

Tempe Refinance at 4.37% FIXED!
 \$160,000 mortgage for \$633/mo. Free.
 No Obligation. Get 4...
www.LendGo.com

Need Credit Card Debt Bailout?
 10K+debts? We get rid of high credit
 card debt. Save 60%!...
www.DebtReliefCenter.org/DebtHelp

Reverse Mortgage: A Good Choice for You?
 Near 70? You May Qualify for a Larger
 Loan Amount. Find Out...
NewRetirement.com

Other editions: [Mobile](#) | [Text](#) | [News Feeds](#) | [E-Newsletters](#) | [Electronic Edition](#) Find it: [Jobs](#) | [Cars](#) | [Real Estate](#) | [Rentals](#) | [Dating](#) | [Weekly Deals](#) | [Coupons](#) | [Classifieds](#)



SEARCH ALL go



HOME NEWS COMMUNITIES SPORTS VIDEO LIFE WEATHER OPINION OBITUARIES CLASSIFIEDS CUSTOMER SERVICE

Space / Flame Trench blog Brevard Watchlist Education Zap Squad Jeff Parker Toons In Help! Hometown Heroes Film contest Gas

Comment, blog & share photos
 Log in | Become a member | Search people

POWERED BY YOU AND

click to change font size: -A | +A



The ultimate long distance communication

NASA'S GLENN RESEARCH CENTER • AUGUST 19, 2009

Post a Comment Recommend Print this page E-mail this article Share ?

(2 of 2)

Traveling Wave Tube [Amplifiers](#) have been used for other planetary missions, such as Kepler and Cassini, but previous designs were less powerful. According to Rainee Simons, chief of Glenn's Electron and Optoelectronic Device Branch, engineers had to redesign the internal circuitry of the amplifier.

"In order to provide the power and frequency needed to send communications from the vicinity of the moon, it had to be custom designed and handmade," he said.

The orbiter's Traveling Wave Tube Amplifier is also more efficient than previous amplifiers. When it comes to launching satellites, weight means money. The heavier the spacecraft, the more [fuel](#) it needs to reach orbit. Because the new amplifier packs more power into a lighter design than previous microwave amplifiers, it's cheaper to fly.

The amplifier underwent vigorous spaceflight testing -- including vibration, thermal vacuum, radiation and electromagnetic interference tests -- to ensure that it could withstand the intense conditions of launch and lunar orbit.

Simons, Peterson and other members of the Glenn team were on standby when LRO entered its final orbit and began transmitting data. They were thrilled to hear that it's working properly, not only because LRO is a vital step toward returning humans to the moon, but also because they believe the new amplifier can improve life on Earth in countless ways.

If used on communication satellites, it could allow for much better tracking, monitoring and control of transoceanic flights and ships traveling beyond the reach of radar.

It also could enable real-time data transfer from future Earth-orbiting satellites. Such satellites are used to track migratory animals, endangered species, icebergs, volcanic eruptions and forest fires, and to aid in search and rescue operations. They're used to study climate change and meteorology as well.

According to Simons, by collecting more timely data about the interaction of our atmosphere, ocean and land, we could save lives and property during severe weather.

"This technology has the potential to create a better world," he said.



This image shows cratered regions near the moon's Mare Nubium region, as photographed by the Lunar Reconnaissance Orbiter. Credit: NASA

ADVERTISEMENT



MOST RECOMMENDED ARTICLES

- Police charge man in fatal shooting at Melbourne bar (11)
- Bears, Pirates showcase skills (5)
- Ex-inmate suffers serious injuries trying to get back into Brevard jail (5)

MOST COMMENTED ARTICLES

- Posey discusses health care, space, 'birthiers' (425)
- Posey wants big, civil crowd (193)
- Police charge man in fatal shooting at Melbourne bar (120)

More BreakingNews Headlines

- Voters pick finalists in '90 Seconds' contest
- 3 people charged in land-selling scheme in Florida
- NASCAR: Keselowski to move to Penske Racing
- Keselowski to move to Penske Racing in 2010
- Would-be purse snatcher hurts Wal-Mart greeter (11)

Previous Page 1 | 2

Sound off on this, and other topics, in our Community Forums

In Your Voice | READ REACTIONS TO THIS STORY

Hide Comments ▲



CLICK TO FOLLOW US ON TWITTER

You must be logged in to leave a comment. [Login](#) | [Register](#)

Empty comment box with a small cursor icon at the bottom right corner.

1000 characters left

Submit

ADS BY PULSE 360

Get Listed Here

Tempe Refinance at 4.37% FIXED!

\$160,000 mortgage for \$633/mo. Free. No Obligation. Get 4 Quotes!

www.LendGo.com

Tempe Mortgage Protection Insur.

