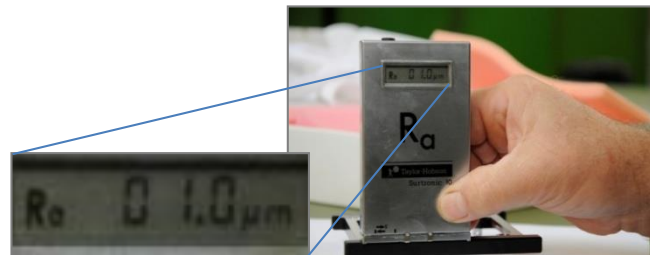
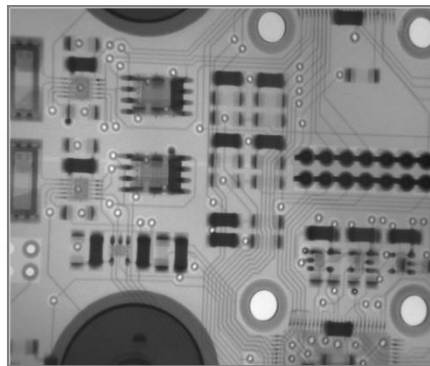
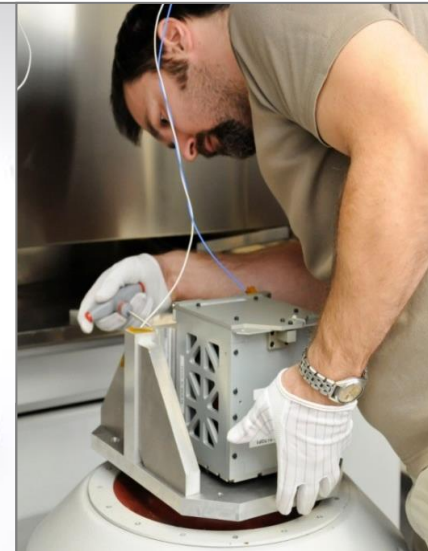


