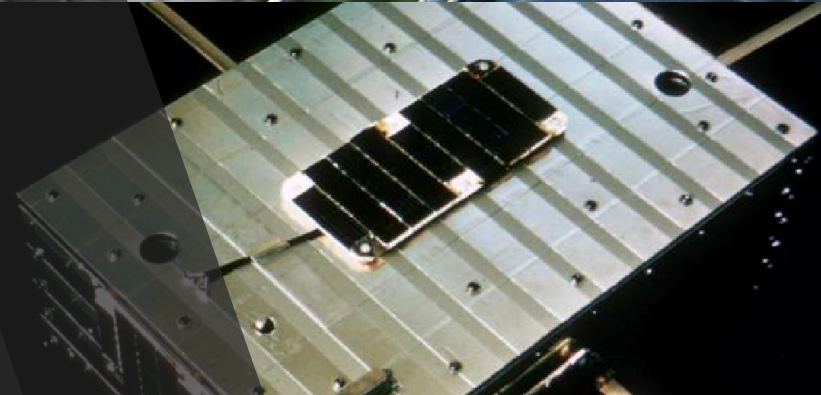
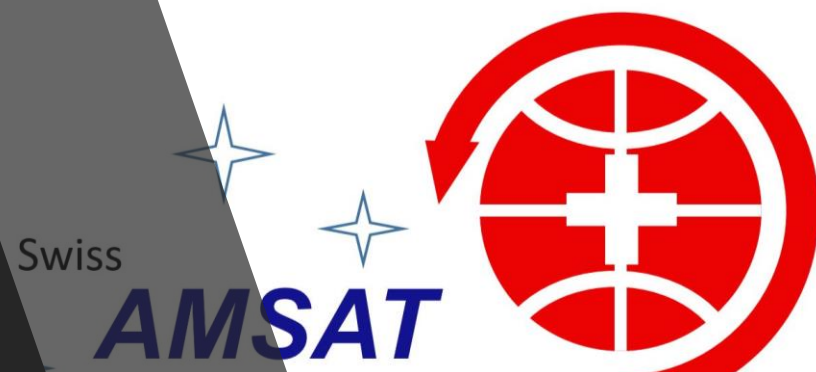
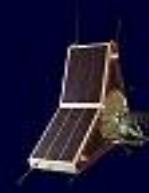


Einführung/Faszination
Amateurfunkdienst über Satellit

HB9WDF – Michael Lipp

**Amateurfunkdienst
über Satellit
«Mission Control
bei sich zu Hause»**





ITU Radioreglement

- Seit 1982 ist der Amateurfunkdienst über Satellit bei der ITU geregelt
- Regelt den Amateurfunkdienst an Bord eines Satelliten oder Raumstation
- Erlaubt die Codierung von Kontrollsignalen von der Bodenstation auf der Erde zum Satelliten (nicht umgekehrt)



Frequenz Zuordnung (VFKV Bakom)

HF	VHF / UHF	SHF / EHF
7000 – 7200 kHz	144 – 146 MHz	5650 – 5670 MHz
14000 – 14250 kHz	435 – 438 MHz	10450 - 10500 MHz
18068 – 18168 kHz	1260 – 1270 MHz	24000 - 24050 MHz
21000 – 21450 kHz	2400 – 2450 MHz	47,000 - 47,200 GHz
24890 – 24990 kHz		76,000 - 77,500 GHz
28000 – 29700 kHz		77,500 - 78,000 GHz
		78,000 - 81,500 GHz
		134,000 - 141,000 GHz
		241,000 – 250,000 GHz



IARU Region 1 Bandplan

HF	VHF / UHF	SHF / EHF
29300 – 29510 kHz	144.000 – 144.025 MHz	3400 – 3410 MHz
	145.794 – 145.806 MHz	5650 – 5670 MHz
	145.806 – 146.000 MHz	5790 – 5850 MHz
	435.000 – 438.000 MHz	10450 – 10500 MHz
	1260 – 1270 MHz	24048 – 24048,8 MHz
	2400 – 2450 MHz	24049 – 24050 MHz
		47088 – 47090 MHz
		76000 – 81000 MHz
		122,25 – 123,00 GHz
		134,00 – 141,00 GHz
		142,00 – 149,00 GHz
		241,00 – 250,00 GHz



IARU Satellite QRG Koordination

- IARU Satellite Adviser
Hans Blondeel Timmerman, PB2T
- Region 1:
Graham Shirville, G3VZV
Mike Rupprecht, DK3WN
- Region 2:
Lee McLamb, KT4TZ
Edson Pereira, PY2SDR
- Region 3:
Shizuo Endo, JE1MUI
Chen Ping, BA1HAM



The International Amateur Radio Union

Since 1925, the Federation of National Amateur Radio Societies
Representing the Interests of Two-Way Amateur Radio Communication

IARU Amateur Satellite Frequency Coordination

List of Satellite requests which have formally requested coordination.