Pays off your mortgage in the event of your death. Get a free quote!

www.NAALife.com

File For Bankruptcy

Discover Your Bankruptcy Filing Options. Seek Legal Help Today!

www.TotalBankruptcy.com

Tempe Refinance at 4.37% FIXED!

\$160,000 mortgage for \$633/mo. Free. No Obligation. Get 4...

www.LendGo.com

Need Credit Card Debt Bailout?

10K+debts? We get rid of high credit card debt. Save 60%!...

www.DebtReliefCenter.org/DebtHelp

Reverse Mortgage: A Good Choice for You?

Near 70? You May Qualify for a Larger Loan Amount. Find Out...

NewRetirement.com

SITE MAP

- » 7-day archive
- » 7-day forecast
- » 90 seconds to fame film contest
- » Advice & columnists
- » Airport delays
- » Archives
- » Around the u.s.
- » Bca section
- » Barefoot bay
- » Bars & clubs
- » Bay bulletin
- » Blogs
- » Breeze
- » Brevard watchlist
- » Brevard headlines
- » Brian mccallum
- » Business
- » Classifieds
- » Communities
- » Customer service
- » Cape canaveral
- » Capitol news
- » Cars
- » Cash for clunkers
- » Catch of the week
- » Cocoa
- » Cocoa beach
- » Cocoa beach web cam
- » Columnists & blogs
- » Contact us
- » Cram session blog
- » Crime
- » Crossword
- » Data center: crime data
- » Data center: education data
- » Data center: politics
- » Data center: real estate data
- » Data center: weather data
- » Dating
- » Education
- » Extreme culture
- » Fact book
- » Film contest
- » Finding fitness
- » Flablaba
- » Flame trench blog
- » Florida
- » Forums
- » Galleries
- » Garage sales
- » Gas
- » Gators
- » Gators sports scene blog
- » Grant-vaikaria
- » Grocery coupons
- » Home
- » Health
- » Help!
- » Help! column
- » High school galleries
- » High school sports
- » High schools blog
- » High schools forum
- » Hometown heroes
- » Horoscope
- » Horoscopes
- » Hour-by-hour
- » Hurricane preparation
- » Ihb
- » Indialantic
- » Interactive graphics
- » Jeff parker toons in
- » Jobs
- » Life
- » Launch schedule
- » Lee nessel
- » Legal ads
- » Little league
- » Local headlines
- » Local loop
- » Lottery
- » Malabar
- » Mark decotis
- » Melbourne
- » Melbourne beach
- » Melbourne village
- » Melbourne doppler radar
- » Memoriams
- » Merritt island
- » Metromix
- » Metromix: events
- » Metromix: music
- » Micco
- » Mike cherry
- » Mims
- » Momslikeme
- » More web cams
- » Motorsports
- » Movies
- » My cozi calendar
- » News
- » Nation & world
- » National loop
- » Notable deaths
- » Obituaries
- » Opinion
- » On the town
- » Our views & your views
- » Outdoors
- » Page prints
- » Palm bay
- » Palm shores
- » Patti sponsler
- » Pay bill
- » Personal technology
- » Pet project
- » Peter kerasotis
- » Photo galleries
- » Pineda
- » Place an ad
- » Port canaveral web cam
- » Port st john
- » Press
- » Radars
- » Real estate
- » Regional loop
- » Rentals
- » Restaurants
- » Rockledge
- » Sports
- » Satellite beach
- » Scottsmoor
- » Search obituaries
- » Shopping
- » Shopping with autumn
- » Space
- » Space / flame trench blog
- » Space chat
- » Space headlines
- » Spaces
- » Special project: moon landing memories
- » Special project: saving hubble
- » Star advocate
- » Stocks
- » Submit a letter to the editor
- » Subscribe now
- » Sudoku
- » Sudoku & features
- » Sun
- » Suntree
- » Surfing
- » Tee times
- » Times
- » Titusville
- » Today in brevard
- » Tribune
- » Video
- » Video ondemand
- » Videos
- » Viera
- » Weather
- » Watchdog
- » Weather news
- » Weather web cam
- » Web cams
- » Weekly deals
- » West melbourne
- » Work for us
- » Youth sports
- » Youth football
- » Youth soccer
- » Zap squad
- » Zoo web cam



Partners: Jobs: CareerBuilder.com Cars: Cars.com Apartments: Apartments.com Shopping: ShopLocal.com Homes: Homefinder.com

HOME | NEWS | COMMUNITIES | SPORTS | VIDEO | LIFE | WEATHER | OPINION | OBITUARIES | CLASSIFIEDS | CUSTOMER SERVICE | Site Map

Contact Us | About Us | Work for Us | Subscribe