Levente Dudás
COM & GND

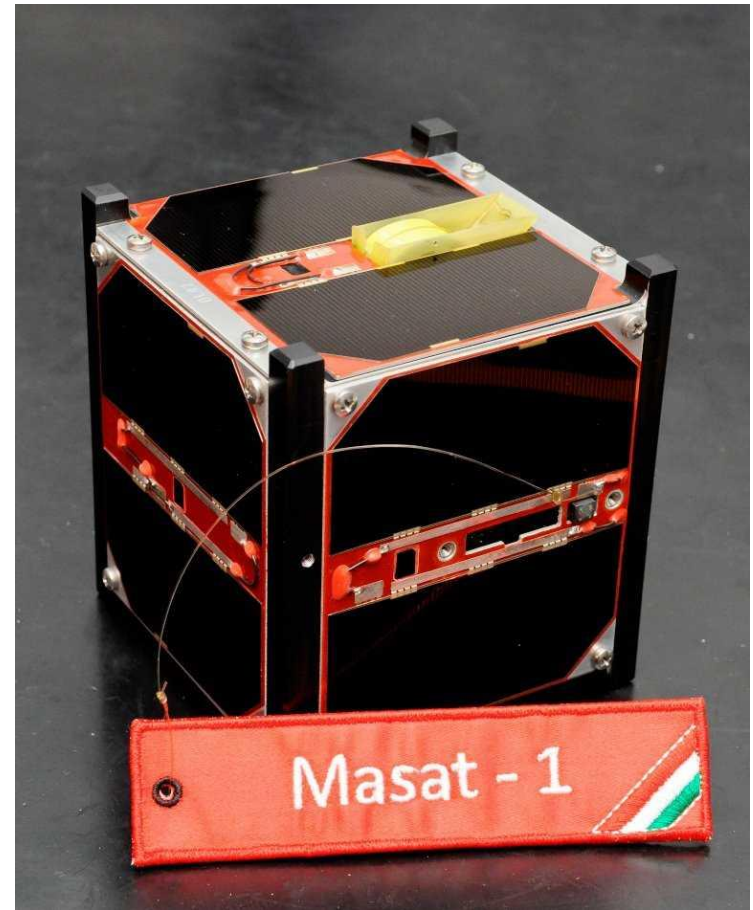
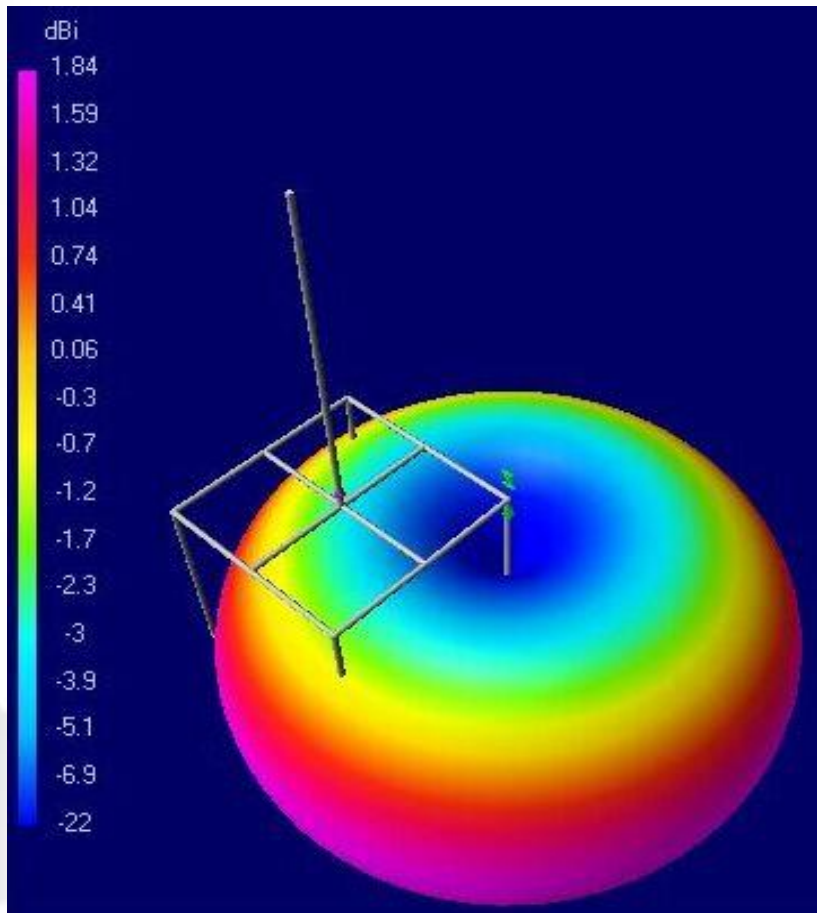
dudas@mht.bme.hu
ha7wen@ha7wen.hu

