

Amateur-Satellite Service



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Some facts about the amateur-satellite service

- Began in 1961
- Pioneered low-cost satellite technology
- First privately funded space satellites
- First satellite search & rescue (OSCAR 6 & 7)
- First inter-satellite transmissions
- Early tele-medicine transmissions
- Pioneered distributed engineering



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Amateur-satellite organizations (by country)

- Argentina
 - Australia
 - Austria
 - Bermuda
 - Brazil
 - Chile
 - Denmark
 - Germany
 - Finland
 - France
 - Israel
 - Italy
- AMSAT-LU
AMSAT-Australia
AMSAT-OE
AMSAT-BDA
BRAMSAT
AMSAT-CE
AMSAT-OZ
AMSAT-DL
AMSAT-OH
AMSAT-France
AMSAT-Israel
AMSAT-Italia



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Co-operation with universities to develop & construct amateur-satellites

Amateur satellites have been designed and constructed by university students with the help of local amateurs and amateur-satellite organizations.

Some examples:

- ◇ Stellenbosch University (South Africa)
- ◇ University of Surrey (UK)
- ◇ University of Mexico
- ◇ Weber State University (USA)



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Student satellite project



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Orbiting Satellite Carrying Amateur Radio (OSCARs)

Early satellite projects

- April 1959 Concept of a satellite built by and for amateurs
- *OSCAR I* Dec 1961 - Jan 1962, 300+ orbits
3000 reception reports
- *OSCAR II* Jun 1962, 18-day life
- *OSCAR III* Mar 1965, 206 orbits, first two-way amateur-satellite contact:
Germany-Switzerland



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Satellites since formation of corporation of AMSAT

- *Australia-OSCAR 5*
- *AMSAT-OSCAR 6*
- *AMSAT-OSCAR 7*
- *AMSAT-OSCAR 8*
- *RS-1, RS-2*
- *AMSAT-Phase III-A*
- *UoSAT-OSCAR 9*
- *RS-3, RS-8*
- *Iskra 2*
- *Iskra 3*
- *AMSAT-OSCAR 10*
- *UoSAT-OSCAR 11*
- *Fuji-OSCAR 12*
- *RS-10/11*
- *AMSAT-OSCAR 13*
- *UoSAT-OSCAR 14*
- *UoSAT-OSCAR 15*
- *PACSAT-OSCAR 16*
- *DOVE-OSCAR 17*
- *Webersat-OSCAR 18*



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Amateur Satellites since LO-19

- *Lusat-OSCAR 19*
- *Fuji-OSCAR 20*
- *RS-14/AO-21*
- *RS-12/13*
- *UoSAT-OSCAR 22*
- *KITSAT-OSCAR 23*
- *Arsene-OSCAR 24*
- *KITSAT-OSCAR 25*
- *ITAMSAT-OSCAR 26*
- *AMRAD-OSCAR 27*
- *PoSAT-OSCAR 28*
- *RS-15*
- *UNAMSAT-A*
- *TechSat-A*
- *Fuji-OSCAR 29*
- *Mexico-OSCAR 30*
- *RS-16*
- *AMSAT-P3D*

