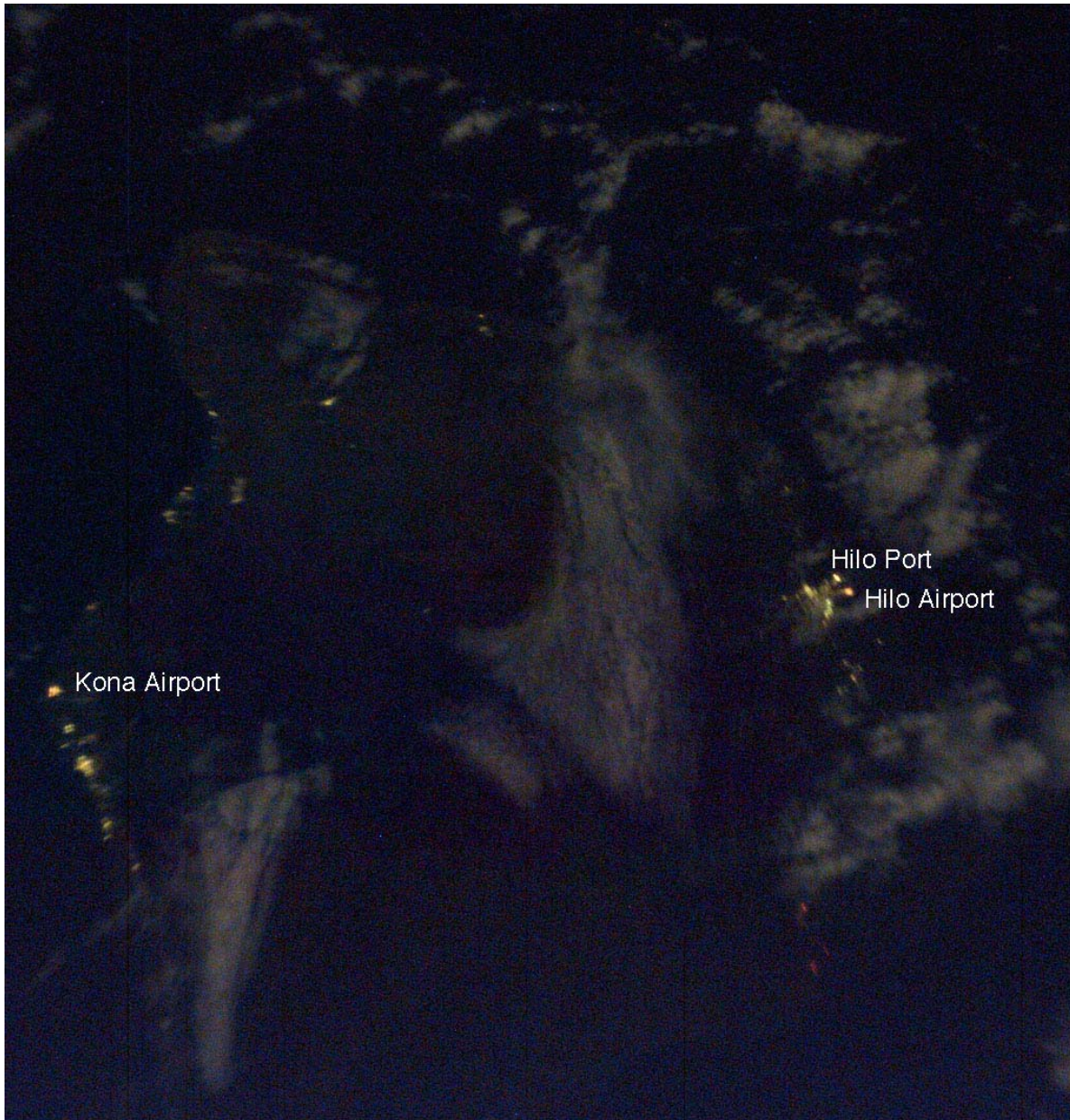
The counties of Hawai‘i and Maui have taken steps to slow down the degradation of the dark night sky and to some extent recover their night sky by passing ordinances that require the use of properly shielded lighting systems. These more efficient shielded light fixtures direct the light we are generating, 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, the potential health risks and environmental harm caused by unnecessary light pollution, and because of the energy savings and safety enhancements that can be achieved by careful lighting, we anticipate that the Honolulu and Kaua‘i counties will 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.

Because the city lights of Honolulu already affect the night sky over Haleakalā, it is important that this bill is applicable statewide — not just in the counties of Hawai‘i and Maui. When a lighting ordinance is enacted in the city and county of Honolulu, this bill will then ensure that new lighting at the airports, harbors, and highways on Oahu matches the county requirements.

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.