
DARIAUS
IR GIRĖNO
SKRYDŽIO
80-MEČIUI
PAMINĖTI
MISIJA
LITUANICA 80
LIETUVOS KOSMOSO ASOCIACIJA
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# THE FIRST STEP TO SPACE

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

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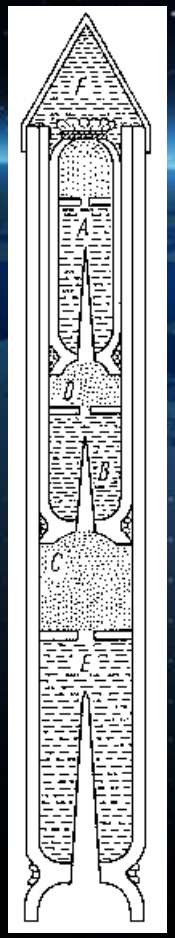
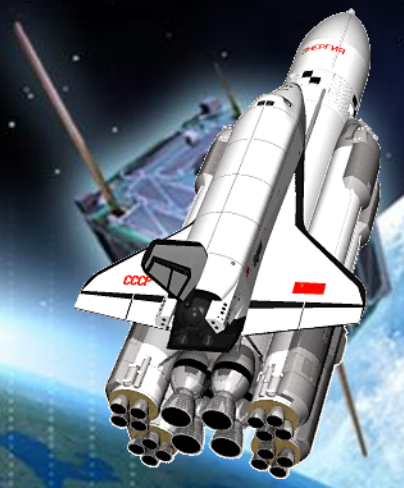
# LITHUANIAN SPACE HISTORY



Kazimieras Simonavičius (1600-1651)

Aleksejus Stanislavovičius Jelisejevas (Kuraitis) 1969 -1971



Rimantas Antanas Stankevičius, 1977

Karol Joseph Bobko "Bo" 1983 -1985



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SATELLITE LITSAT-1
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# Category of the LITSAT-1

8000 kg

1400 kg

360 kg

3 kg

0,3 kg

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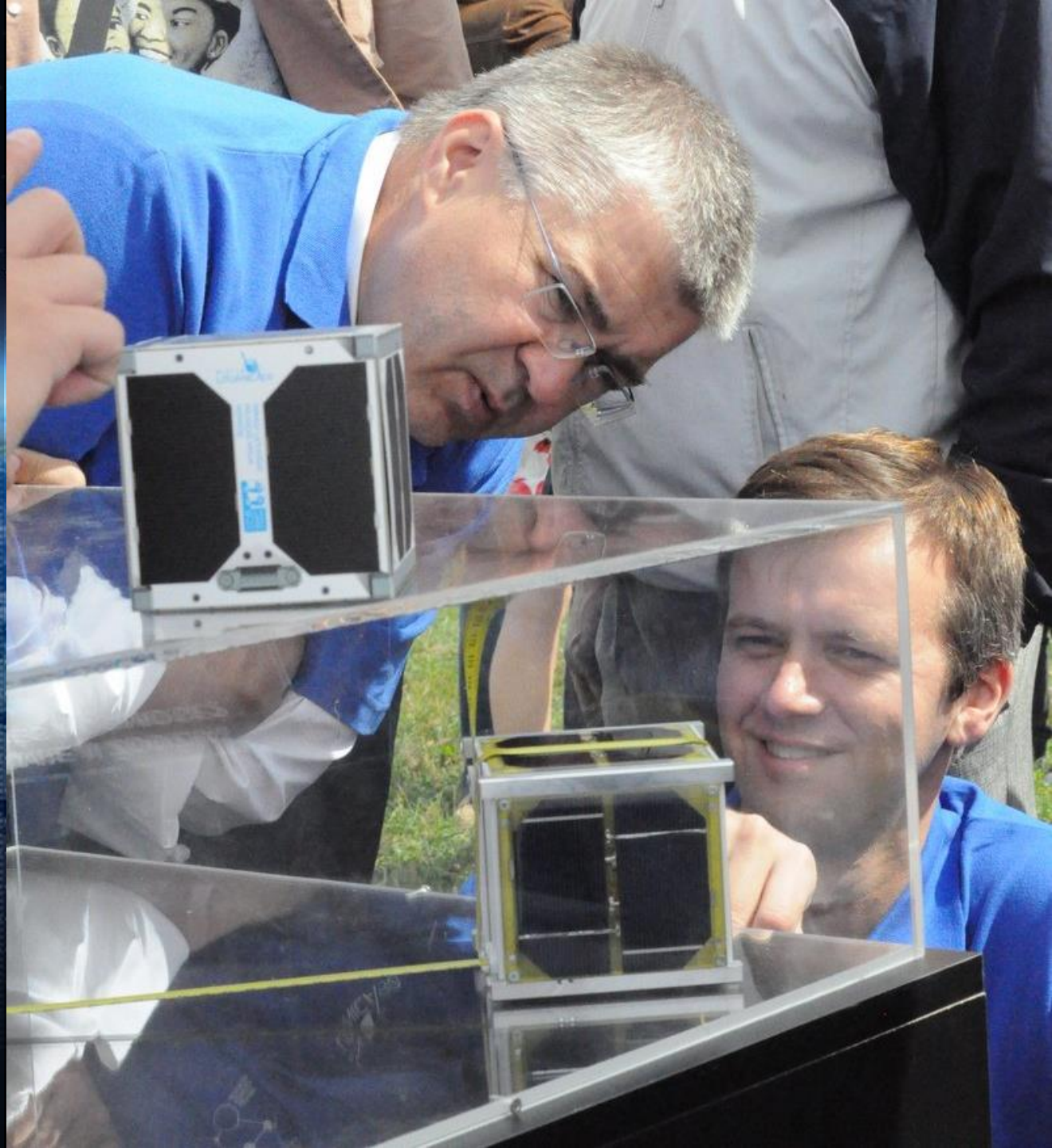
Mini Micro Nano Pico

