



MISIJA LITUANICA 80

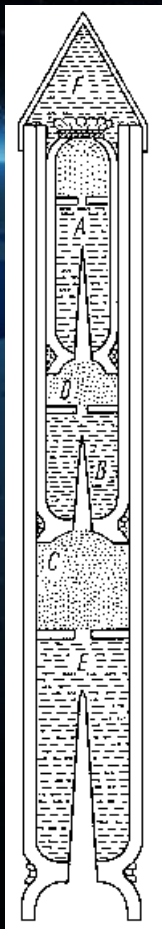


THE FIRST STEP TO SPACE



The first Lithuanian satellites were launched on
February 28, 2014.

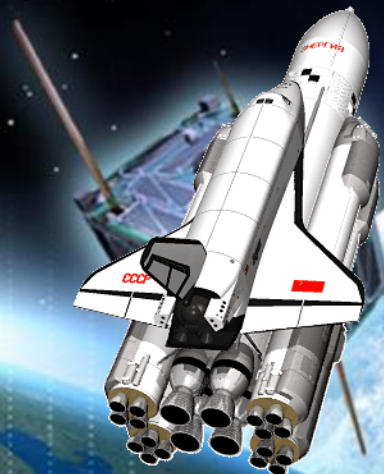
LITHUANIAN SPACE HISTORY



**Kazimieras
Simonavičius
(1600-1651)**



**Aleksejus
Stanislavovičius
Jelisejevas
(Kuraitis)
1969 -1971**



**Rimantas Antanas
Stankevičius, 1977**