[Back to Sat Coord Home Page](#)

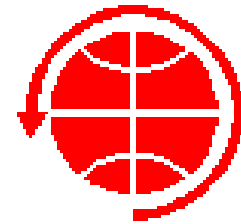
[Click on the detail button, for more details](#)

Sat Name ↑ ↓	Supporting Organisation ↑ ↓	
OpenOrbiter 1	University of North Dakota	Detail
JASAT-1	Radio Amateur Society of Thailand	Detail
RADSat	Embry-Riddle Aeronautical University	Detail
Ionospheric Neutron Content Analyzer	New Mexico State University NanoSat Lab	Detail
TTU100	Tallinn University of Technology	Detail
DSM-BRAC	University of Michigan	Detail
RSP-00	Rymansat Project	Detail
MemSat-1	Rowan University	Detail
EnduroSat A	Association Tsiolkovsky	Detail
AUTcube2	Aich University of Technology	Detail
FEES	GP Advanced Projects srls	Detail
CubeBell	Belarus State University	Detail

The IARU Amateur Satellite Frequency Coordination Status pages are hosted by [AMSAT-UK](#) as a service to the world wide Amateur Satellite Community



Die AMSAT



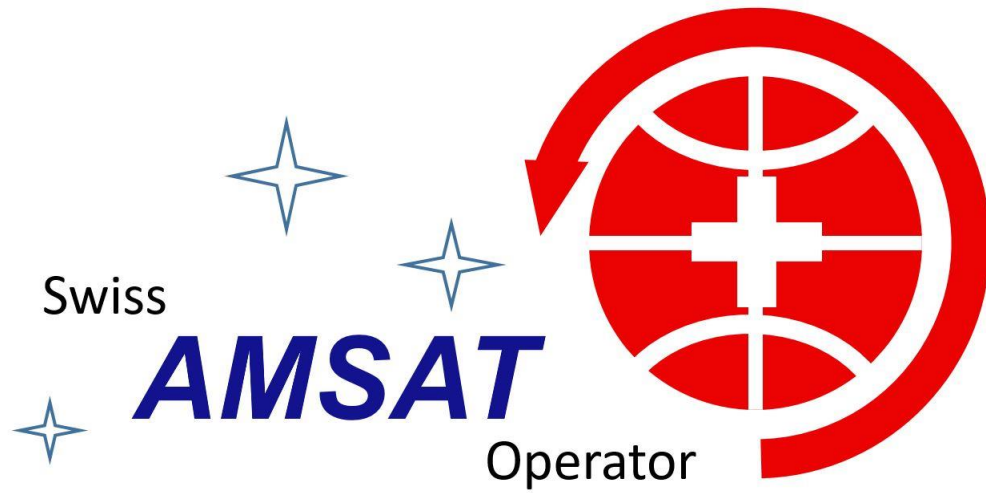


Amsat Meetings





AMSAT-HB?



