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Big Island group reaches for the moon

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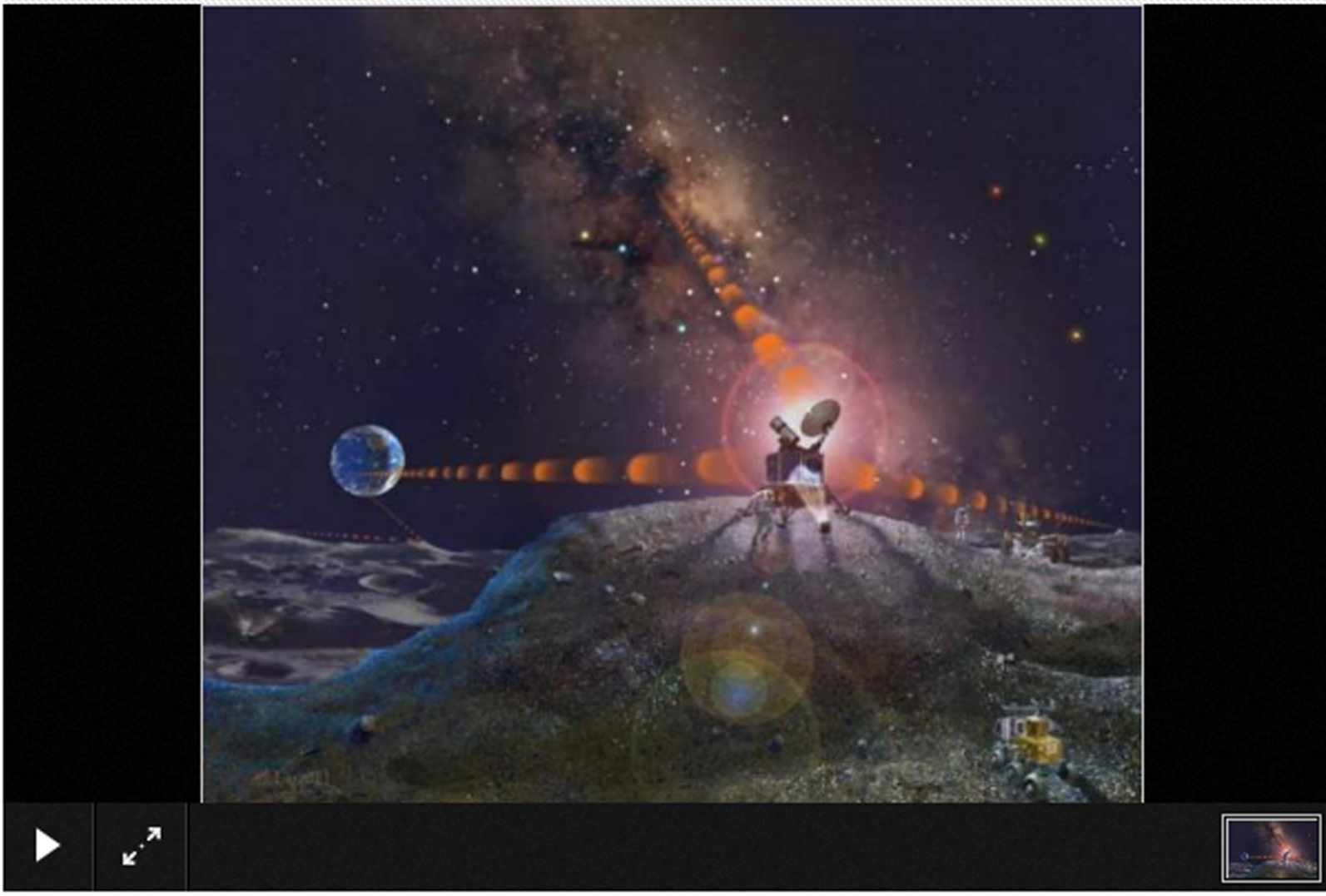

By TOM CALLIS Hawaii Tribune-Herald

As the debate about the future of Mauna Kea — and whether one of the world's largest telescopes should be built there — continues to simmer, a Hawaii Island organization is quietly working to place a telescope on another mountain high above the Earth.

