

MATH & ALGEBRA

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Rio Grande St., Austin Tx., 78701 jpcise@austincc.edu & New York Times. Sept. 26, 2016 by Chris Buckley & Adam Wu

China Hunts for Scientific Glory, and Aliens, With New Telescope



INTRODUCTION: As big as 450 basketball courts?

A basketball court is 94 ft. X 49 ft.. The article states the area of the telescope is ~ 2.1 million sq. ft. being 1640 ft. in diameter.

QUESTIONS: (a) Find area of a basketball court?

(b) Find area of 450 basketball courts?, (c) Does stated area of 2.1 million sq. ft. = area of 450 basketball courts?, (d) Knowing the area of telescope dish, find it's diameter?, (e) How do the D's compare

HINTS: $A_{\text{RECTANGLE}} = L W$, $A_{\text{CIRCLE}} = \pi D^2/4$

The new Five-hundred-meter Aperture Spherical Telescope, or FAST, in Guizhou Province, is roughly twice as sensitive as the world's next-biggest single-dish radio telescope.

PINGTANG COUNTY, China — When hundreds of engineers and builders began clambering up a jagged hill in southwestern [China](#) to assemble a giant telescope in a deep, bowl-shaped basin, poor villagers sometimes crept over the sheer slopes to glimpse the country's latest technological wonder. "We've never seen anything like it, never imagined it," said one villager, Huang Zhangrong, a sun-gnarled 66-year-old carpenter. "It's a big circle, **a big iron wok.**"

The wok is the world's largest single-dish radio telescope, and it officially began operating on Sunday, accompanied by jubilant national television coverage, after more than five years of construction.

The [Five-hundred-meter Aperture Spherical Telescope](#), FAST for short, is intended to project China's scientific ambitions deep into the universe, bringing back dramatic discoveries and honors like [Nobel Prizes](#). Maybe even messages from aliens. The telescope, which is in a majestic but impoverished part of Guizhou Province, embodies China's plans to rise as scientific power. The dish is made of 4,450 intricately positioned triangular panels **and has a collecting area of 2.1 million square feet, equal to almost 450**

basketball courts. At 1,640 feet in diameter, it will be roughly twice as sensitive as the world's next-biggest single-dish radio telescope, the Arecibo Observatory in Puerto Rico, which is 1,000 feet across.

The telescope will help China make "major advances and breakthroughs at the frontier of science," President Xi Jinping of China said in a [congratulatory message](#) on Sunday. He called it China's "eye in the sky."

ANSWERS: (a) 4606 ft.² , (b) ~ 2,072,700 ft.² , (c) close! , (d) ~1,616 ft. = D, (e) close!