# LITSAT-1

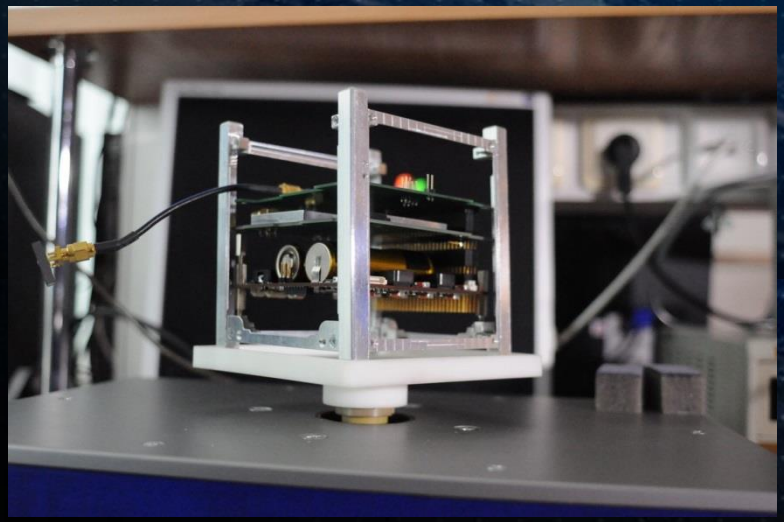
**VOLUME–**
**10 $CM^3$**

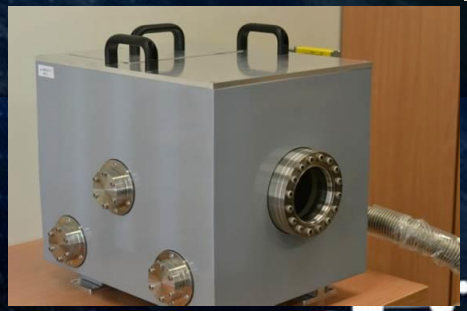
**WEIGHT–**
**0,9 KG**



# SAFETY TESTS

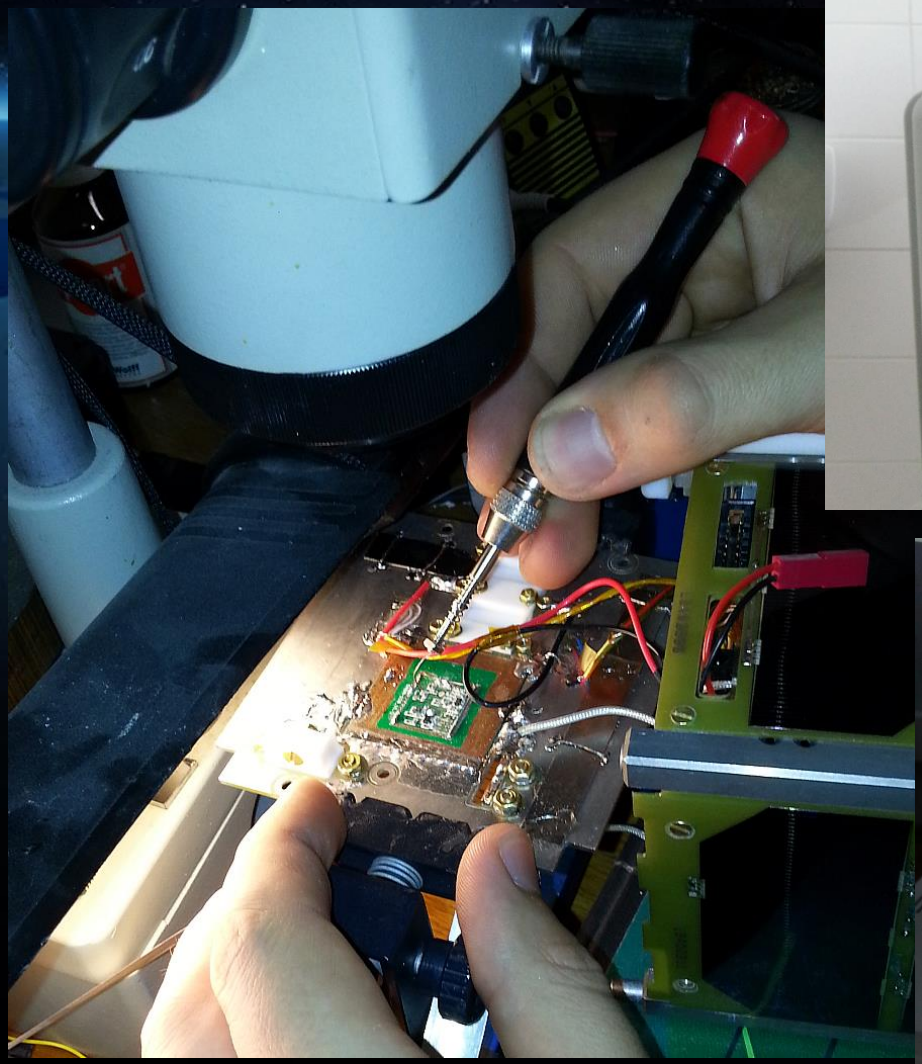
- Vacuum tests
- Temperature tests
- Vibrations tests