The International Lunar Observatory Association, a small but ambitious organization based in Waimea, is raising money to land a 2-meter telescope on the moon, establishing what would be the first semi-permanent observatory on its surface.

ILOA founder and director Steve Durst, a historian turned space exploration enthusiast, said he sees the project as a way for humanity to fulfill its destiny of becoming a "multi-world species."

The organization's goal is to land the small telescope on Malapert mountain at the moon's south pole, with data being transmitted back to Hawaii for use by astronomers and students.

But for a "precursor mission," ILOA is teaming up with Moon Express, a Google Lunar XPRIZE participant, to take a 3-inch telescope to the moon in 2017, Durst said. Since that equipment likely will land near the equator, the extreme temperature swings will only allow it to operate for up to two weeks, he said.

For its flagship mission, which doesn't yet have a launch date, ILOA says it has invested between $4 million and $5 million during the last decade and has teamed up with Canadian aerospace company Canadensys. The total project budget is north of $150 million, though much of that it hopes to have covered by a joint venture partner.

With fundraising ongoing, Durst estimated the project is about "40 percent" complete.

Recently, the group sent a letter to Gov. David Ige asking for his support.

While once the realm of science fiction, placing observatories on the moon is the next step for astronomy, researchers said during an ILOA "Galaxy Forum" Thursday evening in Waimea.

An advantage is the absence of an atmosphere, which distorts light. But there also are setbacks, including significant limitations in telescope size.

If space-based observatories ever make telescopes on Earth obsolete, it won't be in our lifetimes, they cautioned.

"I'm feeling pretty secure about my job," said Doug Simons, executive director of the Canada-France-Hawaii Telescope on Mauna Kea.

Lunar observatories could help advance the study of other galaxies, an area where telescopes on Mauna Kea currently dominate, said Pierre Martin, an assistant astronomy professor at University of Hawaii at Hilo.

With help from the ILOA, he said he was able to work with the Chinese space program to select the first galaxy to be studied from the moon using a small telescope attached to the Chang'e 3 lunar lander. An image was successfully captured last December.

"Clearly, astronomy from the moon is possible now," Martin said. "It's happening."

Before the question could be asked, he said an observatory as large as the Thirty Meter Telescope, which will sit 180 feet tall on Mauna Kea, is too big to take to the moon.

"You would have to live there for many years" building it, Martin said. "But this is the first step."

Hawaiian cultural practitioners Pua Case, one of six appellants challenging TMT's land use permit before the state Supreme Court, and Kimo Pihana, an ILOA board member, also talked at the forum about the ongoing controversy surrounding the giant observatory's construction.

Some Hawaiians strongly oppose development on Mauna Kea because they view it as the island's sacred piko, or navel, and the place where sky, earth and stars find union. It's also home to gods, shrines and several individual sacred sites, such as Lake Waiau.

The mountain, the tallest point in the Pacific, also is prized by astronomers for its clear skies. Simons said four of the five most scientifically productive telescopes in the world are located on Mauna Kea.

TMT opponents have blocked construction crews on the mountain three times this year. They plan to stop workers from ascending the mountain again for machinery maintenance and other "site preparation activities" later this month.

No date was announced, but Case said she expects it to be this week. Opponents have been preparing with prayers and other ceremonies on the mountain.

Calling TMT the "tipping point," she said she has a "responsibility, a duty and privilege to say enough is enough" regarding development on Mauna Kea, currently home to 13 telescopes.

"It's not about science versus culture," Case said. "It's about an 18-story building on our mountain."

Gemini is the largest observatory currently on the mountain at 151 feet tall.

She said she doesn't believe TMT meets the criteria for building within a conservation district, one of the issues the Supreme Court is reviewing.

While highlighting the history of modern astronomy in Hawaii as far back as King Kalakaua's reign, Pihana, who also worked as a Mauna Kea ranger, said TMT is too big for the mountain.

"Bigger doesn't mean better, and that big telescope they are talking about won't make anything better," he said.

Simons, while addressing the conflict on the mountain, noted that Hawaii's strength comes from its diversity and that it's important for everyone's viewpoint to be heard.

"By honoring each other, we honor the mountain," he said.

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