**Karol Joseph Bobko
"Bo" 1983 -1985**



SATELLITE LITSAT-1

Category of the LITSAT-1



8000 kg



1400 kg



360 kg



3 kg



0,3 kg

Mini

Micro

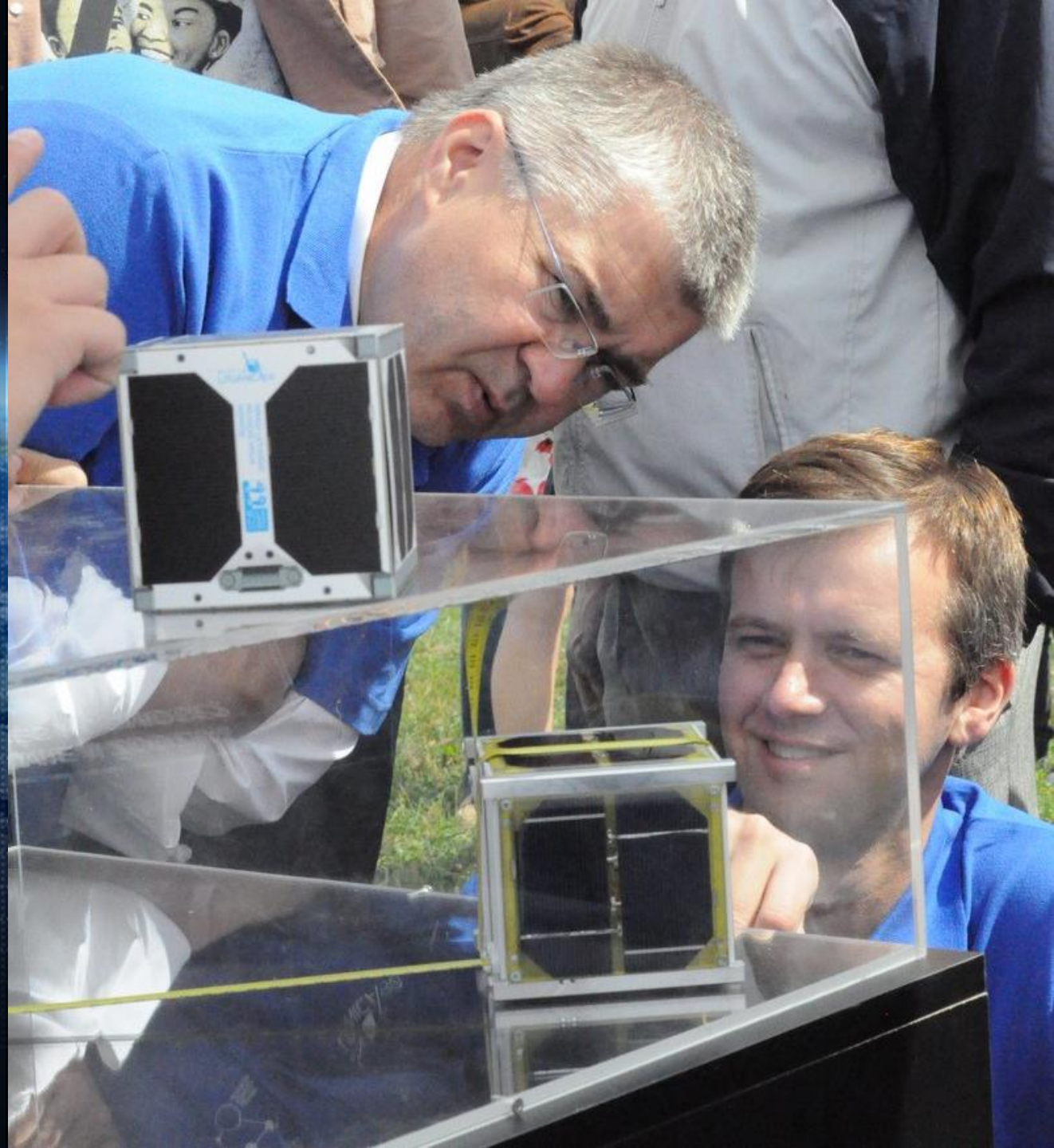
Nano

Pico

LITSAT-1

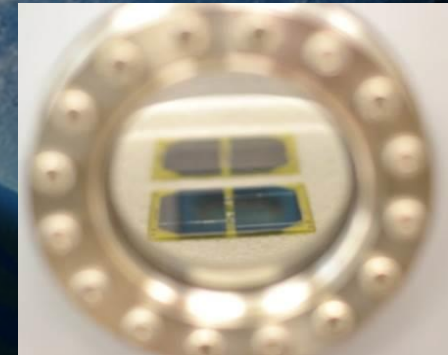
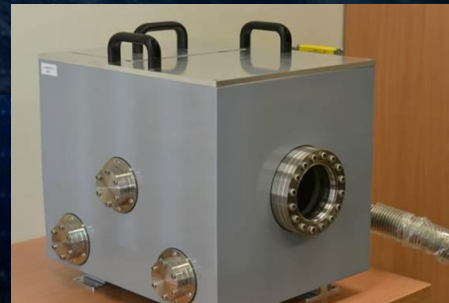
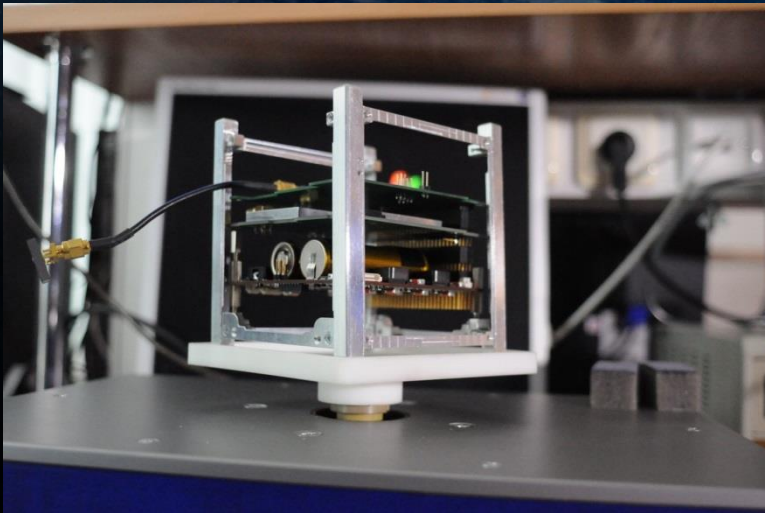
**VOLUME—
10 CM³**