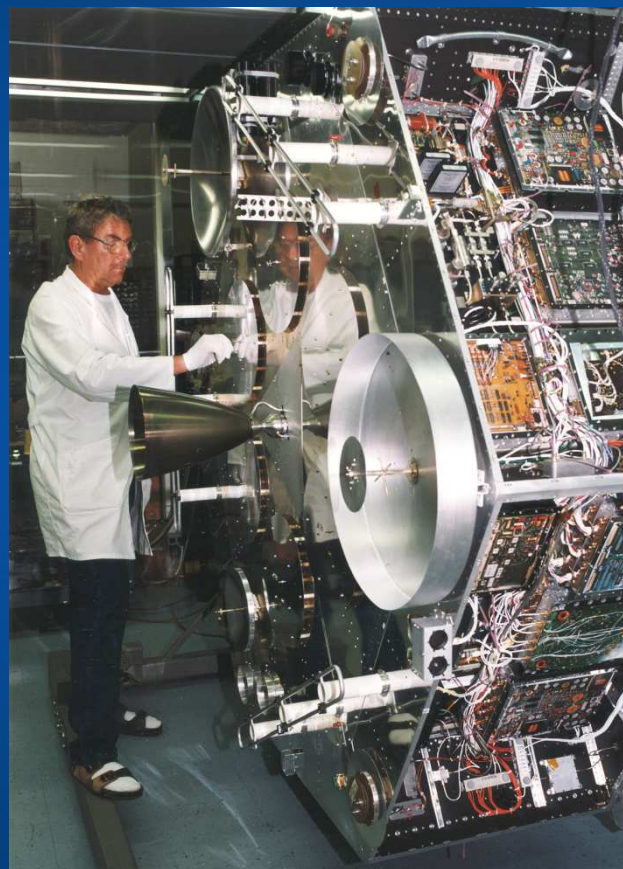


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AMSAT Oscar 40 (Phase 3D)

- multi-national effort
- elliptical orbit
- launch \approx 2000
- independent multi-band receivers and high efficiency transmitters
- Went dead shortly after launch – jet problems



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Satellite AO-40 (Phase 3D)

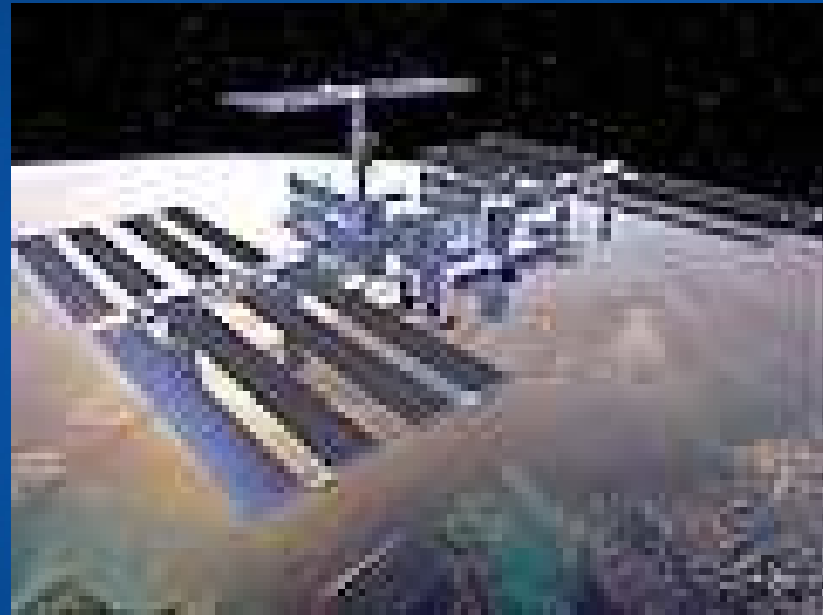


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Amateur Radio aboard the International Space Station (ARISS)

- Amateur Radio is a permanent part of ISS
- Multi-national amateur programmed
- Voice, data, image
- Most astronauts are licensed or are taking classes



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Amateur manned space programme

- More than 30 manned missions flown in the amateur-satellite service
- More than 130 astronauts and numerous cosmonauts are licensed radio amateurs
- Used to contact families and students
- Voice, packet radio, television operated



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Shuttle Amateur Radio Experiment (SAREX)