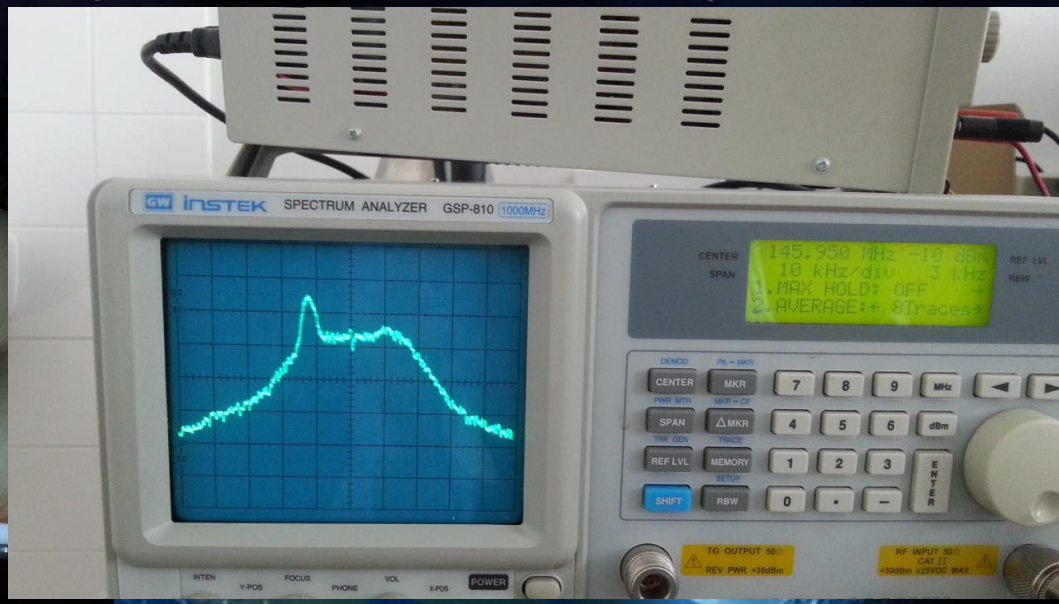


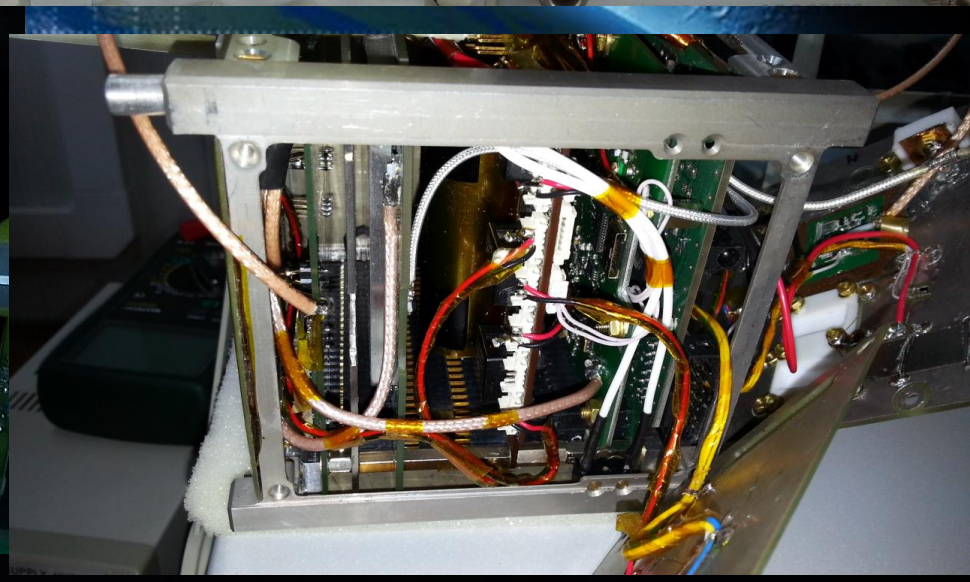


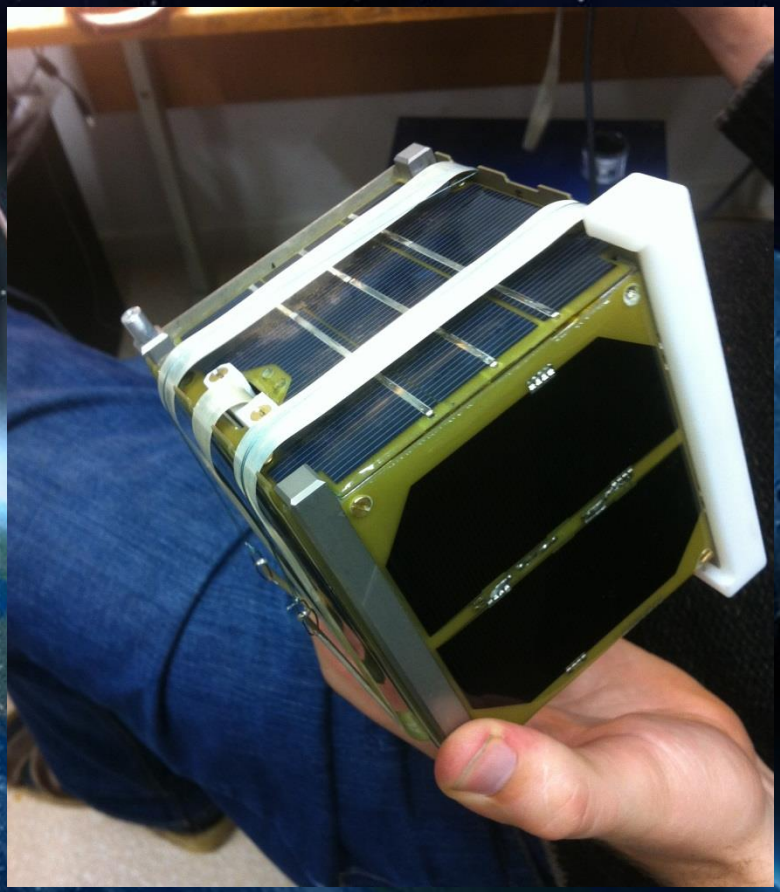
MISIJĄ VYKDO:

# Work...




GW INSTEK SPECTRUM ANALYZER GSP-810 1000MHz
CENTER
SPAN
145.950 MHz -10 dBm
10 kHz/div 3 kHz
1.MAX HOLD: OFF