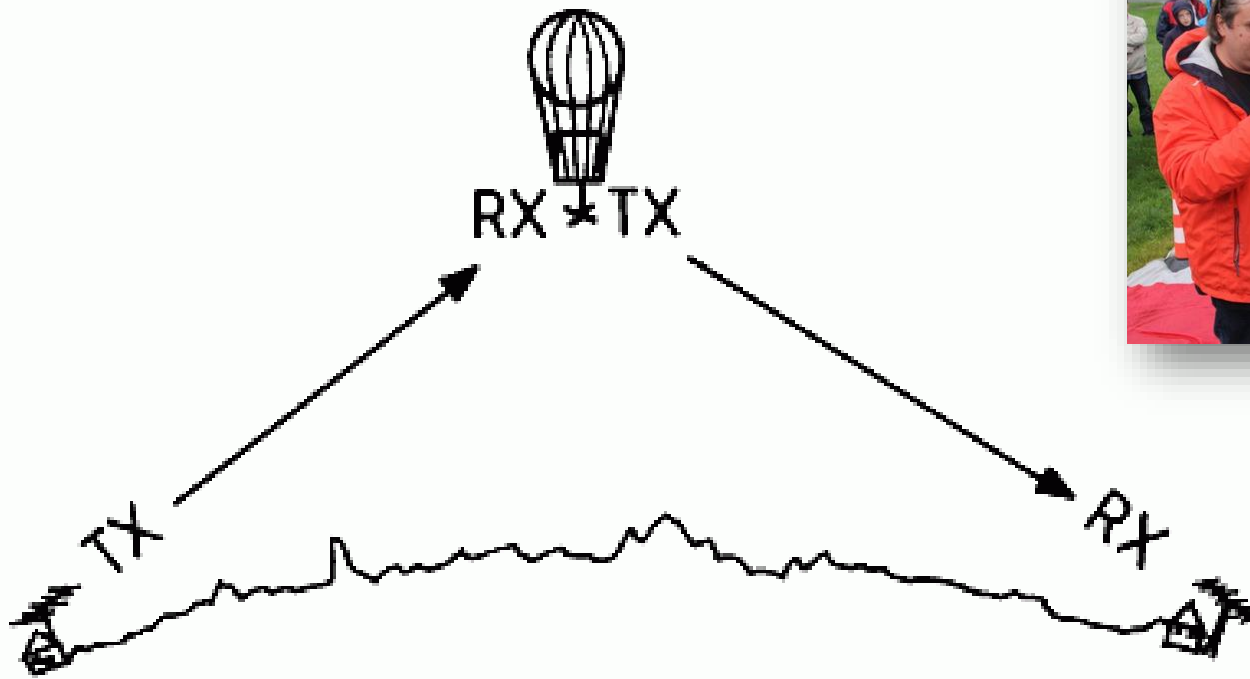


AMSAT-HB



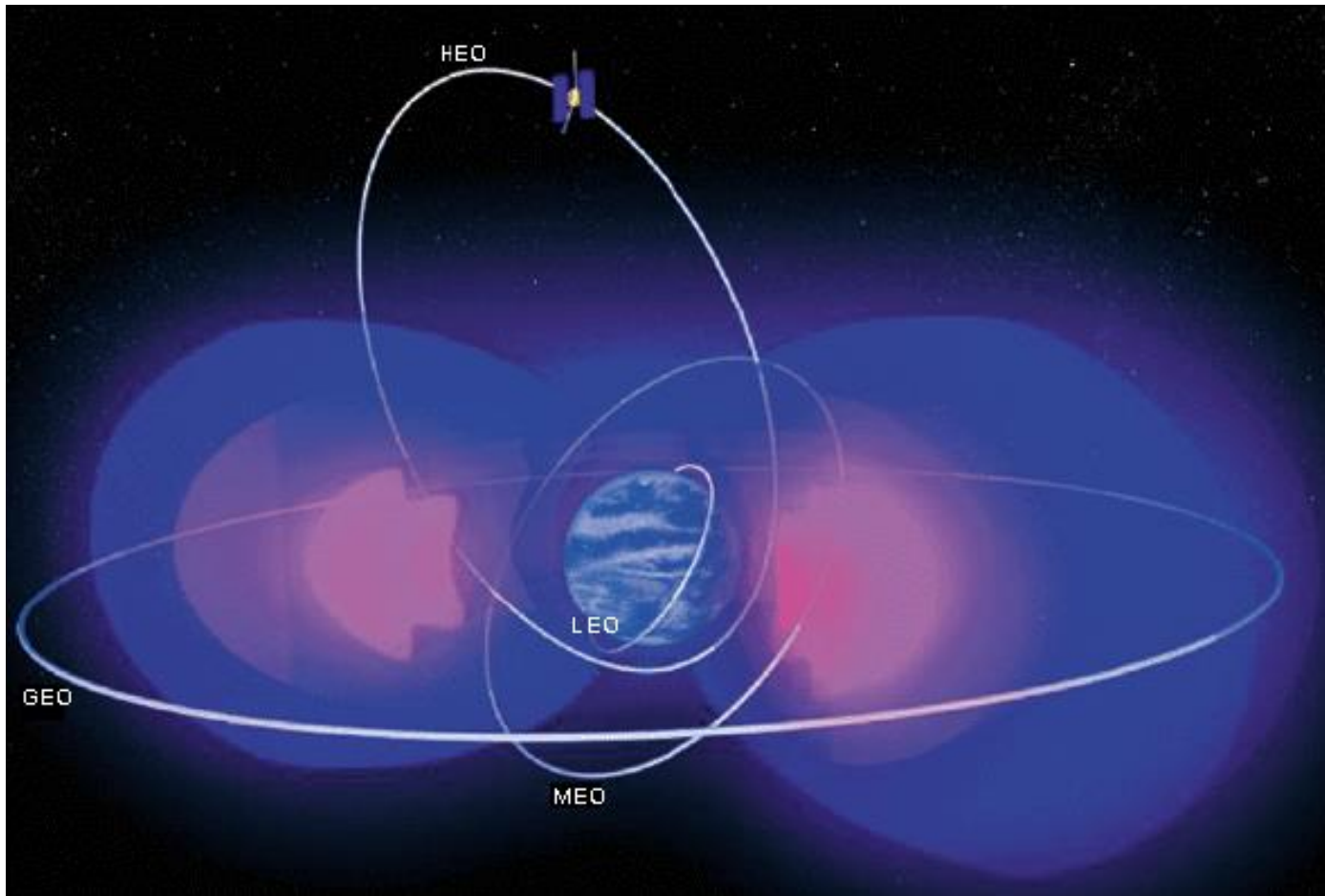


AMSAT Phase 1





AMSAT Phase 2, 3 und 4



Phase 2 = LEO
P2A war AO-6

Phase 3 = HEO (MEO)
P3A resp P3B ist AO-10

Phase 4 = GEO
P4A ist (wird) Es'Hailsat 2



AMSAT Phase 5



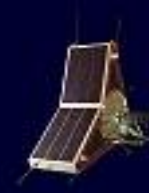
- Satelliten der Phase 5 verlassen den Erdorbit
- Das P5A Projekt ist eingefroren



Team Project OSCAR Association



Don Stoner, W6TNS†, Fred Hicks, W6EJU, Hank Brown, W6HB†, Nick Marshall, W6OLO†, Chuck Townes, K6LFH, Lance Ginner, K6GSJ, Gene Root, WB6OOO†, ChuckSmallhouse, WA6MGZ, neuW7CS, Harley Gabrielson, K6DS, und Bill Eitel von EIMAC, W6UF (Reihenfolge entspricht nicht dem Foto) ca. 1960



