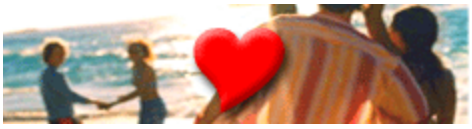


MAIN NEWS
Home Page
Local
Space/Next Launch
National/World
Sports
Outdoors
Business
Life
Editorial Page
Columnists
Obituaries
Weather
Community News
About Me/Women
Health
Inside Racing
The Verge
Technology
Photo Galleries
Florida Lottery
USA Weekend
14-Day Archive
Search News Articles
GO
ENTERTAINMENT
It's All Here!
Movies
Attractions/Daytrips
Dining/Taste
Music & Nightlife
Arts & Literature
Surf Scene
Tide Charts
Lodging
Shopping
ONLINE FEATURES
Brevard County Services
Celebrations
Classifieds
Contests
Coupon Connection
Custom Coupons
The Fact Book
Personals

July 2, 2002

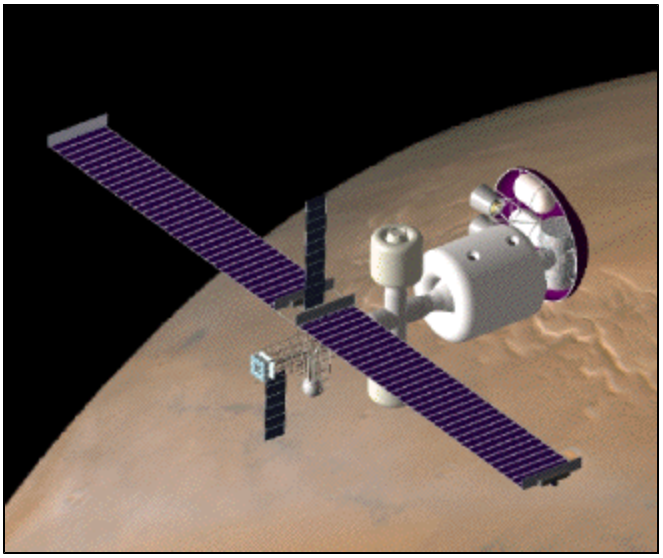
Astrotels might aid explorers' Mars trips

By Kelly Young
FLORIDA TODAY

CAPE CANAVERAL, Fla. - In the future, people could check into a space hotel looping between Earth and Mars for five-month stays. Room service, however, may be limited.

The astrotel, as developer Kerry Nock of Altadena, Calif., calls it, is part of one company's futuristic concept to get to Mars and set up camp. "Think of it as a small space station," Nock said. "Very small."

The miniature station would make continuous trips from Earth to Mars and back. Small taxi ships would launch from Earth or Mars, and catch up to the astrotel as it makes its regular swing past the planets.



Artist concept of an astrotel traveling between Earth and Mars. Image from Global Aerospace Corp.

It's not a commercial venture for tourists, but something Nock hopes NASA might choose to use when it decides to send a cadre of explorers to Mars.

Nock estimated that developing and building the astrotel, and the supporting infrastructure, would cost $5 billion a year for 10 years. Maintenance costs could run $3 billion per year.

But with the right international political support, Nock predicted a manned Martian mission could happen in 10 years.

The astrotel would be big enough to hold 10 people, but would not need all of the research space necessary on the International Space Station.

Nock, president of Global Aerospace Corp., showed off his concept last month at the annual meeting of the NASA Institute for Advanced Concepts. While it might seem far-fetched, the institute apparently believes in it enough to grant the company up to $500,000 to further develop the idea.

"I think it's very realistic," said Robert Cassanova, director of the institute. "The astrotel concept is one that would be very useful to have in place once you're traveling back and forth to Mars on a somewhat regular basis."

Researchers studied a similar concept in the early 1980s, but the shuttle Challenger disaster took precedence over all other space matters in 1986.

The advent of electrical propulsion, tested on the Deep Space 1 probe in the 1990s, made Nock revisit the issue.

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"I got to thinking maybe a combination of ion propulsion with cyclic orbits could really do something revolutionary," he said.

In doing a kind of continuous orbit between Mars and Earth, ships might only need 1 percent of the normal amount of fuel used to travel that distance, Nock said.

"If you got it started, why stop?" he asked. "You could continue for many, many cycles -- 15, 30, 45, 60. Just continue on until somebody builds that propulsion system that gets people to Mars in a week."

Mars, the Martian moon Phobos and Earth's moon could be made into fueling stations, Nock said.

The company's plan also calls for mining materials from those places. Water exists in the lunar poles. Explorers could split the water molecules into hydrogen and oxygen. Cold hydrogen makes good rocket fuel. Oxygen helps it burn.

The taxi ships would pass by the moon fueling station on their way to the astrotel. Fueling in space saves money because fuel is heavy and it's cheaper to launch a light spacecraft.

Another fueling stop could be on Phobos, one of Mars' two moons. Oxygen also could be extracted from its surface.

Recent data from the Mars Odyssey spacecraft show a lot of hydrogen near the Martian surface -- probably part of water. So the system could process fuel on Mars to power the liftoff needed to get a craft back to the astrotel for the trip home.

Nock compared the conceptual Mars base to the current scientific outpost in Antarctica. It's not self-sufficient.

People and supplies are ferried in and out regularly. The 20 people who could make a Mars base home would be away from Earth for about four years.