2.AVERAGE: 8Traces
REF LVL
RBW
CENTER
MKR
SPAN
ΔMKR
REF LVL
MEMORY
SHIFT
RBW
ENTER
INTEN
Y-POS
FOCUS
PHONE
VOL
X-POS
POWER





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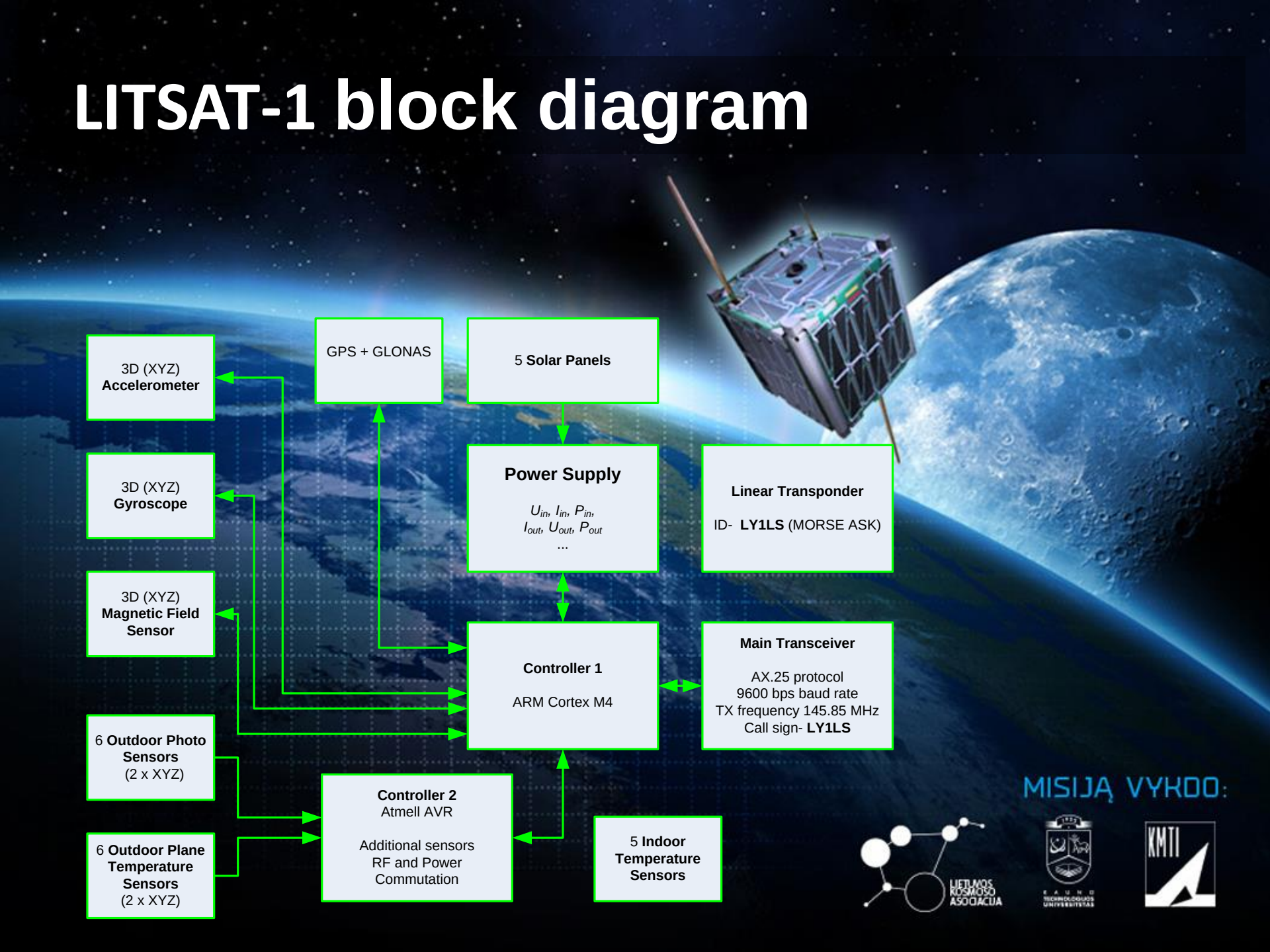
# LITSAT-1 block diagram



