

Economic Impact of Astronomy in Hawaii: 2019 Update Executive Summary

January 14, 2022

By Steven Bond-Smith, Carl Bonham, Kimberly Burnett, Christopher Wada

Hawaii’s astronomy sector generates economic activity through direct purchases from local businesses, salaries and wages paid to employees who spend at least part of their income locally, and expenditures by students and visitors. In collaboration with the Institute for Astronomy, UHERO used survey data collected from astronomy related entities throughout the state to estimate the astronomy sector’s total economic impact in each of Hawaii’s four counties for calendar year 2019. Economic impacts—defined here as the direct, indirect, and induced economic activities generated by the astronomy sector’s expenditures in the state—were calculated using DBEDT’s 2017 Inter-County Input-Output Table, which takes into account inter-county feedback and spillover effects.

In 2019, local astronomy related expenditures in the state totaled \$110.02 million (up from \$99.43 million in 2012)¹ with \$57.18 million, \$35.22 million, \$0.28 million, and \$17.33 million spent in Hawaii, Honolulu, Kauai, and Maui counties respectively (Table 1, Fig 1). The \$11 million difference in statewide spending can be largely attributed to higher expenditures reported in Honolulu and Maui counties in 2019. Including indirect and induced benefits and adjusting for inter-county feedback and spillover effects, the astronomy sector had a total impact on the output of goods and services in the state of \$220.95 million. Astronomy activities also generated \$68.05 million in labor income, \$10.10 million in state taxes, and 1,313 jobs² statewide (compared to \$189.47 million, \$58.99 million, \$9.20 million, and 1,394 jobs respectively in 2012). County-level economic impacts are summarized in Table 1.

Astronomy continues to be a sizable and stabilizing source of economic activity. Astronomy output for 2019 was equivalent to 78% of the total farming output statewide, or 21% of the output from the private educational services sector (Fig 2).

Table 1. Economic Impacts of Astronomy-Related Local Expenditures by County

County	Local expenditures (millions of 2019 \$)	Impacts (millions of 2019 \$)			Impact (Jobs)
		Output	Income	State Taxes	#
Hawaii	57.18	101.68	28.52	4.08	611
Honolulu	35.22	89.96	30.42	4.85	517
Kauai	0.28	1.59	0.41	0.06	9
Maui	17.33	30.72	8.69	1.11	176
State	110.02	220.95	68.05	10.10	1,313

1 Values from the 2014 study, “[The Economic Impact of Astronomy in Hawaii](#)”, which were reported in 2012 dollars, are adjusted to 2019 dollars to allow for direct comparison with the current study.

2 Although total spending increased in the astronomy sector, the jobs impact declined due to increased labor productivity.

Figure 1. Share of Local Expenditures by County

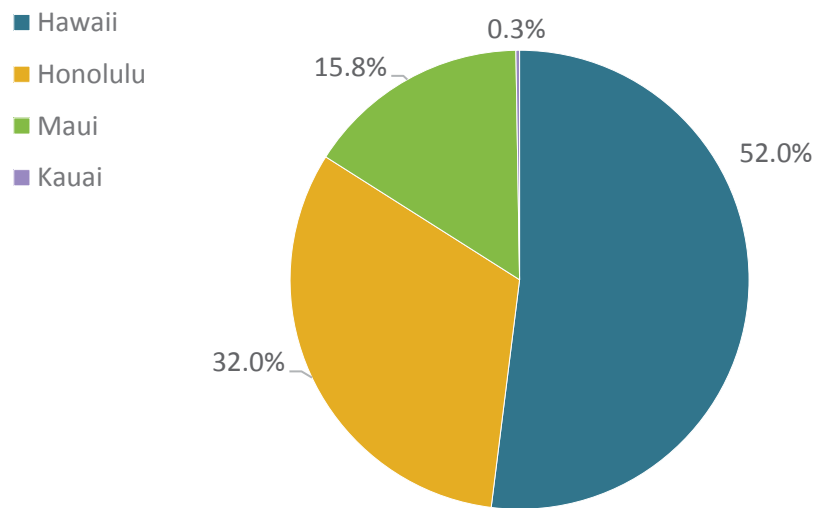


Figure 2. A Comparison of Astronomy to Other Sectors in the Economy