**WEIGHT—
0,9 KG**



SAFETY TESTS

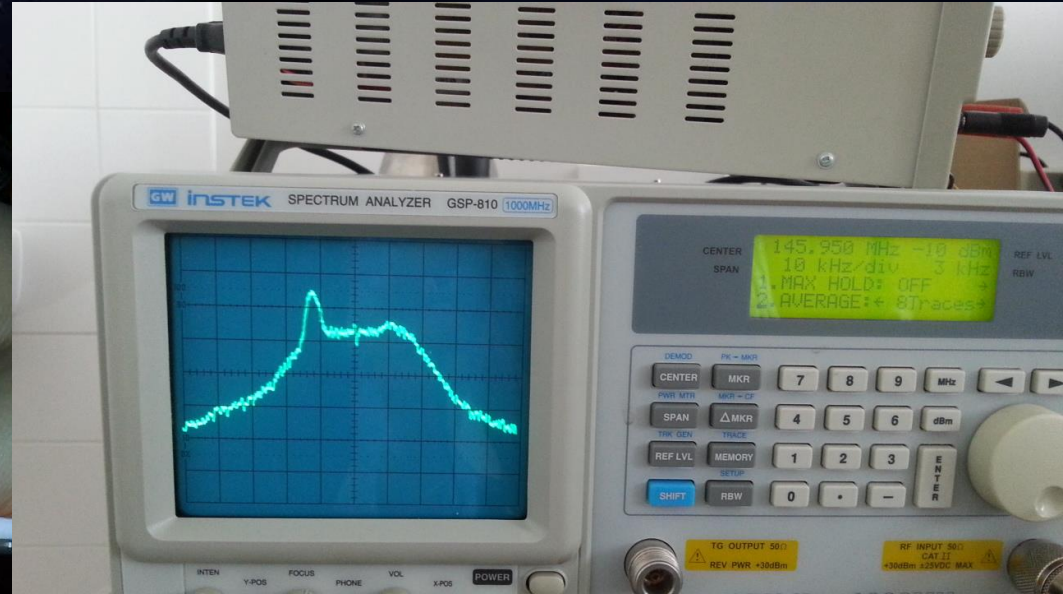
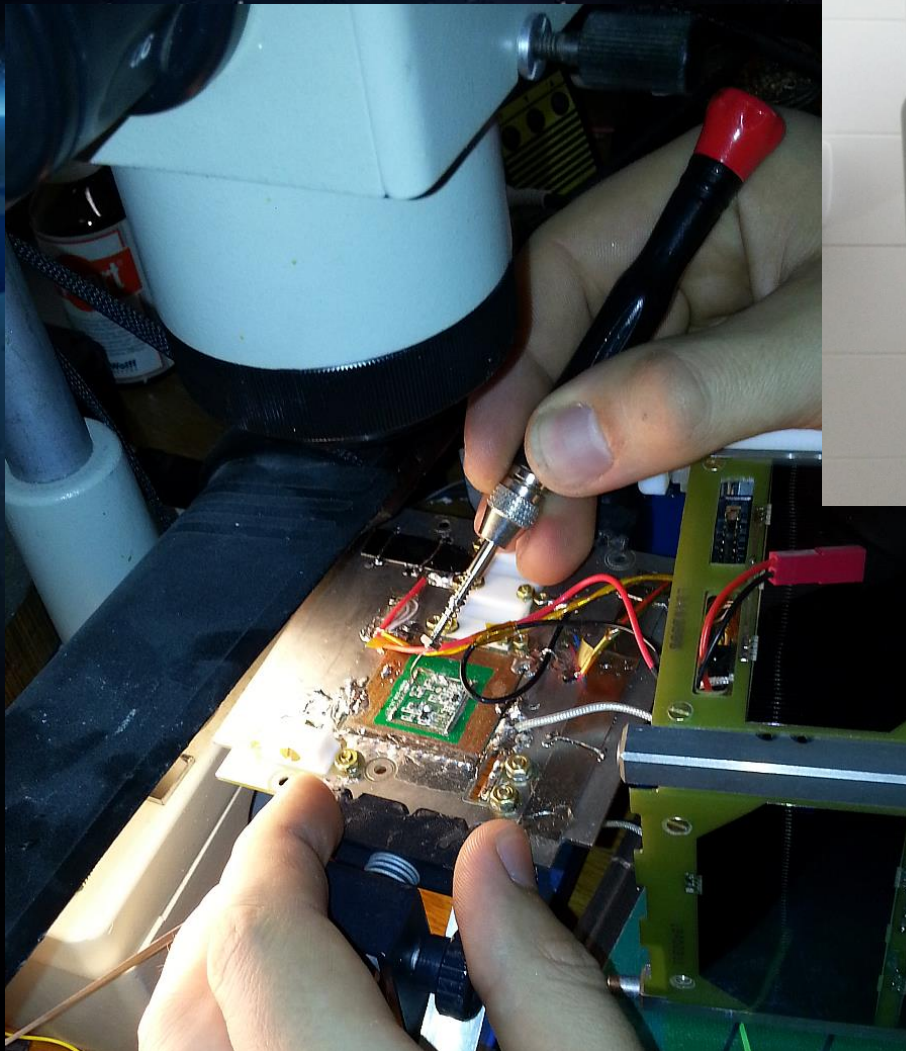
- Vacuum tests
- Temperature tests
- Vibrations tests