# Ground stations

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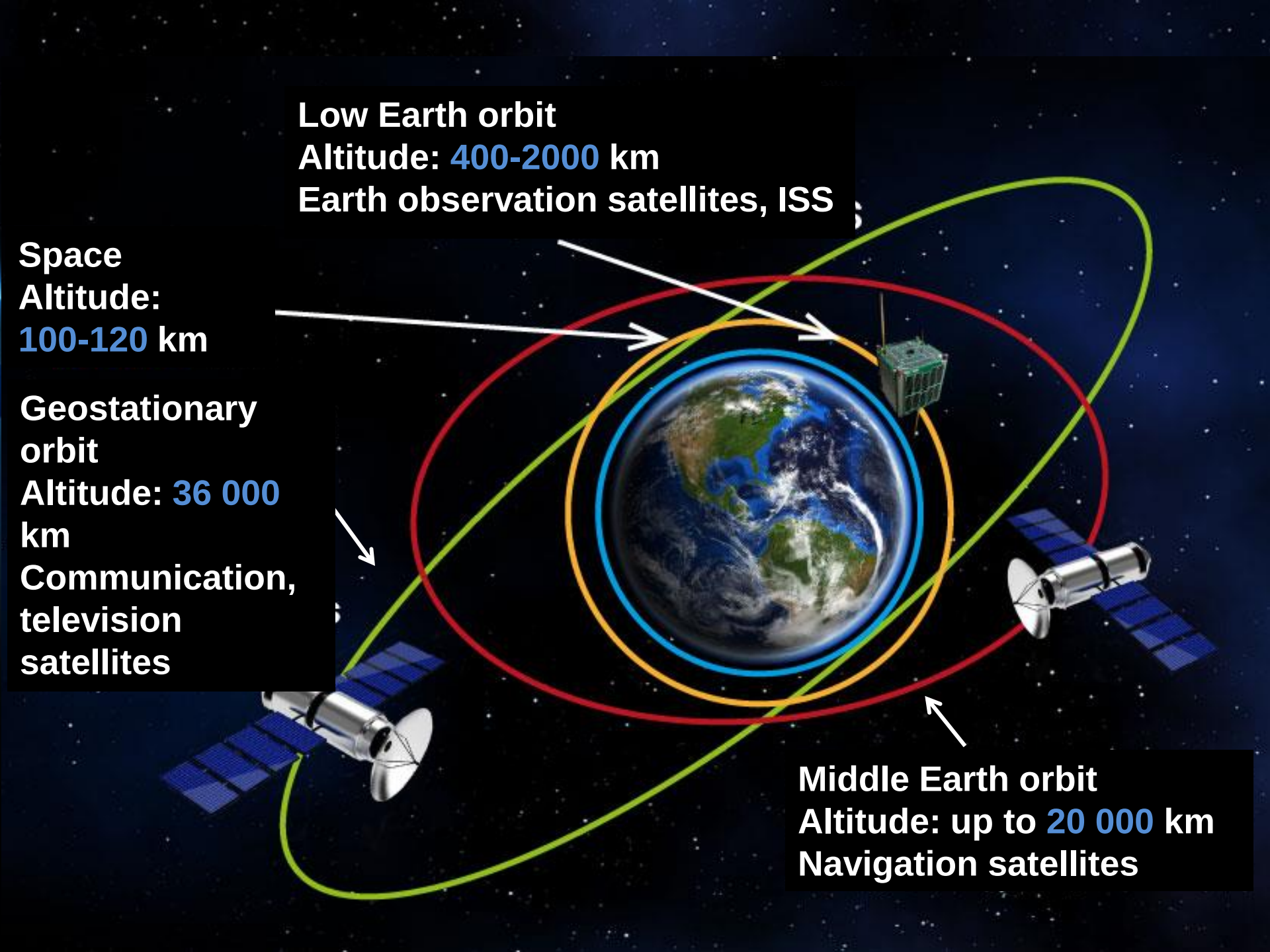
# LITSAT-1 transporation to ISS