MAsat -1
<http://cubesat.bme.hu>

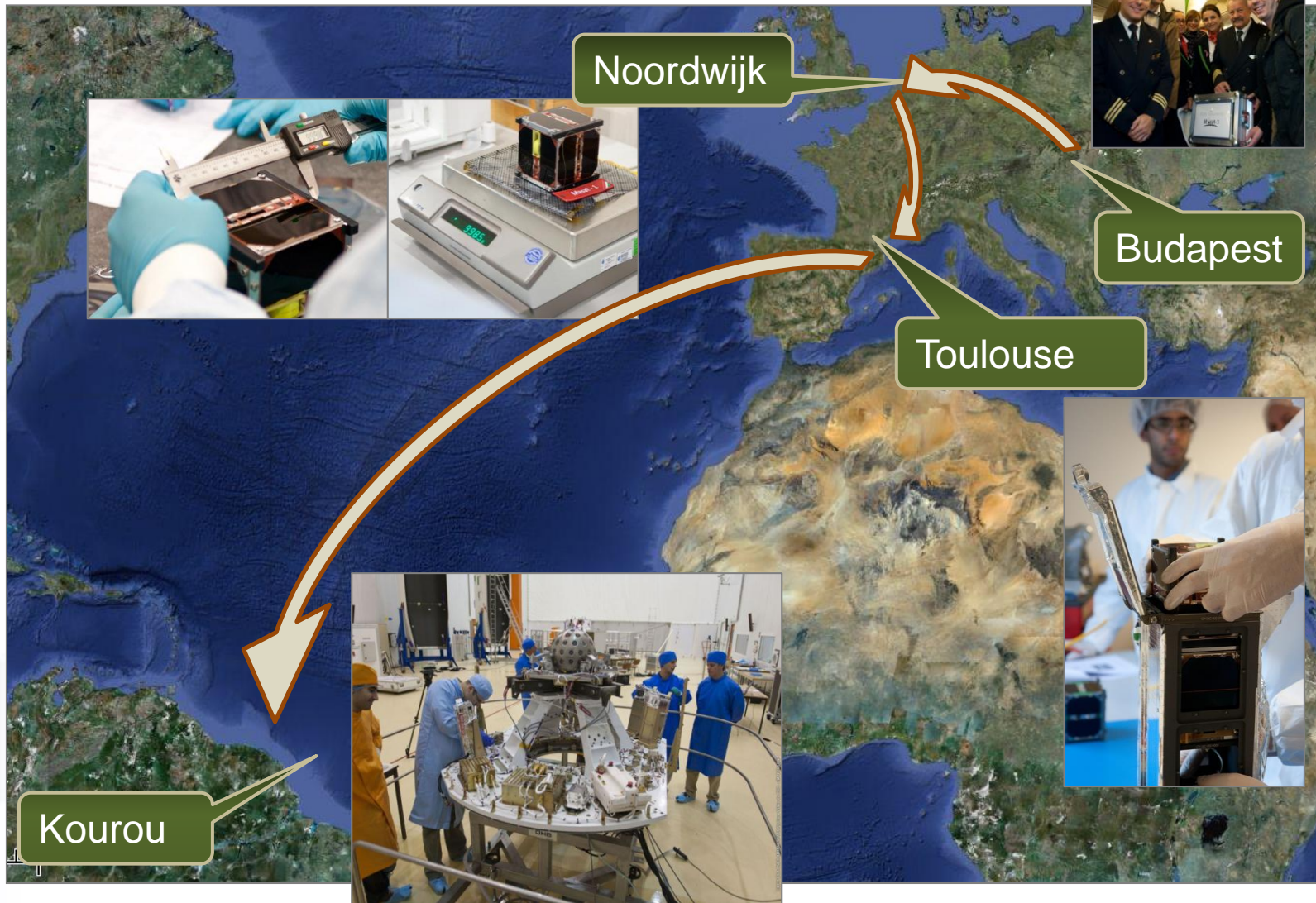
Masat-1 MO-72



On-board Antenna



Acceptance Tests and Integration



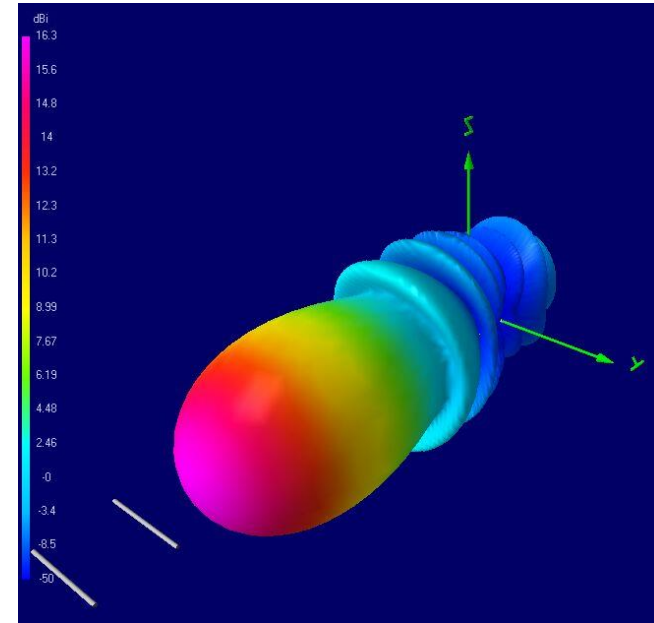
Vega Maiden Flight: 13.02.2012



The Big Jump...



