

AMSAT-Deutschland e.V. D-35039 Marburg Ernst-Giller-Str. 20

**AMSAT-DL e.V.**  
Ernst-Giller-Str. 20  
D-35039 Marburg  
Germany

Telefon +49-(0)6421-684112  
Telefax +49-(0)6421-684168  
E-Mail [office@amsat-dl.org](mailto:office@amsat-dl.org)  
Internet [www.amsat-dl.org](http://www.amsat-dl.org)

March 27, 2009

### **Press Release**

#### **First German Mars Mission makes sidestep to Venus** *Ground station in Bochum generated echoes from Venus*

The team of German Space Agency AMSAT-DL reached another milestone on the way to send a spacecraft to Mars on 25 March 2009. From ground mission control station in Bochum (located in the observatory IUZ Sternwarte) radio frequency signals were sent to Venus. After nearly 100 million kilometres of track and approximately five minute's term they came back again as echoes from Venus surface and were received in Bochum. This was the first German success to receive echoes of other planets. The transmitter technology for the planned Mars mission of AMSAT-DL was the last key component tested and fulfils its baptism of fire.

The AMSAT-DL prepares the first privately financed flight to Mars for the next possible launch window. This spacecraft is intended as a scientific and communication platform. In the last few years the largely honorary researcher of the AMSAT-DL developed and tested all essential components for this spacecraft. Many technical elements were successfully on satellites in earth orbits. With reception of its own echoes from Venus the ground commando station is ready for lift-off and the AMSAT-DL team is waiting in the wings to construct the spacecraft.

Development, design and construction of this first German Mars mission have been achieved through own work by the AMSAT-DL and its partner organizations. Already a third of the total project costs were performed. More own work shall follow during the mission. To finance the specific construction costs and the launch costs the AMSAT-DL tries to get financial support of the DLR (Deutsches Zentrum für Luft- und Raumfahrt). There is a need for finance of 20 millions Euros.

The AMSAT would like to demonstrate that their approaches to low-cost space missions are feasible. For comparison, these days the ESA and NASA missions to Mars have cost ten times as much.

The Mars mission is obliged to the open source principle. Private donors can contribute to the mission. A website was set up for Mars tickets <http://www.ticket-to-mars.org>. Anyone can buy his ticket to Mars up 50 EUR.

Through the open source principle it allows everyone to receive the mission live data during the flight to Mars. This is possible by using amateur radio frequencies and an own receiver with a dish with 1 meter diameter. If such equipment is not available then it is also possible to get a live stream via Internet. All necessary information will be disclosed before the mission.

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**Projekt- und Spendenkonto**

**Beitragskonto:**

Konto-Nr.: 16509612  
Voba Mittelhessen (BLZ 513 900 00)  
Konto-Nr.: 315000600  
Postbank Frankfurt (BLZ 500 100 60)

IBAN: DE84 513 0000 0016 5096 12  
SWIFT-BIC: GENODE51G11  
IBAN: DE97 50010060 0315 0006 00  
SWIFT-BIC: PBNKDEF



Figures (from left to right and from top to bottom):

Figure 1: The AMSAT-Spacecraft P5A before Mars (Animation: AMSAT-DL)  
( [http://www.amsat-dl.org/pic/gallery2/main.php?q2\\_itemId=6758](http://www.amsat-dl.org/pic/gallery2/main.php?q2_itemId=6758) )

Figure 2: Project leader of AMSAT-Mars-Mission, Prof. Dr. Karl Meinzer with feeder antenna of commando station in Bochum.  
( [http://www.amsat-dl.org/pic/gallery2/main.php?q2\\_itemId=7551](http://www.amsat-dl.org/pic/gallery2/main.php?q2_itemId=7551) )

Figure 3: 20-m-Parabolic Reflector Antenna of observatory "IUZ Sternwarte Bochum" used by AMSAT-DL for commando station.  
( [http://www.amsat-dl.org/pic/gallery2/main.php?q2\\_itemId=6775](http://www.amsat-dl.org/pic/gallery2/main.php?q2_itemId=6775) )

Figure 4: Constellation of planets during the transmissions to Venus.  
( [http://www.amsat-dl.org/pic/gallery2/main.php?q2\\_itemId=7534](http://www.amsat-dl.org/pic/gallery2/main.php?q2_itemId=7534) )

Figure 5: Development of AMSAT-Mars-Mission.  
( [http://www.amsat-dl.org/pic/gallery2/main.php?q2\\_itemId=7543](http://www.amsat-dl.org/pic/gallery2/main.php?q2_itemId=7543) )

Figure 6: The technological foundations for the Mars mission was created by construction of earth satellite AO-40/P3D. It was launched successful in 2000 with ARIANE 5 rocket.  
( [http://www.amsat-dl.org/pic/gallery2/main.php?q2\\_itemId=6771](http://www.amsat-dl.org/pic/gallery2/main.php?q2_itemId=6771) )

Figure 7: Logo of mission  
( [http://www.amsat-dl.org/pic/gallery2/main.php?q2\\_itemId=6741](http://www.amsat-dl.org/pic/gallery2/main.php?q2_itemId=6741) )

These and other images in different resolutions are available by the Media Portal of the AMSAT-DL  
[http://www.amsat-dl.org/pic/gallery2/main.php?q2\\_itemId=6740](http://www.amsat-dl.org/pic/gallery2/main.php?q2_itemId=6740)

(All photos and figures: AMSAT-DL)

### **Background information**

The AMSAT-DL is an association of engineers, technicians, scientists, amateur radio and space enthusiasts who have over 30 years experience of satellite development, building and operation.

AMSAT-DL:

<http://www.amsat-dl.org>

Mars-Mission:

<http://www.go-mars.org>

Ticket-to-Mars:

<http://www.ticket-to-mars.org>

Venus transmission:

[http://www.amsat-dl.org//index.php?option=com\\_content&task=view&id=165&Itemid=97](http://www.amsat-dl.org//index.php?option=com_content&task=view&id=165&Itemid=97)