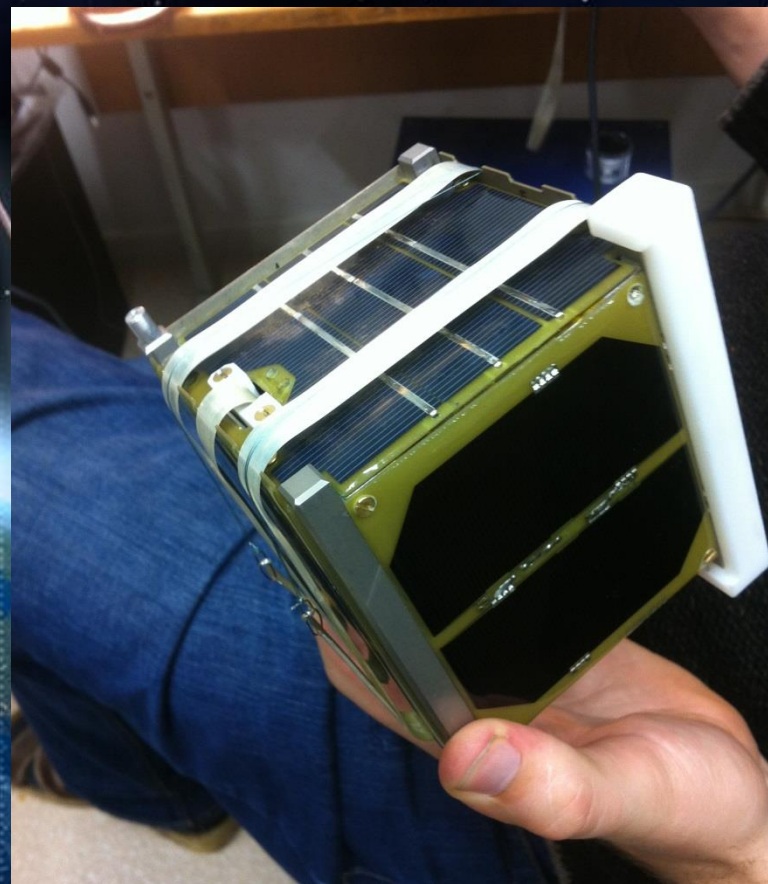


MISIJA VYKOO:



Work...

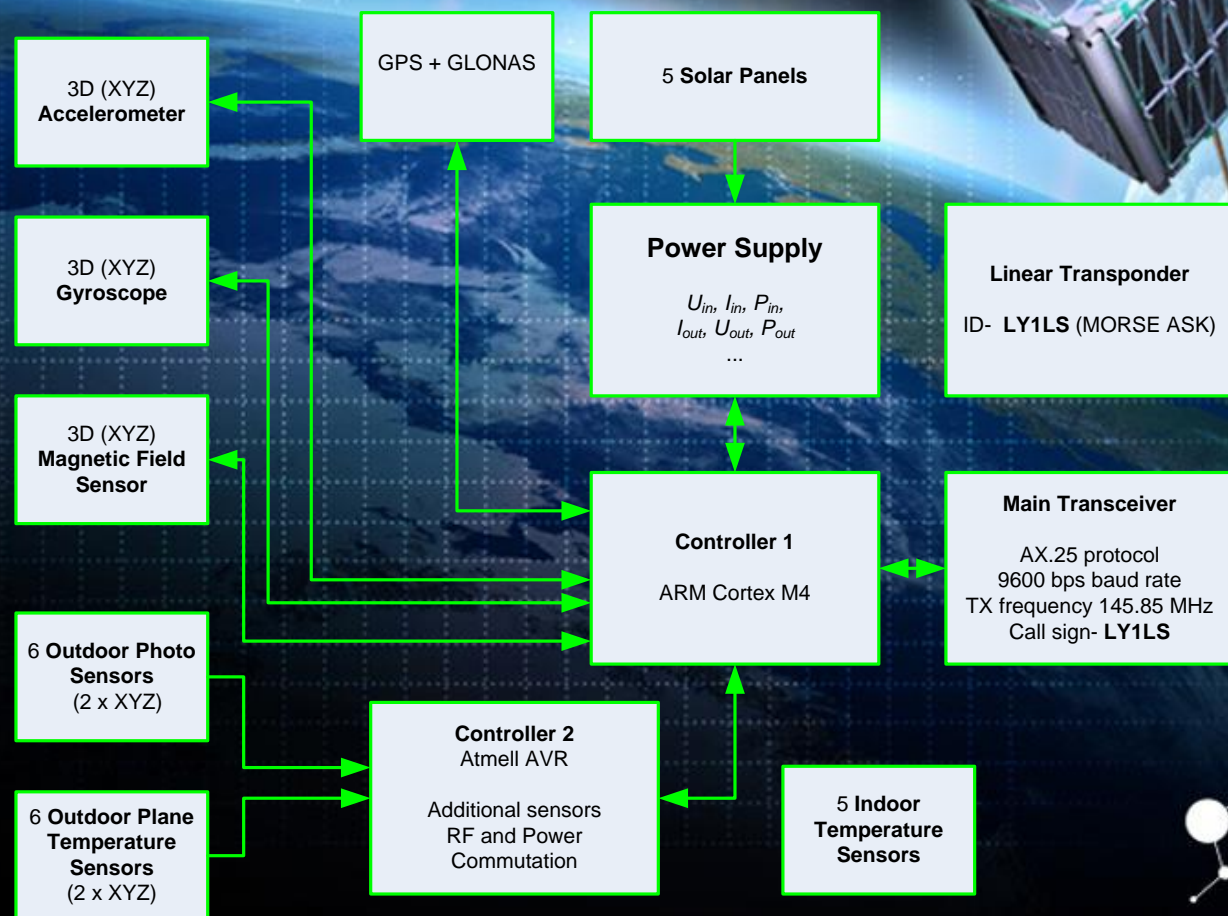




MISIJĄ VYKOO:



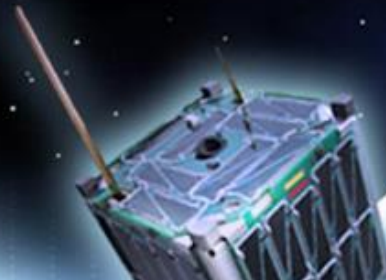
LITSAT-1 block diagram



MISIJA VYKOO:



Ground stations



MISIJĄ VYKOO:



LITSAT-1 transportation to ISS



LITSAT-1 was transported to the ISS inside a CYGNUS spaceship by the American company ORBITAL.