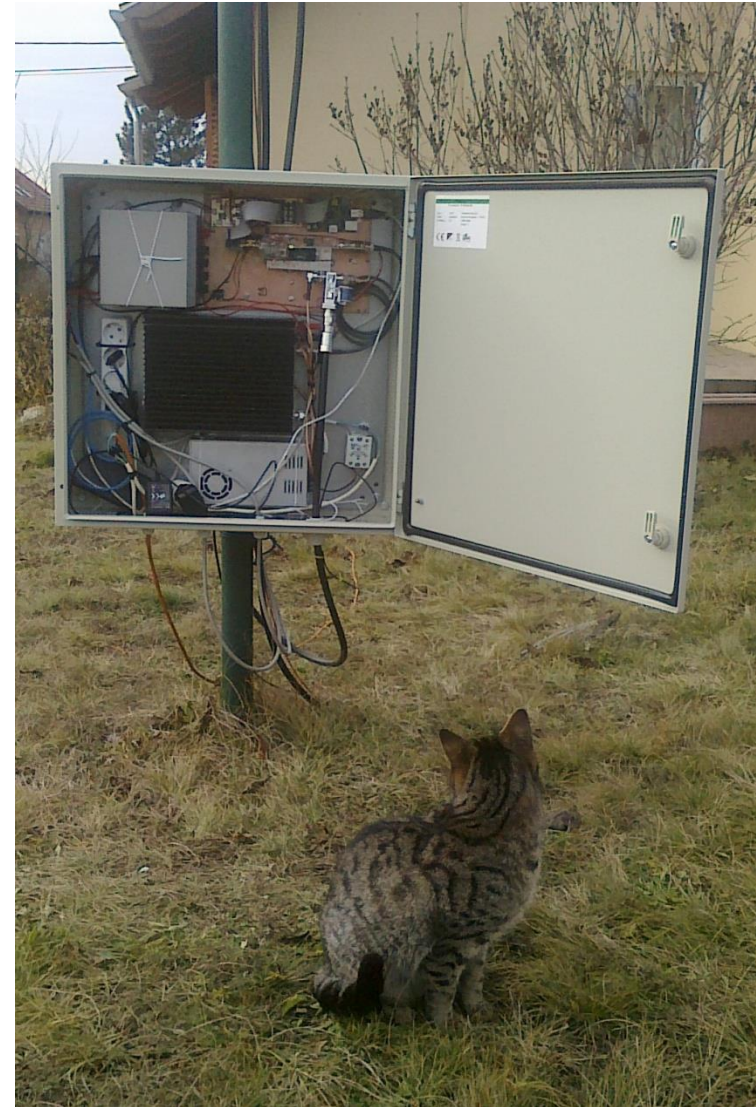
Primary Ground Station - BUTE



Aperture Antenna on 70 cm, 23 cm, 12 cm



Secondary Ground Station - Érd



Worldwide coverage?



- **1061** days in operation!
- >200 radioamateurs
- >600 MB downloaded data
- Automated and remote controlled ground stations!

