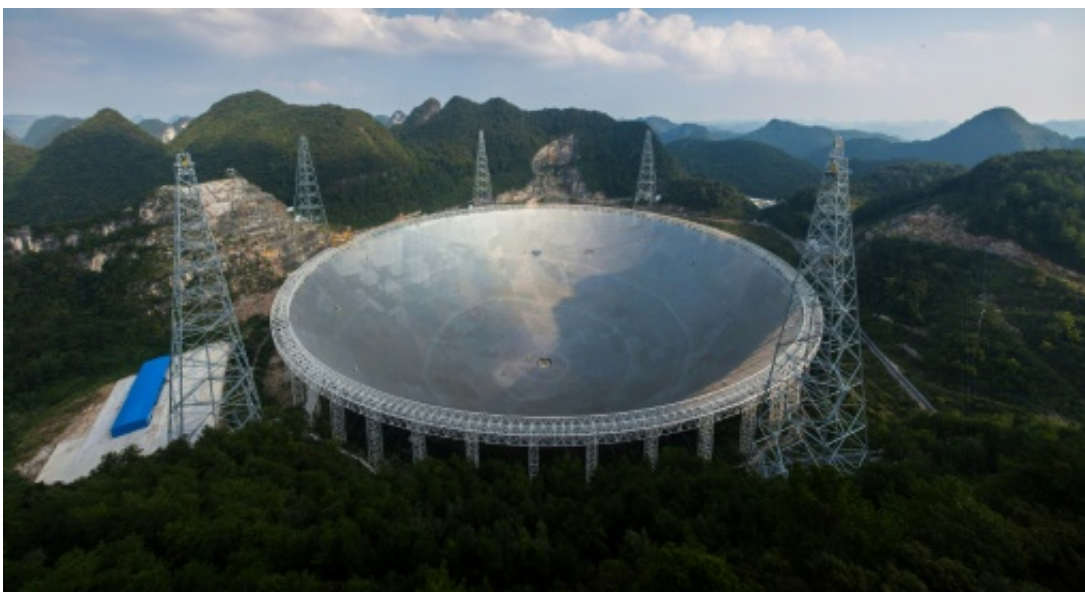


# 'Thank the aliens': Thousands displaced for China's huge telescope

November 30 2016

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The five-hundred-metre Aperture Spherical Telescope in the China's southwest, which cost 1.2 billion yuan (\$180 million) to build, is the world's largest radio telescope

Humanity's best bet at detecting aliens is a giant silver Chinese dish the size of 30 football fields—one that simultaneously showcases Beijing's abilities to deploy cutting-edge technologies and ignore objectors' rights as it seeks global prominence.

The Five-hundred-metre Aperture Spherical Telescope (FAST) in the country's southwest, which began operations in September and cost 1.2

billion yuan (\$180 million) to build, is the world's largest radio telescope.

Once fully operational, FAST will be able to peer deeper into space than ever before, examining pulsars, dark matter and gravitational waves—and searching for signs of life.

Authorities also hope it will bring tourist dollars to the province of Guizhou, one of China's poorest regions.

But it comes at the cost of forcibly displacing about 9,000 villagers who called the site in Pingtang county their home.

Many were outraged at being forced to leave the valley surrounded by forested karst hills and hundreds of families are now suing the government, with some cases being heard this week.

Octogenarian Han Jingfu drank pesticide days after being made to sign a relocation contract and died at his front door, neighbours and relatives said.

China built FAST as part of efforts to take on international rivals and raise its embarrassingly low tally of Nobel Prizes, explained Peng Bo, director of China's National Astronomical Observatories, which oversees the telescope.

The 500-metre-wide (1,640 feet) dish dwarfs its nearest competitor, the US's Puerto Rico-based Arecibo telescope, which is only 305 metres across.