Rocket launch:

Wallops Island NASA Flight Facility on January 9th.

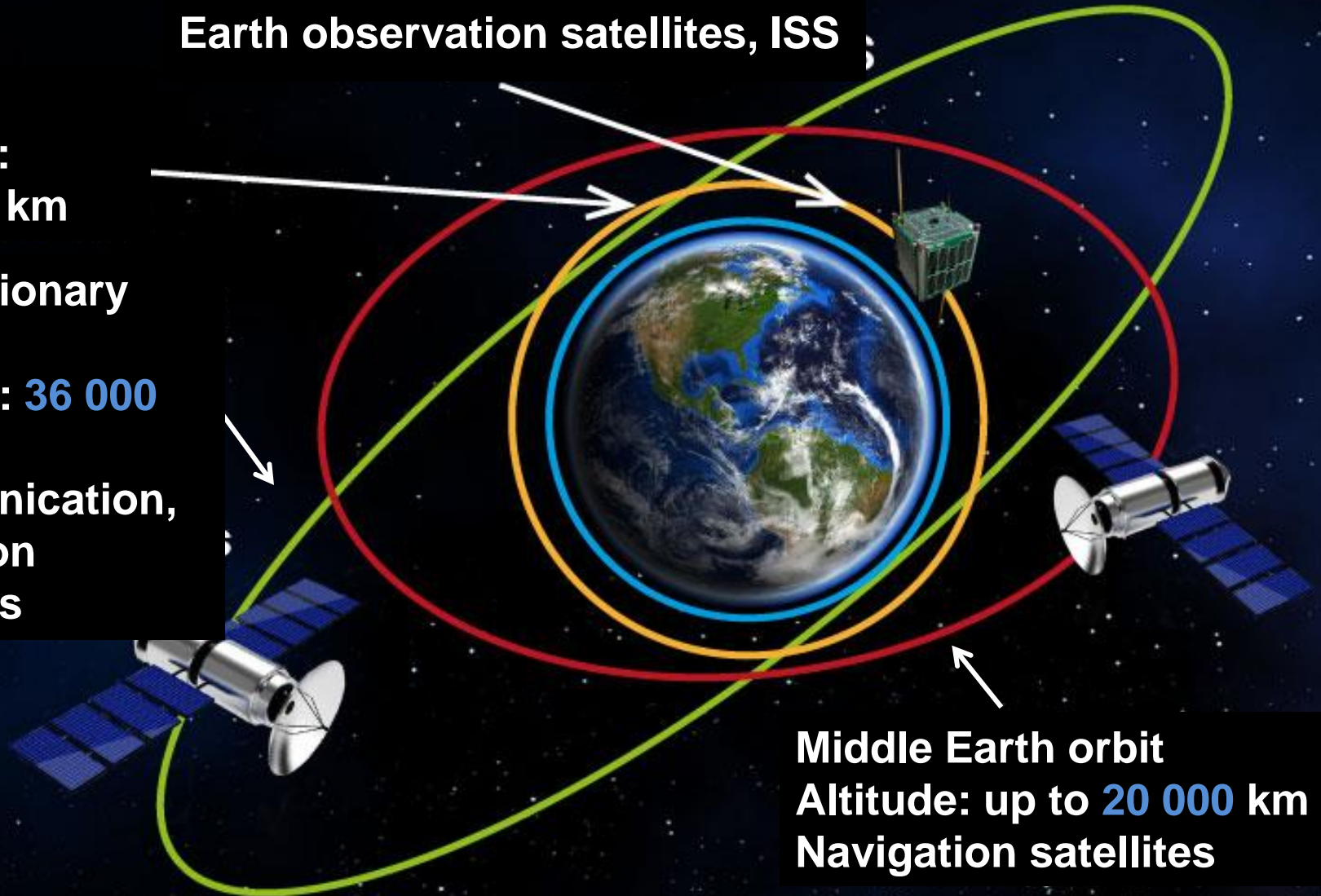


Low Earth orbit
Altitude: 400-2000 km
Earth observation satellites, ISS

Space
Altitude:
100-120 km

Geostationary orbit
Altitude: 36 000 km
Communication, television satellites

Middle Earth orbit
Altitude: up to 20 000 km
Navigation satellites



LITSAT-1 tasks



To test the duplex earth-satellite communication

To test the linear transponder

To test the GPS receiver

To test the main **processor board**

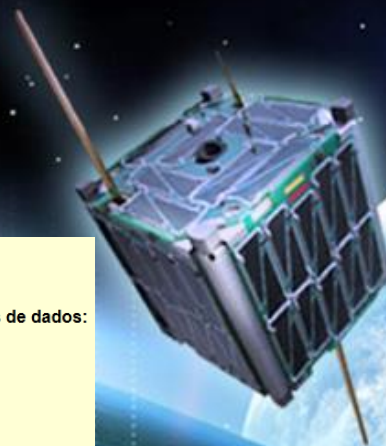
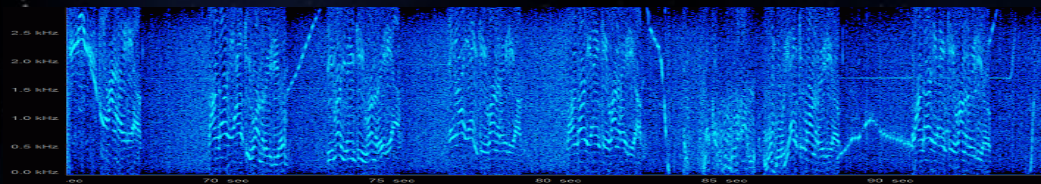
To measure the **orientation** of the satellite in the orbit

To test the solar **panels**

To test the **construction**

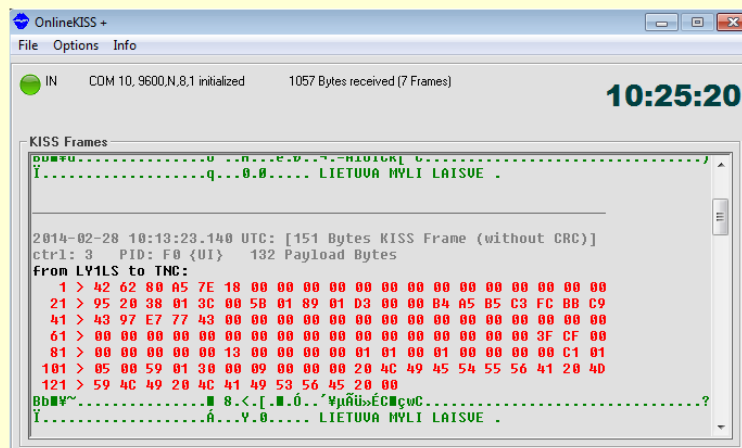


Mike Rupprecht (DK3WN)



Threshold (dB) 28/02/2014 07:22:47
Decay (ms)

É possível ver o prefixo LY1LS, e a frase "Lietuva myli laisve" = "Lituânia ama a liberdade", nos pacotes de dados:



RC)]
42 62
66 20
44 CD
00 00
06 00
00 0D

121 > 01 3E 01 21 00 58 00 00 00 20 4C 49 45 54 55 56 41 20 4D 59
141 > 4C 49 20 4C 41 49 53 56 45 20 00 C0
...X... LIETUVA MYLI LAISVE .A

MISIJA VYKOO:



LITSAT-1 flight

2014-02-28 d. 7:30 (UTC)- launch for an independent ' life'

0 s initialization, beginning of the sensors data accumulation

2450 s antenna extraction

2500 s beginning of the telemetry + 3 words data packets
broadcasting. Period 4567 ms

LITSAT-1 flight

„mas savaranki gyvenimui“

2014-02-28 d. 7:30 (UTC)- launch for an independent ' life'