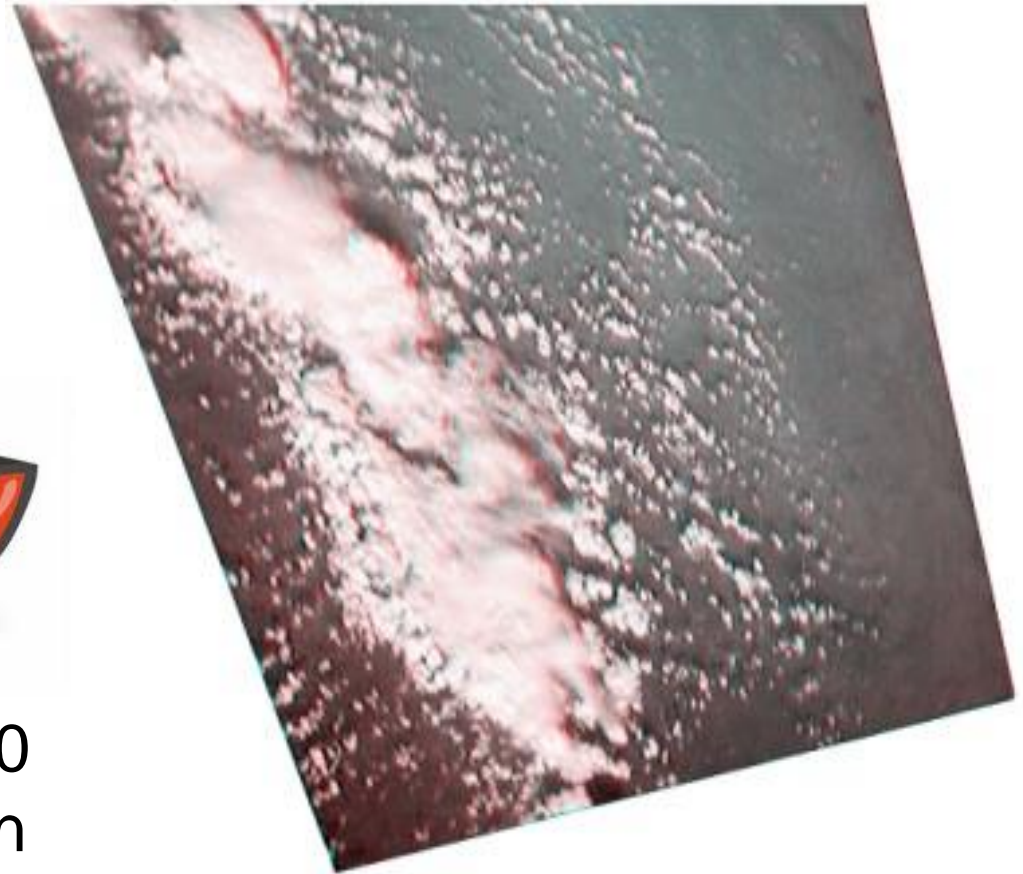
3D Image from 300 km

Data rates:

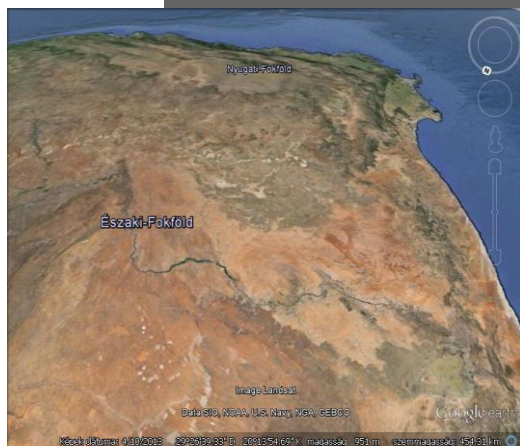
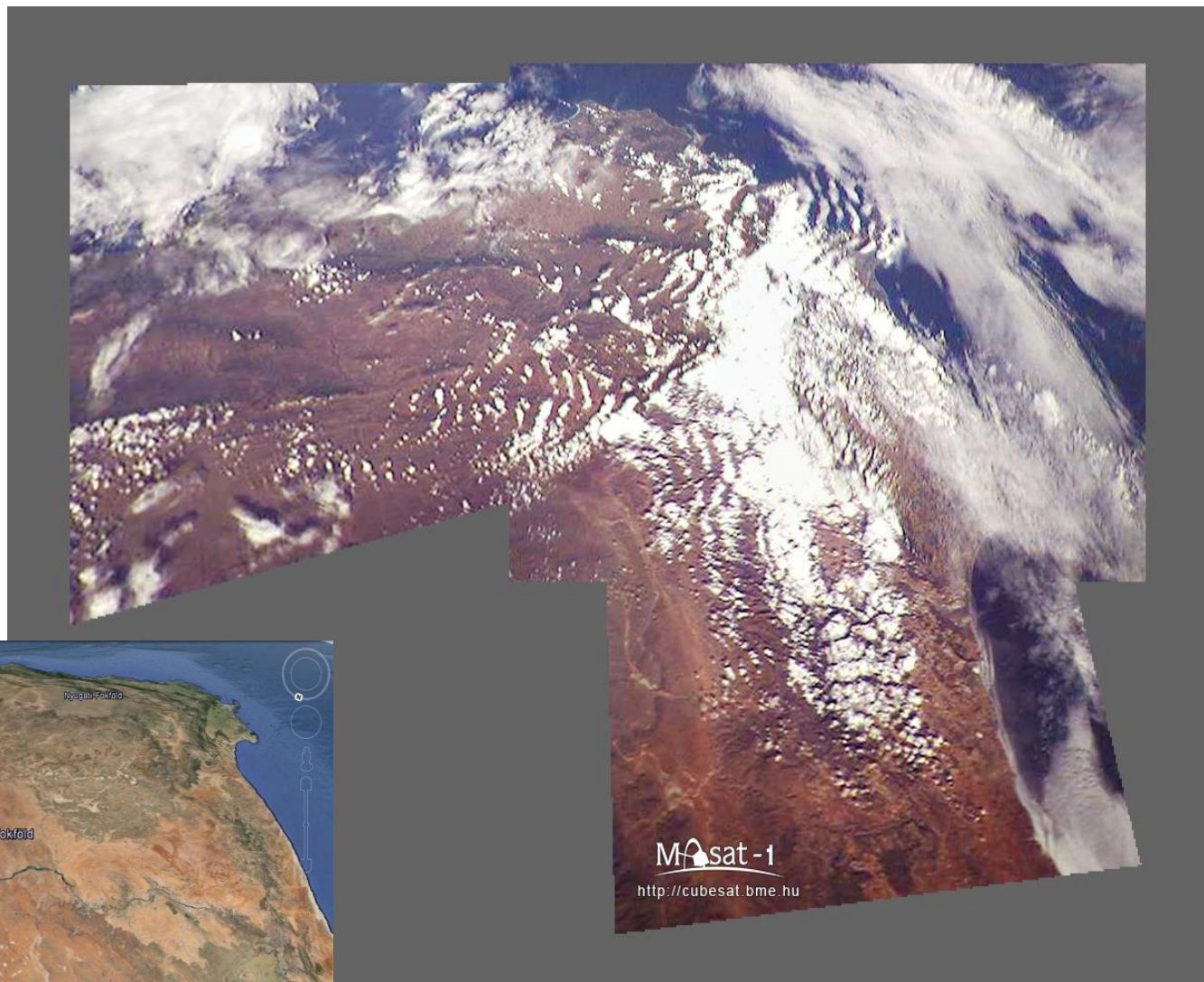
- 625 bit/s
- 1250 bit/s
- 5000 bit/s



