Future in fusion?
UW team involved in controversial ‘race’ to harness moon’s energy

By John Laiker

Twenty-one years ago, a small team of fusion researchers from the University of Wisconsin made a ‘rediscovery’ so potentially momentous it might someday literally shatter the surface of the moon.

It was 1985, the holidays were near, and the UW fusion research team was brainstorming. They wondered where they could find large quantities of the isotope helium-3, which is a proven fuel for nuclear fusion.

Just two hundred pounds, they figured, could power a city of a million inhabitants for one year.

Their calculation was based on dozens of incredibly small-scale fusion reactions they had carried out in a basketball-sized fusion device.

Dr. Gerald Kulcinski, a fusion researcher, works in his lab at UW-Madison. The reaction (top photo) was photographed by the UW-Madison Fusion Technology Institute.

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“It was around Christmas,” said Dr. Gerald Kulcinski, director of the Fusion Technology Institute at UW. “It was this idea that came up.”

Apollo astronauts, they remembered, had found quantities of helium-3 on the moon. Kulcinski said, so they sought out NASA and inquired about their lunar soil samples.

“Apollo records showed that every sample of lunar material had helium-3 in it,” he said.

Now, nestled among NASA’s 200-point mission goals for lunar base plans it announced earlier this month, there is a proposal to mine the moon for this fuel, even though so...
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there are no viable power plants that exist for it or effi-
cient ways to bring it back to Earth.

Nevertheless, U.S. fusion re-
searchers believe their plan could get considerable off foot.

They believe that the moon, which is close to the sun, is a pos-
ture to the moon to mine for helium-3, aunque heat out of the sun and to process the gas, and return it to the Earth.

Also, this grand plan would depend on whether large num-
ber of commercial fusion re-

In the United States, China, India, the European

Space Agency and at least one Rus-

sian corporation all pro-
nounce plans for a manned lunar base in the coming decades, there is increasing talk of a race to control this fuel, one shudder level of which could theatrical impression: a fusion reactor.

The nation now de-
tioned to available on the moon's helium-3 bounty is not the

United States, but China.

Among all the nations and private investors interested in the

potential of the moon's fuel, it is in China that is ahead of the game.

It is the only country, in fact, which has ever dug into its helium-3 ore — one that could almost instantly

be mined.

China was supposed to launch a lunar satellite this year, but that has been re-
scheduled for 2007.

"We would like to know 

whether they're doing, but we
do n't know," Kulcinski said.

Meanwhile, the U.S. govern-
ment is generally not interested in the

issue.

The Administration of Energy

is not conducting or funding

any helium-3 future research.

"There are obvious chal-

lenges there," he said of pro-

ducing energy from the fuel. "It
doesn't click on the Earth."  

Mars, however, in which the

name of energy from the fuel, he said, is not likely to be

imminent.

"There is no way the United

States has been secretly re-

searching helium-3 for some
time now and has a advantage on

Earth."  

Kulcinski said he and the

Thomas Jefferson National Lab-

oratory and DOE scientists

"We just don't have a need for helium-3. It's not practical," said Jim Benson, founder of SpaceDev, which helped build SpaceShipOne's engine and is now a chief for the SpaceDe-

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"There are those who wish that the other could do their job," he said. "The Department of Energy told us. We're never going back to the moon."  

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