## World's largest radio telescope

China's Five-hundred-metre Aperture Spherical Radio Telescope (FAST)

Mission:

- Observe distant pulsars – tiny neutron stars believed to be the products of supernova explosions
- Survey neutral hydrogen in Milky Way, other galaxies
- Search for signs of alien life

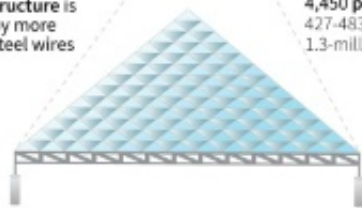
6 cable-support towers hold receiver in place  
Height: 150 m each

Suspended receiver (feed cabin) gathers data from reflector



Cable net structure is connected by more than 7,000 steel wires

4,450 panels  
427-483 kg each,  
1.3-millimeter-thin



In a test run, FAST detected electromagnetic waves emitted by a pulsar more than 1,300 light-years away

Source: FAST/Chinese Academy of Sciences/National Astronomical Observation/StateMedia

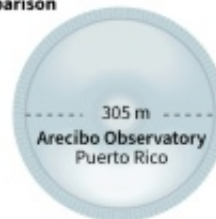


**Construction:** Started 2011

Some 9,000 people living in the area have been relocated

**Cost:** 1.2 billion yuan (\$180 million)

**Comparison**



Arecibo Observatory  
Puerto Rico



FAST

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World's largest radio telescope

"We said we had to be a little more daring, because we had to surpass the US no matter what," Peng said.

"I think we can get a few Nobel prizes out of it. We as Chinese people really want to win them."

The world's most populous country and second-largest economy has so

far only won one scientific Nobel, awarded last year to chemist Tu Youyou for medicine.

FAST's receivers are more sensitive than any previous radio telescope, and its pioneering technology can change the shape of the dish to track celestial objects as the Earth rotates.

It could catalogue as many pulsars in a year as had been found in the past 50, Peng said.

But he acknowledged that FAST will be overtaken by the larger Square Kilometre Array telescope in South Africa and Australia, which will be built over the next decade.

## **'Pushed into a corner'**

FAST needs a five kilometre-wide (three miles) "radio silence" buffer zone around it with electronics banned in order to reduce interference with the sky's much fainter frequencies.

Relocated residents would "enjoy better living standards", the official Xinhua news agency said when the dish was completed in July.



A group of men wait to speak to a journalist in Jinke village, in Pingtang county, after being told to move out of the radio silence buffer zone following the construction of the world's largest radio telescope in China's Guizhou province

"Villagers in nearby communities admired their luck, saying they should 'thank the aliens'," it added.

But locals allege land grabs without compensation, forced demolitions and unlawful detentions, and up to 500 families are suing the Pingtang county government.

Lu Zhenglong, whose case was heard Tuesday, said officials demolished his house without warning or consent when he was not even present, burying his furniture.

"What would have happened if I had been inside?" he told AFP, adding

that authorities had "pushed ordinary people into a corner. It's really unbelievable".

A neighbour also surnamed Lu said: "They've chased us all off to some wasteland and ordered us to live there with no way to maintain our old standards of living. For 90 percent of us, basic survival is a problem."

The rubble of their homes now lies under soil and new saplings in a tourist park just outside the radio silence zone, with a museum, a space-themed hotel and visitor reception facilities which will sell tickets for nearly \$100 each.

According to the Pingtang county government website, the park was aimed at "high-end people from developed cities" and cost over 1.5 billion yuan—more than the telescope itself.

## **'Eye to the sky'**

Meng Xiujun, whose Elites Law Firm in the southern city of Guangzhou is handling most of the cases, said officials tried to intimidate him, telling him he should "see the bigger picture for a key national project".





An old woman waits in her house beside the heater in Jinke village, in Pingtang county, after being told to move out of the radio silence buffer zone following the construction of the world's largest radio telescope in China's Guizhou province.

But he told AFP: "This isn't just a matter of economic interests—once you start asking average citizens to kneel down or beat them, it becomes about human rights and problems with China's rule of law."

The Pingtang county government did not respond to requests for comment by AFP.

Andreas Wicenec, head of data intensive astronomy at the International Centre for Radio Astronomy Research in Australia, said that FAST had "world class" potential and its engineering was "absolutely a marvel".

Unusually, the FAST programme was "remarkably, extremely open" to outside collaboration, he said.

It was not clear how many tourists have visited the park since it opened—almost none were present when AFP visited recently.

But authorities have high hopes.

Along the roadside, government-sponsored billboards emblazoned with the dish declared: "Rapidly build a unique astronomy tourism site based on 'China's eye to the sky'".

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