LITSAT-1 was transportated 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

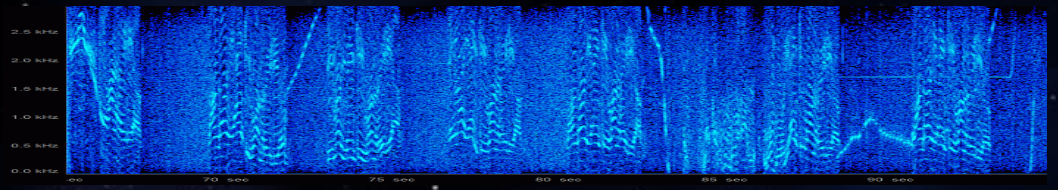
To test the main processor board

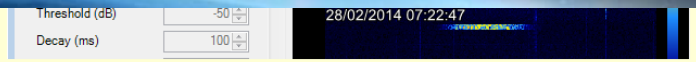
To measure the orientation of the satellite in the orbit

To test the solar panels

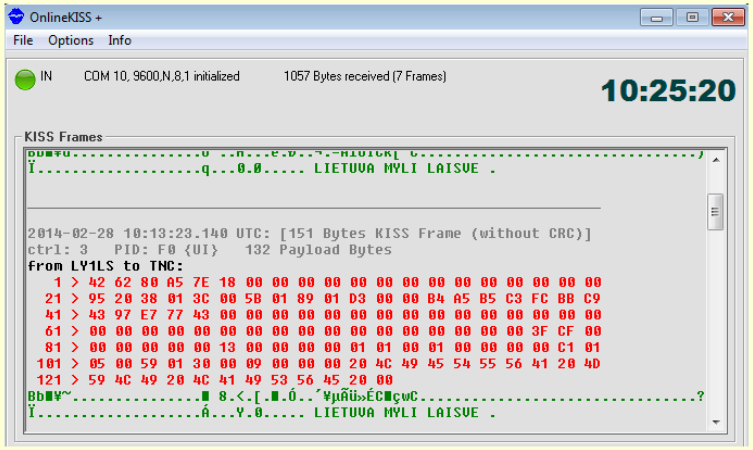
To test the construction

# Mike Rupprecht (DK3WN)






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




```
20                                                              RC) ]
                                                                42 62
                                                                66 20
                                                                44 CD
                                                                00 00
                                                                06 00
 1                                                              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 .À
```

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# 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

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# LITSAT-1 flight

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

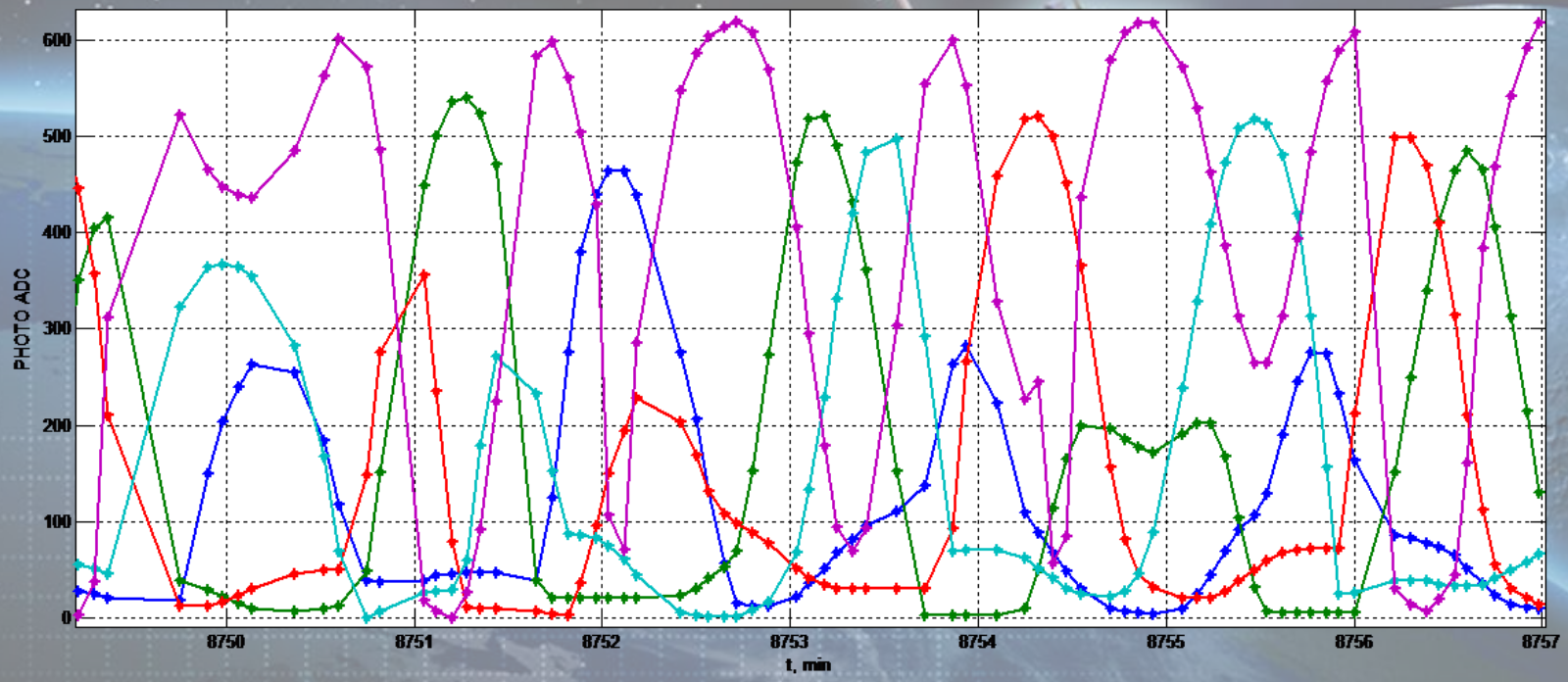
2014-02-28 d. 13:45 (UTC) (19496 s = 5:25 after the start) - successful reception and decoding of the LITSAT-1 telemetry data packets in a KTU control station.