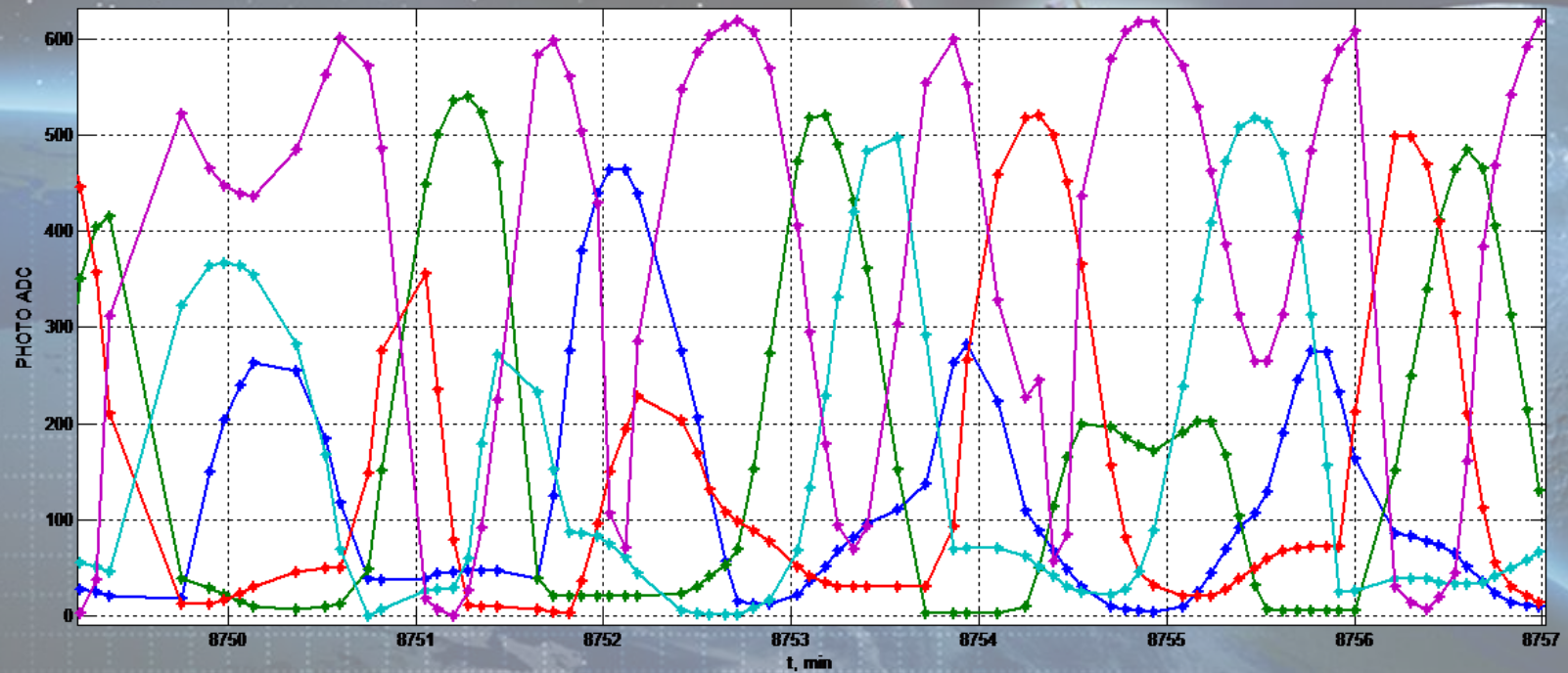
2014-02-28 d. 13:45 (UTC) (19496 s = 5:25 after the start) - successful reception and decoding of the LITSAT-1 telemetry data packets in a KTU control station.

2014-03-04 d. 13:30 (UTC) (364231 s) - successful transmission of the control command to turn on GPS module.

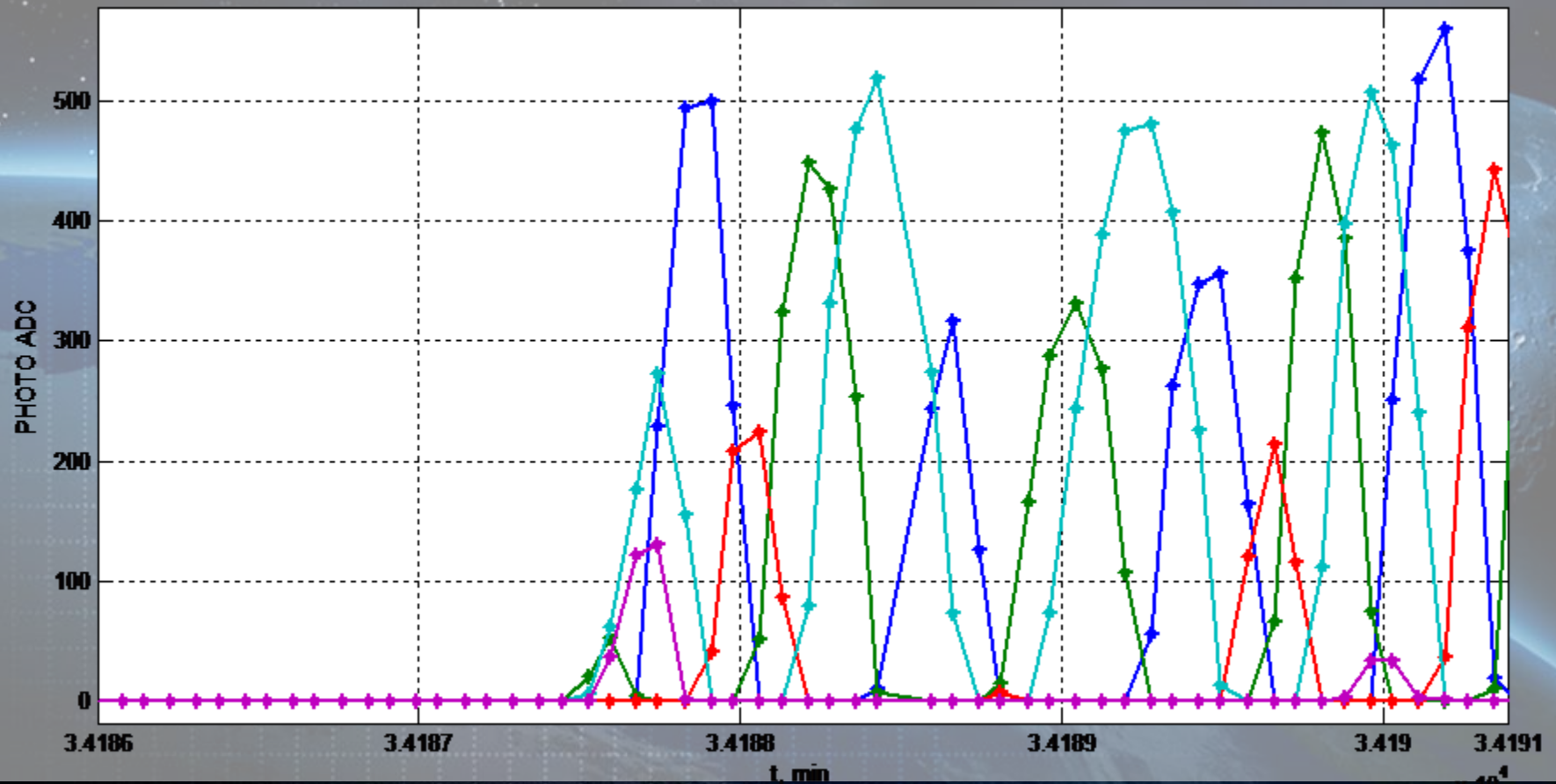
2014-03-09 d. - successful test of the linear transponder.