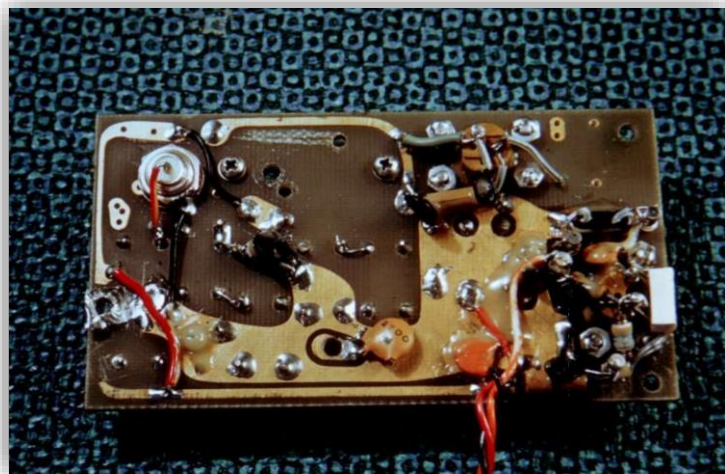
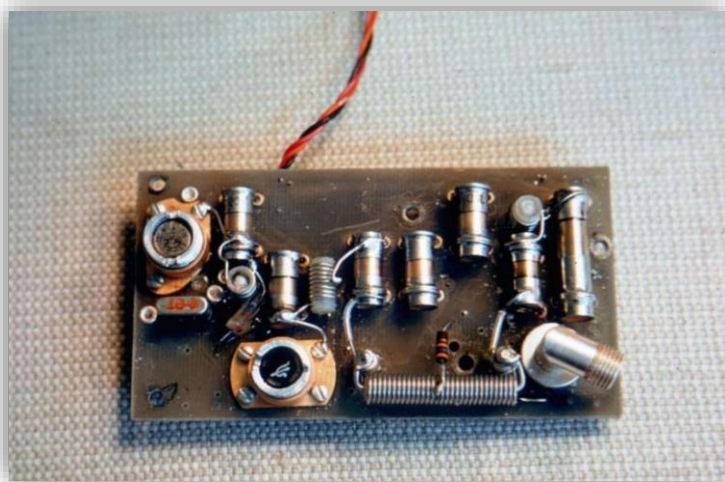
PROJECT OSCAR

- Der erste Satellit für den Amateurfunkdienst wurde 1961 in einer Garage gebaut und im selben Jahr in den Weltraum gebracht



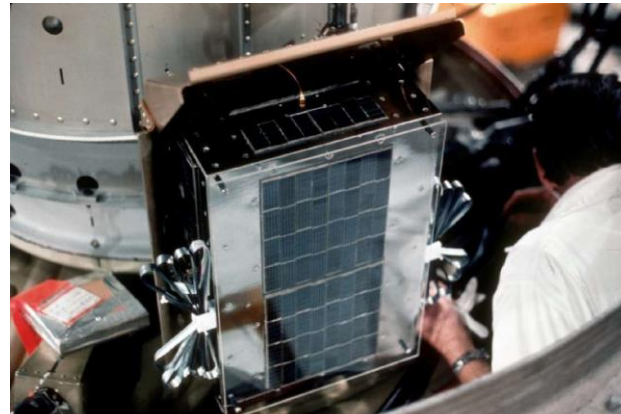
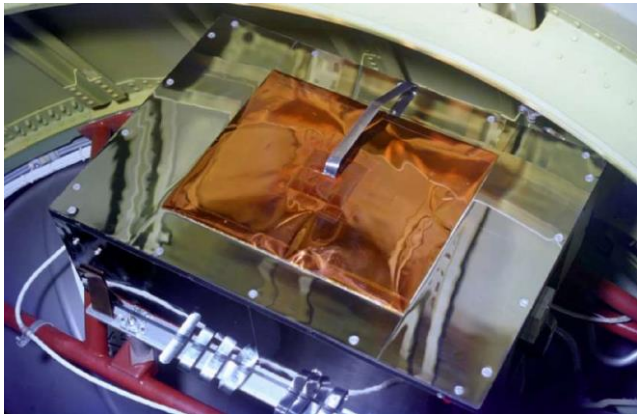
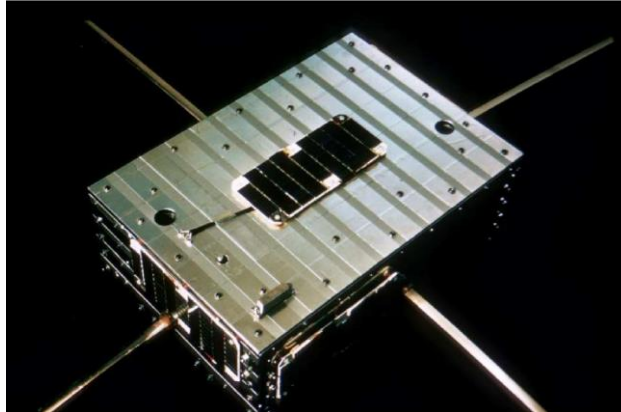
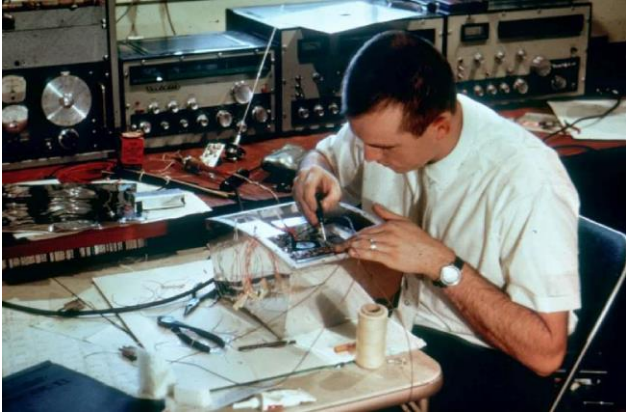


Lance Ginner, K6GSJ und OSCAR I





Weitere OSCAR's folgten



OSCAR-II bis AO-7 (von oben links nach unten rechts)