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

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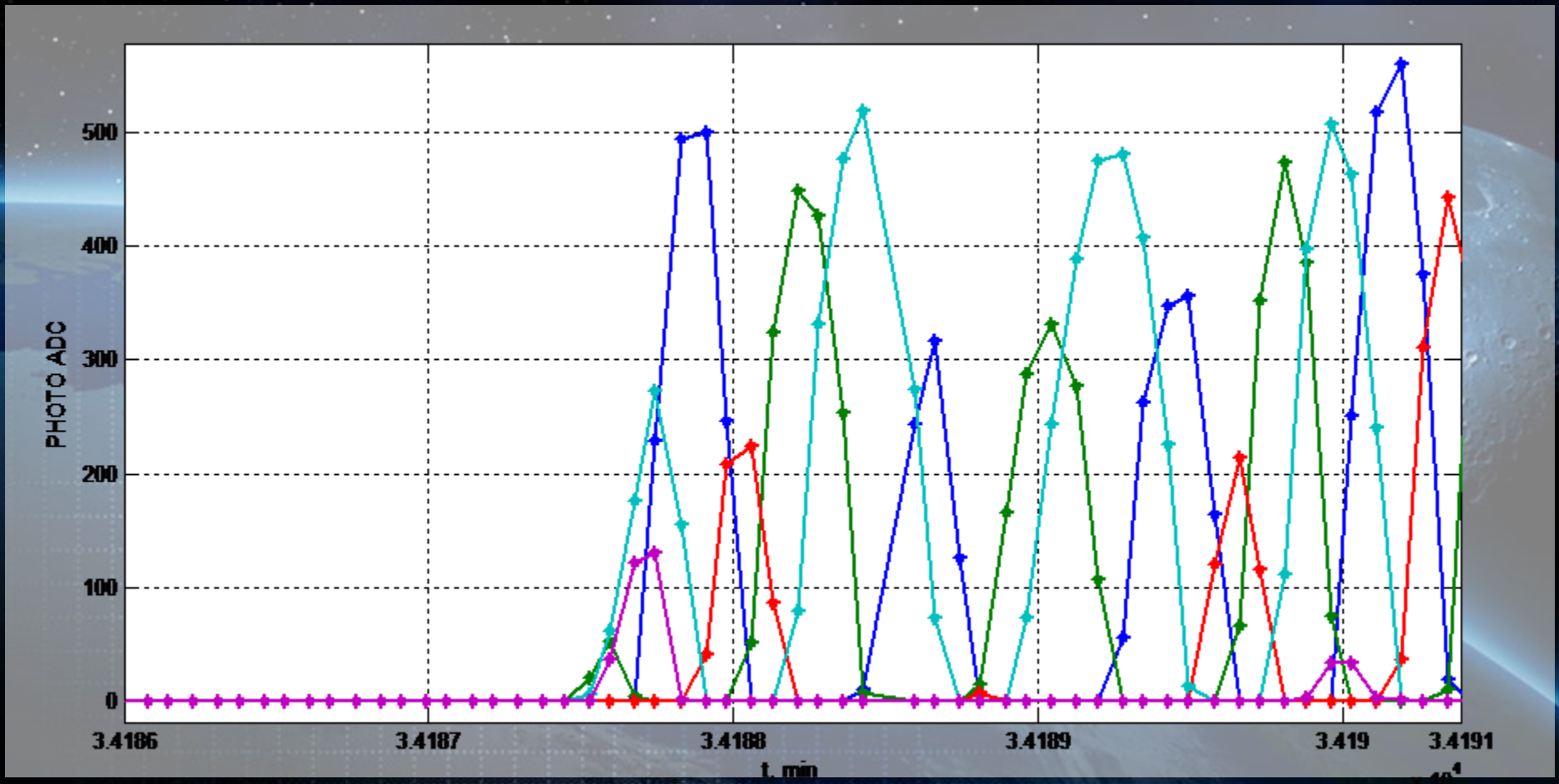
# LITSAT-1 flight

