



Radio Amateur Satellite Corporation (AMSAT)
10605 Concord St, #304
Kensington, MD 20895-2526 USA

July 10, 2019

AMSAT Member,

I am writing to provide an update to the membership on AMSAT's activities and invite everyone to our 50th Anniversary AMSAT Space Symposium and General Meeting, to be held October 18-20, 2019. For more details, see the attached flyer or go to <https://www.amsat.org/amsat-symposium/>. I hope to see you there!

It takes considerable volunteer effort and real dollars to keep Amateur Radio in Space™. AMSAT needs some important assistance in the areas of User Services and Engineering. If you would like to volunteer, please contact me at k6wao@amsat.org. You may also assist AMSAT by making a tax-deductible contribution. AMSAT has several fundraising needs. The daily operation of AMSAT is accomplished by donations to the General Fund. This fund is also used to fill other department needs. The other main department needs are the fund for GOLF (Greater Orbit, Larger Footprint) 3U CubeSats design/construction and ARISS (Amateur Radio on the International Space Station).

AMSAT has had success in the launch of AO-92 (Fox-1D) in January of 2018 and the launch of AO-95 (Fox-1Cliff) in December of 2018. AO-95 achieved orbit and the beacon functions properly, unfortunately the satellite's receiver is not operational. AMSAT Engineering and Operations are trying to determine the cause of the issue. AMSAT partnered with Spaceflight Inc. by contracting and paying for these launches. Fundraising for Fox series satellites have not yet recouped this expenditure, so donations are still being accepted. AMSAT is expecting the launch of RadFxSat-2 (Fox-1E), our partnership with Vanderbilt University, by no earlier than the end of summer. RadFxSat-2 will launch on the ELaNa XX mission, on Virgin Orbit's LauncherOne, and carry an AMSAT V/u linear transponder and radiation experiments for Vanderbilt University. AMSAT is also partnering with several universities to fly this linear transponder on their CubeSats. The first of these will fly on HuskySat-1, from the Husky Satellite Lab at the University of Washington, later this year.

AMSAT has been selected for two CubeSat Launch Initiative (CSLI) opportunities for GOLF-TEE and GOLF-1. GOLF's 3U spaceframe is being designed with versatility to add mission specific radios, power supplies, and experiments. A series of GOLF CubeSats will provide better coverage and a greater footprint will allow more coverage by fewer satellites. GOLF also allows AMSAT to continue and expand partnerships with universities, NASA and others. GOLF will also provide for additional experimental payloads such as GPS, satellite interlinking, and others. Your donations help AMSAT keep GOLF-TEE and GOLF-1 on schedule.

The first GOLF CubeSat, GOLF-TEE, will jump start the GOLF program with a launch to LEO as early as 2020. GOLF-TEE will use Attitude Determination and Control (ADAC) and an experimental 5 GHz /10 GHz software defined radio transponder.

AMSAT will benefit by gaining knowledge as well as hardware for future missions. GOLF-TEE also provides an opportunity to fly projects that have been developed by AMSAT's Advanced Satellite Communications and Exploration of New Technology (ASCENT) "skunk works" program. GOLF-TEE will carry a Fox-1E design V/u linear transponder and new RadFx (Radiation Effects) experiment like that in AO-85 for Vanderbilt University, but testing FinFET technology.

GOLF-1 will aim for higher LEO orbit as the first official "Greater Orbit, Larger Footprint" AMSAT CubeSat. Launch is targeted for 2020-2021.

You may make a one time or recurring donation to AMSAT at <https://www.amsat.org/donate/>.

As of this writing, the ARISS FundRazr has raised \$33,250 of the \$150,000 for critical amateur radio infrastructure upgrades on ISS to enable students to talk to astronauts in space via amateur radio. ARISS is in critical need of this infrastructure update. Through your donations ARISS seeks the following upgrades:

- Next Generation radio system will support easier radio mode transition, to enable new, exciting capabilities for hams, students and the general public including:
- New amateur radio communication and experimentation capabilities, including an enhanced voice repeater and updated digital packet radio (APRS) capabilities
- Slow Scan TV (picture up and downlinks) in both the US and Russian segments of ISS
- New multi-voltage power supply (MVPS) will support present and future radio capabilities and allow wireless experiments to be conducted

ARRISS is building 10 Next Generation Radio Systems to support our development, on-orbit operations, training and long-term maintenance. This includes units on-orbit (2 units--1 unit each in US and Russian segment), flight spares (2 units), training (3 units), testing (1 unit) and ground-based maintenance & troubleshooting (2 units). ARISS has kicked off a FundRazr campaign for this initiative. The project is scheduled for delivery by the end of this year.

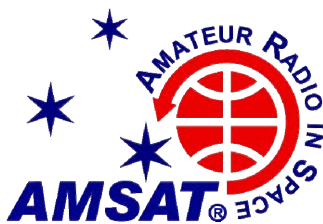
AMSAT is also working with our ARISS partners to develop an amateur radio package, including two-way communication capability, to be carried on-board Gateway in lunar orbit. Stay tuned for more details on this exciting project.

You may make a one time or recurring donation to ARISS by clicking the ARISS Donations button at <https://www.amsat.org/donate> or directly to the FundRazr at <https://fundrazr.com/arissnextgen>.

Help Keep Amateur Radio in Space™

A handwritten signature in black ink that reads "Joe Spier" with "K6WAO" written below it.

Thanks! Joe Spier, K6WAO
President, AMSAT



Please consider a donation to help Keep Amateur Radio in Space™

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Please check where your donation is to be applied:

AMSAT General Fund

ARISS General Fund

Fox Satellites

ARISS Next Generation Radio System

GOLF Satellites

Please return to:

AMSAT
10605 Concord St, #304
Kensington, MD 20895-2526 USA

AMSAT is a 501(c)(3) non-profit organization and donations are tax-deductible in the United States



2019 37th AMSAT Space Symposium and Annual General Meeting

Please join us for the 2019 AMSAT 50th Anniversary Symposium, to be held in the Washington, DC Metro Area on October 18, 19, and 20, 2019.

The Symposium venue will be the Hilton Arlington, located in the heart of the Ballston neighborhood of Arlington, VA. The Hilton Arlington is located at 950 North Stafford Street, Arlington, Virginia, 22203, USA TEL: +1-703-528-6000 and the reservation code is AMSAT (Radio Amateur Satellite Corporation). Connected to the Ballston Metro Station, the hotel offers easy and effortless access to Washington DC's top tourist destinations like the National Mall, Smithsonian Museums and historic monuments. The hotel is six miles from Reagan National Airport and the National Mall. There are plenty of restaurants nearby.

The Symposium will feature OSCAR Park - a display of satellites from throughout the history of amateur radio in space – paper presentations, and a banquet with speakers celebrating AMSAT's long history, and other events. The AMSAT Board of Directors Meeting will be held on October 16th and 17th at the same hotel. Two guided tours are available. On Sunday, October 20th a bus tour to the Smithsonian Air & Space Museum is available for \$30 (max 35 people) and on Monday, October 21st, AMSAT President Joe Spier will lead a day tour to the National Mall via the Metro.

So please plan on attending the 50th Anniversary Symposium - you will be glad you did and keep checking the AMSAT website for further updates and information.

<https://www.amsat.org/amsat-symposium/>

