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COPESE
COORDENADORIA PERMANENTE DE SELEÇÃO
UNIVERSIDADE FEDERAL DO PIAUÍ

EXAME DE PROFICIÊNCIA DE LEITURA EM LÍNGUA ESTRANGEIRA

DATA: 31/05/2015 HORÁRIO: das 8 às 11 horas

CADERNO DE PROVA

Idioma:
INGLÊS

Área de Pesquisa:
(1) CIÊNCIAS BIOLÓGICAS, CIÊNCIAS AGRÁRIAS E CIÊNCIAS DA SAÚDE

LEIA ATENTAMENTE AS INSTRUÇÕES

- ☑ Esta prova é constituída de um texto técnico-científico em língua estrangeira, seguido de 5 (cinco) questões abertas relativas ao texto apresentado.
- ☑ É permitido o uso de dicionário impresso, sendo vedados trocas ou empréstimos de materiais durante a realização do Exame.
- ☑ As respostas deverão ser redigidas em português e transcritas para a **Folha de Respostas,** utilizando caneta esferográfica com **tinta preta** ou **azul, escrita grossa.**
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- ☑ Nenhum candidato poderá entregar o Caderno de Prova e a Folha de Respostas antes de transcorridos 60 minutos do início do Exame.
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Native Hawaiians halt construction of giant telescope

14:53 10 April 2015 by **Michael Lemonick** Available at http://www.newscientist.com/article/dn27324-native-hawaiians-halt-construction-of-giant-telescope.html?full=true&print=true#.VSy5zfnF_OU

Mauna Kea is a holy site, say protesters *(Image: AP Photo/Anne Keala Kelly)*

Sarah Ballard studies exoplanets for a living, so like many other astronomers around the world she's eager to see the Thirty Meter Telescope (the TMT for short) go into operation in the early 2020s. With a light-collecting mirror nine times larger than the ones on the twin Keck Telescopes, currently the world's most powerful, the TMT will revolutionise the search for Earth-like worlds around other stars, and be able to peer to the very edges of the visible universe.

But Ballard, an astronomer at the University of Washington, in Seattle, is conflicted. A group of indigenous Hawaiians are determined that the TMT won't be built. They're incensed by the telescope's location perched on top of the extinct volcano Mauna Kea, on the Big Island of Hawaii – a holy site for native Hawaiian people. After an increasingly vocal series of protests that have landed 31 activists in jail, Hawaii's governor, David Ige, issued a week-long moratorium on construction to all for "further dialogue" between the protesters and the telescope builders.

Construction criticism

It's not the first time native Hawaiians have been upset by the powerful telescopes dotted around the ash fields on the mountain's 4200-metre summit – two Kecks, the Subaru, the Gemini and a host of smaller instruments. But in the past, the rest of the world has remained largely unaware.

That's no longer the case, thanks to the #protectMaunakea hashtag on Twitter, a campaign on Facebook and several blogs. "Back in the day, we had the *LA Times* writing about us," says Kaloha Piscotta, part of a group suing to block the project, "but now we have social media."

And thanks to Ballard, astronomers are now aware of the issue as well. She learned about the controversy from Keolu Fox, a native Hawaiian friend who studies genomics technology at the University of Washington. Ballard posted a summary of what he had told her on the Diversity in Physics and Astronomy Facebook group, setting off a long and remarkably receptive comment thread.

Not every scientist feels conflicted. "If we were talking about putting a coal-fired power plant or a factory or something up there, I'd be the first to say 'hold on'," says David Jewitt, an astronomer at the University of California, Los Angeles, who uses big telescopes to study the outer solar system. "But we're not. Astronomy is about as pure and as clean as you can get, so what's the big deal?"

The Thirty Meter Telescope will allow astronomers to peer to the very edges of the visible universe *(Image: TMT Observatory*

Ballard is less sure. "From talking with Keolu, it does seem like there's something unjust about TMT as it's currently being constructed. It seems to me that the Hawaiian people are not being intrinsically unreasonable."

Part of the problem may also be that the TMT feels like the final straw for a people who have been treated pretty shabbily in the past – from the exploitation of their resources by Western imperialists to a US-backed coup that overthrew the Hawaiian kingdom's last Queen, Lili'uokalani, in 1893, leading to US annexation of the islands a few years later. "Our culture is dying," says Fox. "By 2040, there won't be any pure Hawaiian people left on planet Earth."

Given that history, it's perhaps not so surprising that native Hawaiians are rallying to protest against the largest construction project to date on top of their sacred mountain. They also insist that the TMT project does not comply with environmental regulations. "It's a watershed area," says Piscotta. "There are pretty clear rules about building there." The company building TMT has ignored these rules, she says. That's largely the basis for the group's legal challenges.

Impact statement

But most of the protesters' complaints have taken Sandra Dawson, TMT's Hawaii Community Affairs representative, by surprise. "We chose a site that has no archaeological shrines, has not been the site of cultural practices, and isn't visible from distance of holy sites," she says.

Dawson also disputes the accusation that the company has flouted environmental regulations. "I've been told we had one of the most thorough environmental impact statement processes ever." The TMT had not just environmental scientists involved, but also historians and indigenous religious practitioners she says.

"When the statement was completed, no one challenged it. We thought that by having all the meetings we had over last seven years, many of them in indigenous Hawaiian communities, the information would get out. We now know that that's not the case. We're going to work harder to make that happen."

Despite the protests gaining attention around the world, it's hard to imagine that the TMT project, which is budgeted at more than $1 billion and which is backed by a long list of major research universities, will not be built.

But the controversy has forced a lot of astronomers to think hard about issues they've rarely confronted in the past. "I'm nervous about the effects of speaking out might have on my career," says Ballard, who is searching for faculty jobs. "I'm afraid of rocking the boat. But I've also been nervous speaking up about sexual harassment. Just being afraid isn't sufficient reason to stay silent."

EM HIPÓTESE ALGUMA, SERÁ CONSIDERADA A RESPOSTA NESTE CADERNO.

Depois de ler o texto, responda as questões a seguir em português.

QUESTÃO 01 - Por que a construção do TMT tem causado tanta controvérsia? Cite uma razão cultural e uma histórica apresentadas no texto.

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QUESTÃO 02 – O TMT não é o primeiro telescópio gigante a ser construído no Havaí. Mencione outros dois telescópios construídos anteriormente, que também não foram bem aceitos pela comunidade local, e o que, segundo o texto, fez com que as manifestações contra a construção do TMT fossem mais divulgadas desta vez.

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QUESTÃO 03 - Quais são os argumentos a favor da construção do TMT apresentados por David Jewitt, astrônomo da Universidade da Califórnia?

QUESTÃO 04 - Por que a construção do TMT é tão aguardada por astrônomos como Sarah Ballard? Quais seriam as possíveis contribuições desse telescópio para a ciência.

QUESTÃO 05 - De acordo com o texto, o projeto de construção do TMT pode ser cancelado? Por quê?