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# LITSAT-1 flight

**GPS:**


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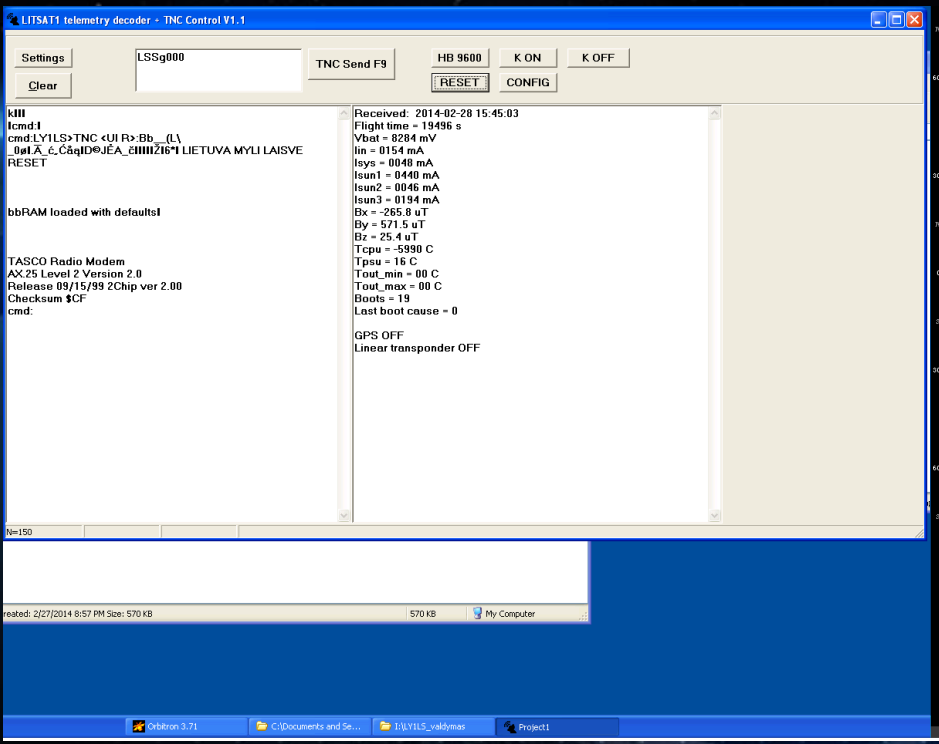
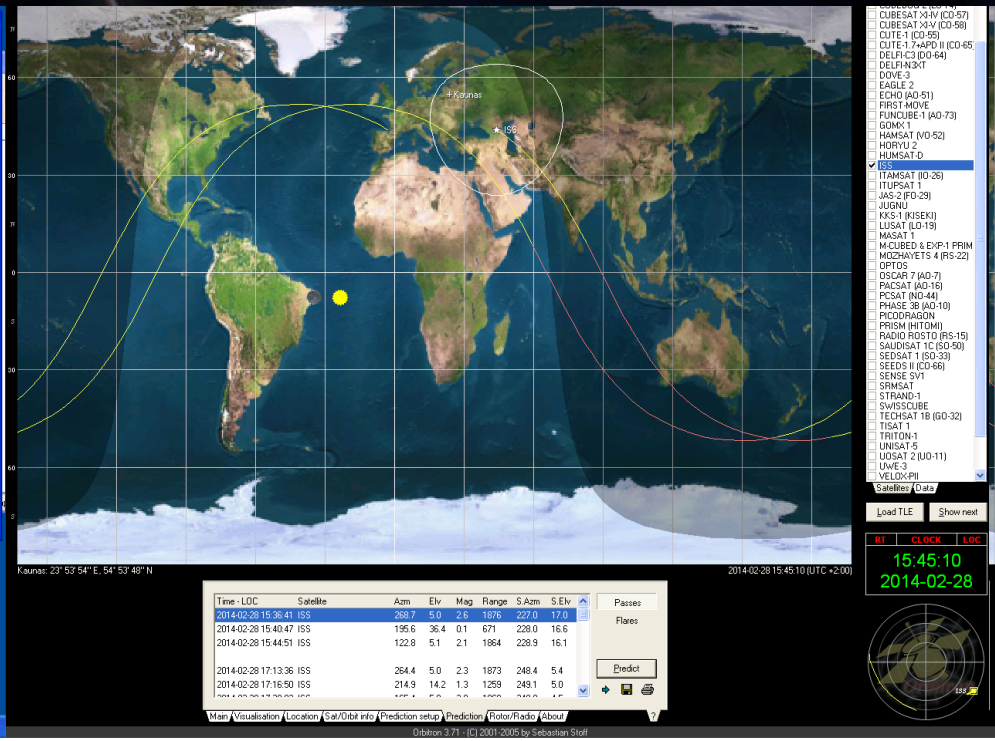
# LITSAT-1 flight

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Antares

http://www.litsat1.eu/


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