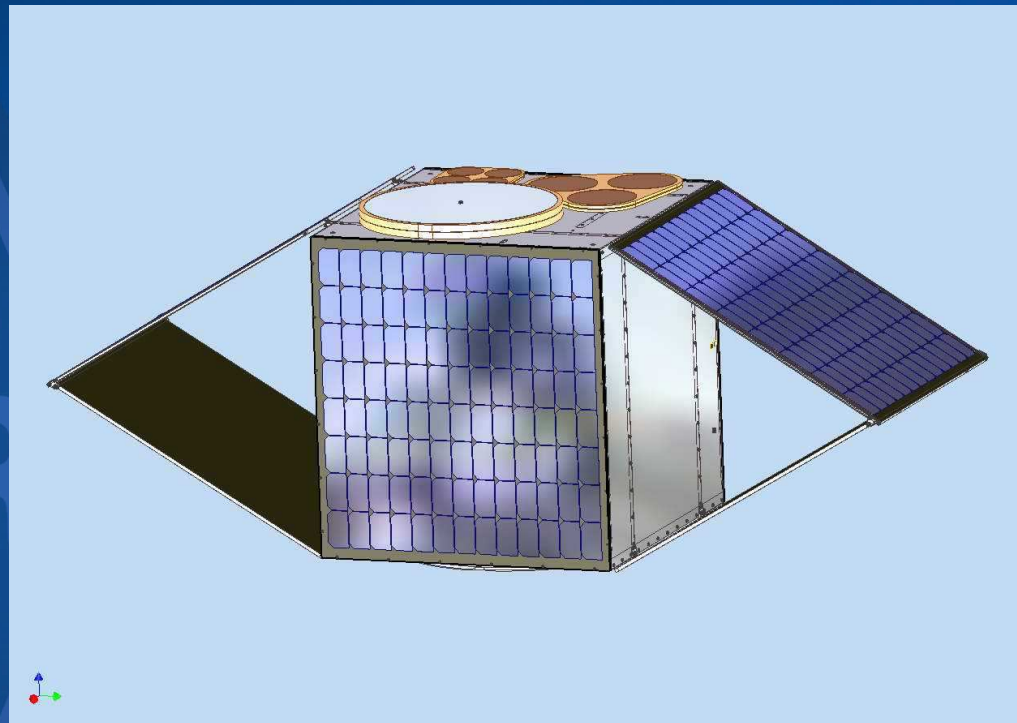
Commander Bill McArthur – M13



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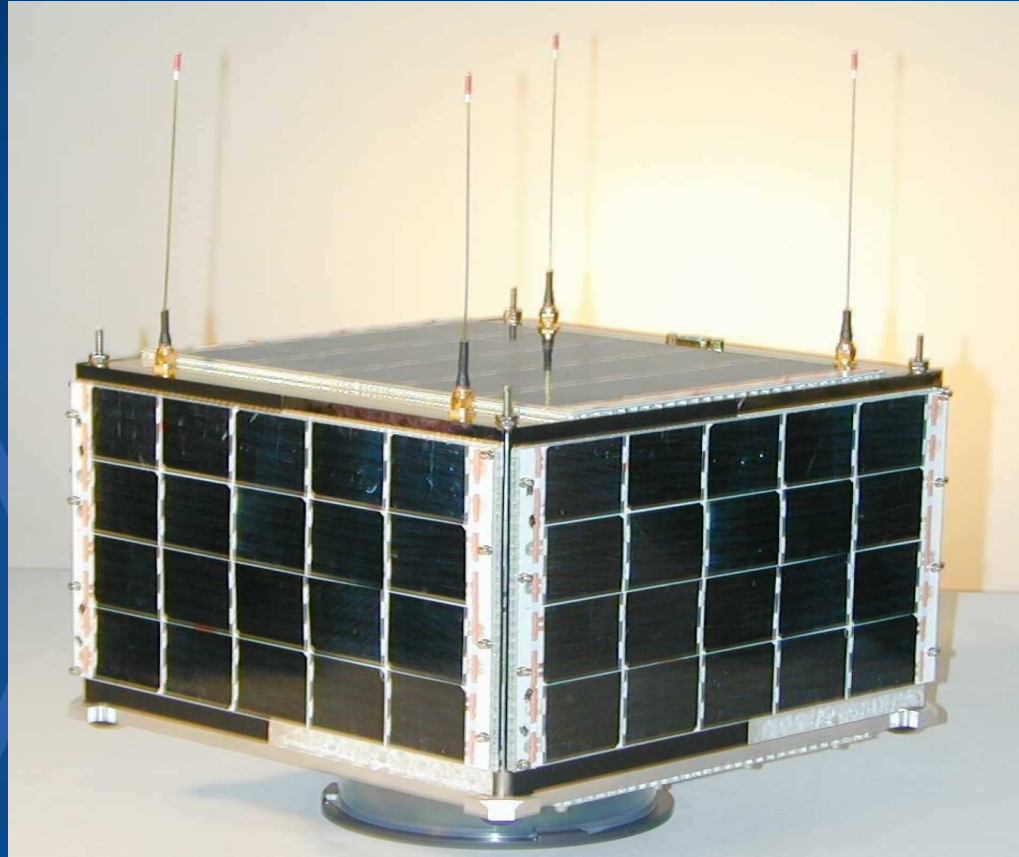
Latest AMSAT satellite Project Eagle



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Latest AMSAT satellite Project Echo



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Satellite Earth station



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