Das ersten Satelliten QSOs

----- OSCAR 3 Report -----

Communications Results

BY H. C. GABRIELSON, * W6HEK

At about 1933 GMT on the ninth of March 1965, the OSCAR III satellite crossed the Equator in the vicinity of 297 degrees west longitude to begin orbit number one. The nominal orbit parameters were: altitude - 570 statute miles; period - 103.5 minutes; and inclination - 70 degrees. The orbit was very nearly circular. The Oscar-satellite package contained a communications repeater (termed a translator), a c.w. beacon transmitter and a telemetry transmitter, all operating in the international portion of the 2-meter amateur band. The c.w. beacon failed to operate normally, while the telemetry transmitter sent temperature and voltage data for several months. The translator functioned for about 250 orbits (18 days) at which time the primary battery ran down.

This is a summary report of the communications performance of the translator portion of the Oscar III satellite. Other phases of the operation will be covered later in separate reports. It is the intent of this report to present a listing of stations that made contacts through the satellite, a listing of stations that reported hearing relayed signals, and lists of station calls that were reported as being heard through the satellite. The information contained herein is based on information reports submitted by nearly 300 observing stations.

Contacts

A total of 176 two-way contacts was claimed through Oscar during 247 orbits of active translator operation. List I shows call letters of stations successfully communicating through the satellite, along with the number of contacts made by each. Contacts were made by 98 participating stations, 67 from North America and the remaining 31 from Europe. All continental U. S. call areas plus Canada and Alaska are represented in the North American list. In Europe, contacts were reported by stations in Germany, Finland, Sweden, France, Spain, Switzerland, Belgium, England, Czechoslovakia and Lithuania. Transatlantic contacts were reported between Germany (DL3YBA) and Massachusetts (W1BU) during orbit 61, and between Spain (EA4A0) and New Jersey (W2AZL) during orbit 157. While several transcontinental contacts were noted, the longest distance was between Alaska (KL7CUH) and New York (K21EJ). The great majority of all contacts were made using c.w. but 5 stations made voice contacts using sideband. DJ4ZC reported s.s.b. contacts with DL3YBA, HB9RG, and DJ4AU. DL3YBA also reported a sideband contact with DJ4EZ.

Heard Reports

Heard reports were submitted for the following stations on sideband: DJ4EB, DJ4JC, DJ4YP, OZ4RO, W1BU, W4HUQ, W5QDL, K5RHL, W6DEE, W6GDO, W7JCU, K7DZG, KB9PA, W9WDB, W9WDD and ?DQI. A few weak but identifiable a.m. carriers were reported and several observers reported hearing teletype signals. None of the teletype signals was identified. Transmitting stations from Europe, North America and Australia - New Zealand, were logged. Table II is a tabulation of the 273 observing stations who submitted reception reports of signals heard through the satellite. The listing also shows the number of reports by each reporting station and is arranged in descending order of the number of reports submitted.

* 1150 Polk Ave., Sunnyvale, Cal.

Table III is given in three sections (A, B, and C) showing all of the station calls which were reported as being heard through Oscar. This list, too, is arranged in descending order of the number of times each station call was reported. Table III-A shows the 275 station calls which were reported two or more times. The number following each call is the number of times that call was reported. Table III-B shows the 822 calls that were reported once. Table III-C is the list of 459 partial calls which were reported.

The total number of different complete calls (1097) reported may be somewhat misleading. It will be noted in scanning the lists of calls reported once or twice that some of them are probable misinterpretations of the call of one of the more actively-reported stations. For example, WA2WEB was the subject of 115 reception reports. Also in the list you will find W2WEB (twice), WA2WEH, WA2WEK (twice), WA2WEP, WA2WEX, WA3WEB, WA4WEB, and WA6WET. All of the reported calls have been reproduced in these lists just as they appear in the incoming reports. Similarly, some of the partial calls in list 3C are apparently incomplete versions of the more active calls (for example, WA2WE7). Again, all such calls have been presented in these lists just as they appear in the incoming reports. I have taken the liberty of omitting, as being of no real value, those reports which simply stated the fact that several W1s 2s etc. were heard in the translator passband.

In addition to the information incorporated as part of this report, there are several comprehensive source lists available. The basic list (about 2750 lines) shows the specific heard calls which were reported during each orbit by each reporting station. This information is arranged either in alphabetic sequence by the call letters of the reporting station or in orbit sequence. This same basic information has also been rearranged (3550 lines) in the form showing the heard stations which each listening station reported hearing during each orbit. This version of the comprehensive list is also available in either call letter or orbit sequence. In addition there is a complete listing of all reported contacts. Any of these lists can and will be made available in several different forms: as printed lists, as decks of punched cards, as punched paper tapes (either 5 or 8 level), or as magnetic data tapes. Write to Project Oscar, Inc., Foothill College, Los Altos, Calif., for details about obtaining.