2014-03-11 d. - successful broadcasting of the FIRSTTHREE Lithuanian words from space.

LITSAT-1 flight



LITSAT-1 flight



LITSAT-1 flight

GPS:



LITSAT-1 flight

LITSAT1 telemetry decoder - TNC Control V1.1

Settings: LSSg000 TNC Send F9 HB 9600 K ON K OFF
 Clear RESET CONFIG

Received: 2014-02-28 15:45:03
 Flight time = 19496 s
 Vbat = 8284 mV
 Iin = 0154 mA
 Ieys = 0048 mA
 Isun1 = 0440 mA
 Isun2 = 0046 mA
 Isun3 = 0194 mA
 Bx = -265.9 uT
 By = 571.5 uT
 Bz = 25.4 uT
 Tcpu = -5990 C
 Tpsu = 16 C
 Tout_min = 00 C
 Tout_max = 00 C
 Boots = 19
 Last boot cause = 0

GPS OFF
 Linear transponder OFF

bbRAM loaded with default!

TASCO Radio Modem
 AX.25 Level 2 Version 2.0
 Release 09/15/99 2Chip ver 2.00
 Checksum \$CF
 cmd:

Orbiter 3.71 C:\Documents and Settings\... I:\LITSAT1\... Project1

World map showing satellite orbits and ground stations. A yellow dot indicates the current position of the satellite.

Kaunas: 23° 52' 54" E, 54° 53' 48" N

2014-02-28 15:45:10 (UTC +2:00)

Time - LOC	Satellite	Azm	Elev	Mag	Range	S.Azm	S.Elev
2014-02-28 15:45:10 ISS	ISS	253.7	5.0	2.1	1796	227.0	17.0
2014-02-28 15:40:47 ISS	ISS	156.6	36.4	0.1	671	220.0	16.6
2014-02-28 15:44:51 ISS	ISS	122.8	5.1	2.1	1884	228.9	16.1
2014-02-28 17:13:36 ISS	ISS	264.4	5.0	2.3	1873	248.4	5.4
2014-02-28 17:16:50 ISS	ISS	214.9	14.2	1.3	1259	249.1	5.0

Passes: Flares Predict

Main Visualisation Location Sat/Orbit Info Prediction Rotor/Radio About

Orbiter 3.71 (C) 2001-2006 by Sebastian Stoll

RT CLOCK LOC
 15:45:10
 2014-02-28

Satellite Data: Load TLE Show next

Legend: CUBESAT X-4V (CO-57), CUBESAT X-4V (CO-58), CUTE-1 (CO-59), CUTE-1.7-4PD II (CO-65), DELPHIC3 (CO-64), DELPHIC3, DOLBY, DOLBY, ECHO (AO-51), FIRST MOVE, PUNCHGUT1 (AO-73), GOMX-1, HAMSAT (VO-52), HOPU1/2, HUMSAT-D, ITAMSAT (JO-26), ITUPSAT 1, JAS-2 (PO-29), JUGNU, KKS-1 (KUSK), LUSAT (AO-19), MASAT 1, N-CUBED & EXP-1 PRIM, MOZHAYETS 4 (RS-22), OPTOS, OSCAR 7 (AO-7), PACSAT (AO-15), PACSAT (AO-44), PHASE 3B (AO-10), PICODRAGON, PRIM (HO-4), RADIO PASTO (RS-15), SAUDISAT 1C (SO-50), SEDSAT 1 (SO-33), SEEDS II (CO-66), SENSE SV1, SORASAT, STRAND-1, SWISSCUBE, TECHSAT 1B (GO-32), TISAT 1, TRITON-1, UNISAT-6, UOSAT 2 (JO-11), UWE-3, VELOX-PII





<http://www.litsat1.eu/>