Thanks are due to M. C. tapes; to Bill Eitel, punched cards; and to allowing use of the 16 pre. sentable form. A great deal of credit for their participation, this

OSCAR 3 Report Frühling 1965

one between Alaska (KL7CUH) and New York (K21EJ). The great majority of all contacts were made using c.w. but 5 stations made voice contacts using sideband. DJ4ZC reported s.s.b. contacts with DL3YBA, HB9RG, and DJ4AU. DL3YBA also reported a sideband contact with DJ4EZ



Weitere AMSAT Highlights



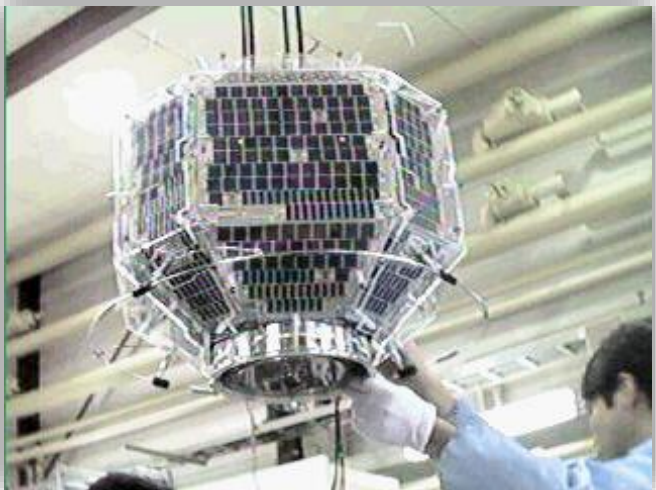
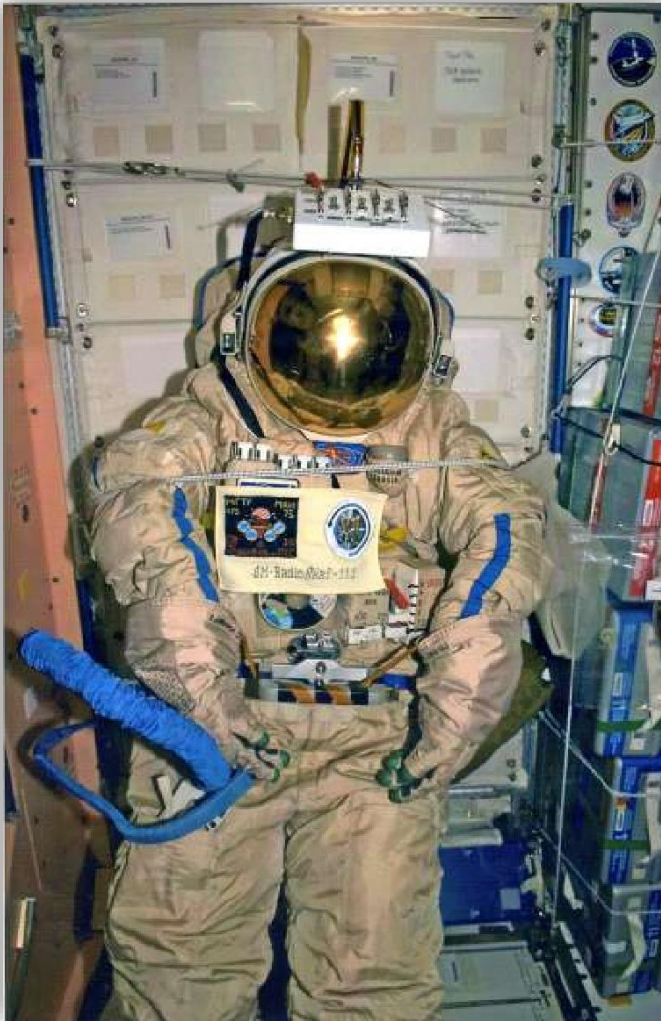


Weitere AMSAT Highlights





Weitere AMSAT Highlights

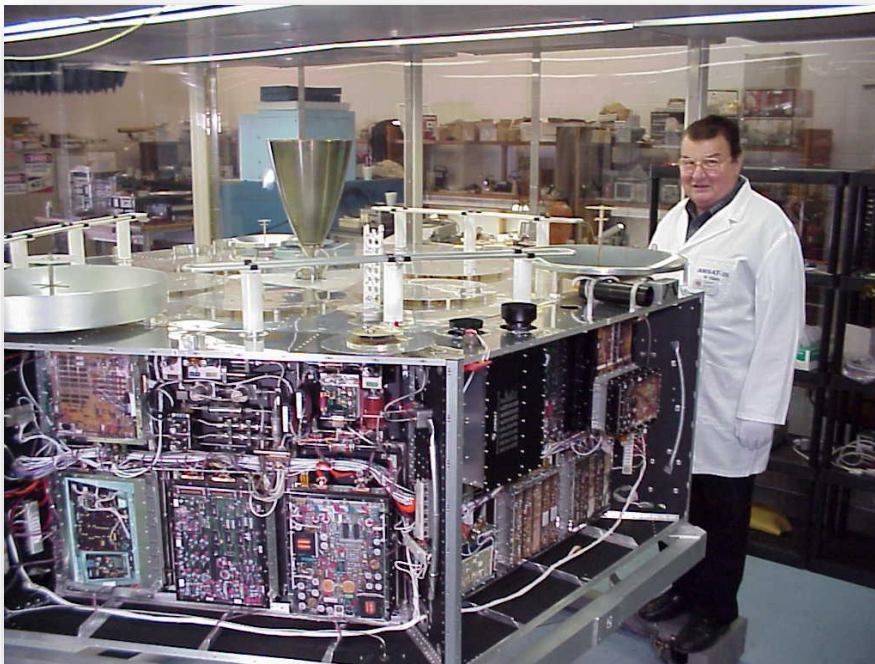




Und wer bezahlt das?

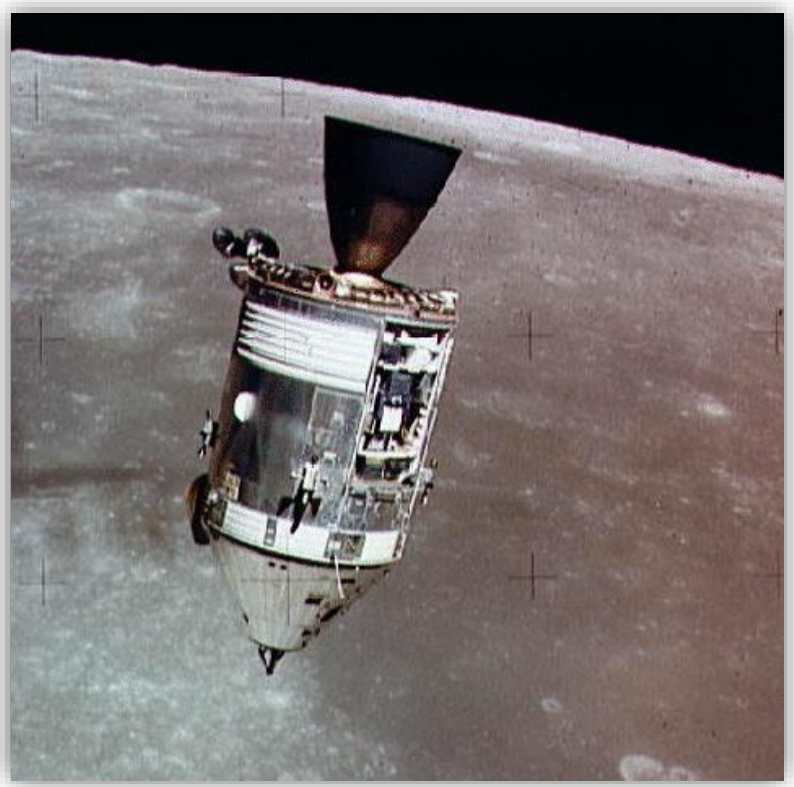
Der Bau der Satelliten wird durch
Spendengelder finanziert
AO-40 ~4,5 Mio USD

Start
bis AO-40: Geringe «Startgebühr»
Ab AO-40 volle Startkosten
(50 -100 Td/kg)





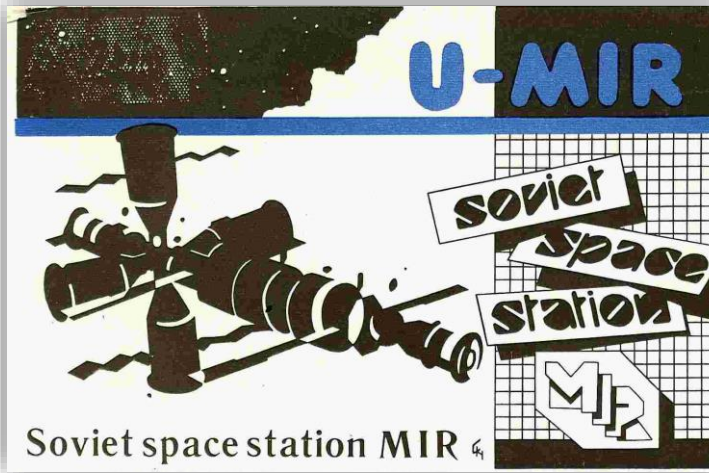
Ham in Space



Project Moon Ray

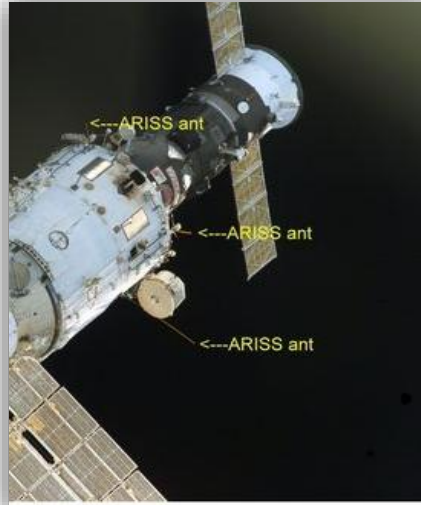


Ham in Space – SAREX, MAREX, ARISS





ARISS





Kooperation AMSAT und ARISS

- ARISS ist eine eigene Organisation
- Entwicklung und Bau wird durch die Organisation getragen
- Im JSC Houston ist eine Person nur für ARISS eingestellt, der die Termine zwischen den Schulen und den Raumfahrtbehörden koordiniert (100 Td USD pro Jahr)
- ARISS finanziert sich über Spendengelder



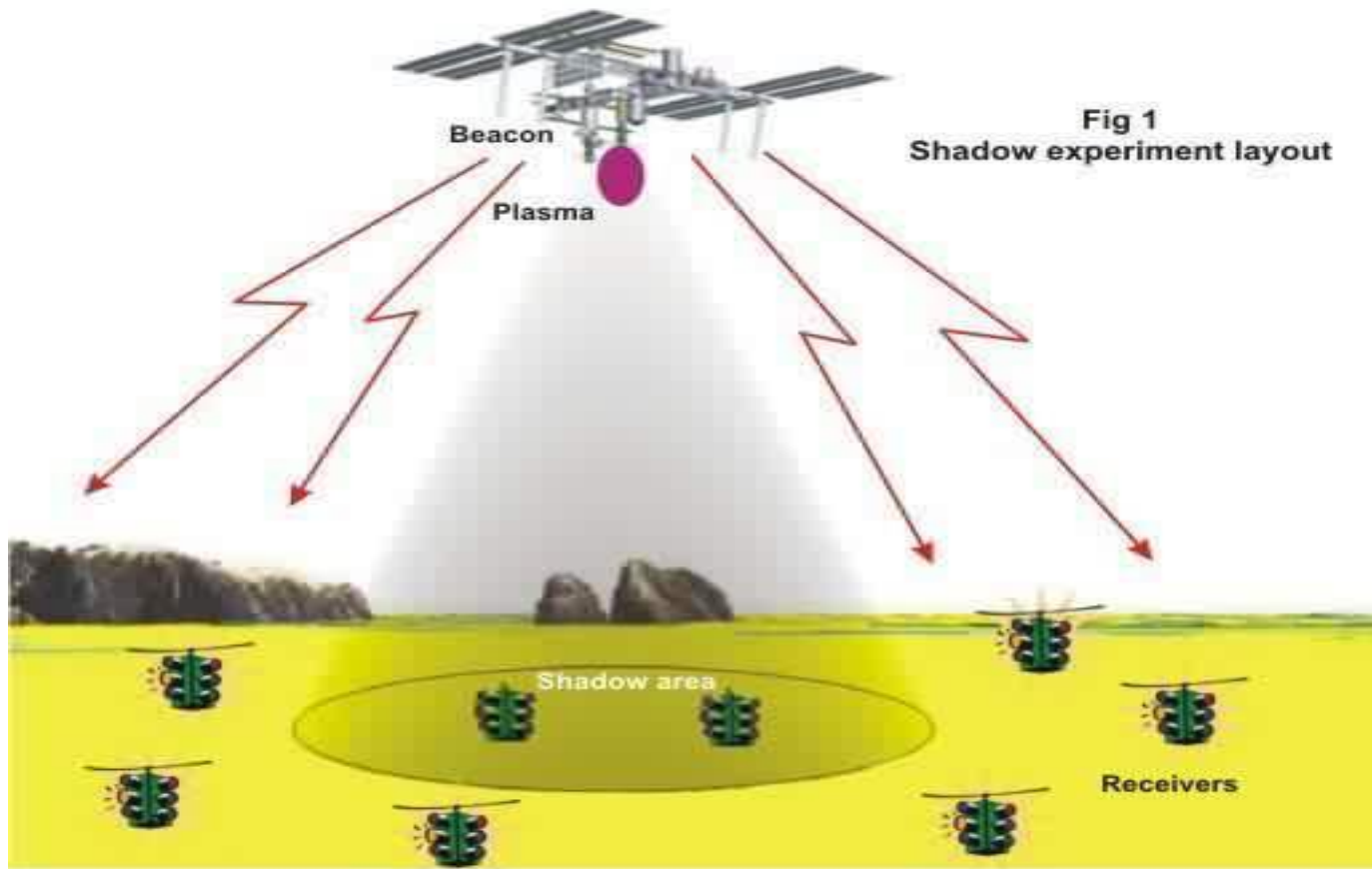
Kenneth Ranson, N5VHO



ARISS Powersupply

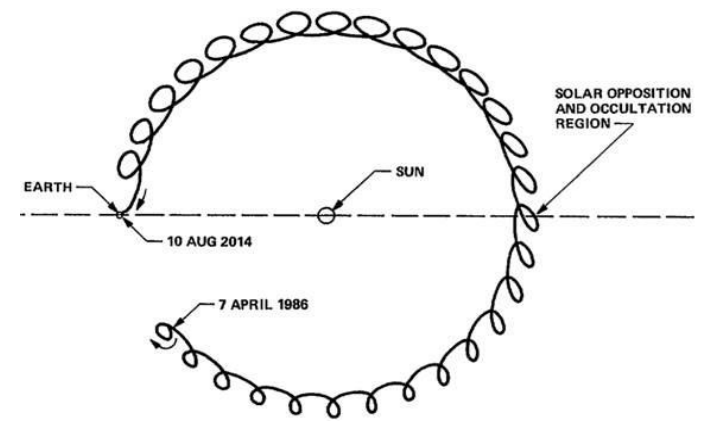
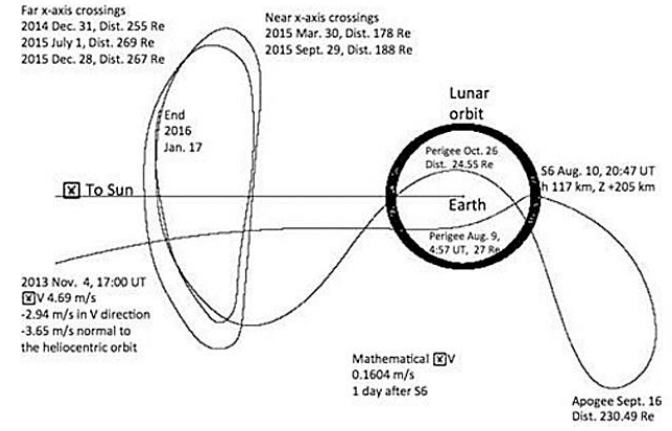


Space Science Involvement





Space Science Involvement





Space Science Involvement