640 x 480
resolution



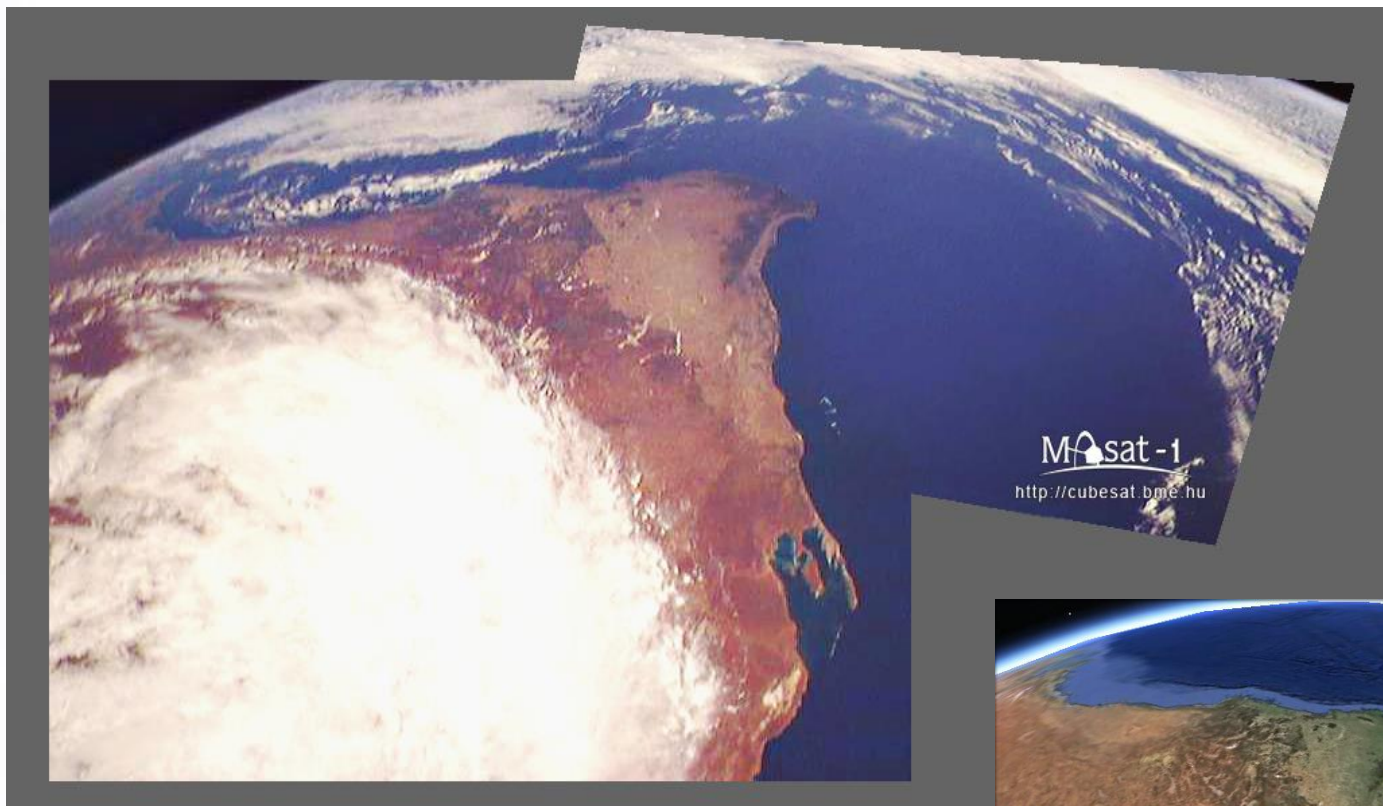
Mosaic – South Africa



Mosaic – South Australia



Mosaic – Western Australia



The Last Messages from Masat-1

- 437.345 MHz
- 145.980 MHz

APID	Type	SubType	Received on
On-Board Time	Time management service	Time Report	2014-11-14 08:16:39 CET
On-Board Time	Time management service	Time Report	2014-11-14 08:16:39 CET
Beacon Message Publishing System	Housekeeping and diagnostic data reporting service	Housekeeping Parameter #1 Report	2014-11-14 08:16:39 CET
Beacon Message Publishing System	Housekeeping and diagnostic data reporting service	Housekeeping Parameter #1 Report	2014-11-14 08:16:39 CET
Beacon Message Publishing System	Telecommand verification service	Telecommand Execution Completed Report - S...	2014-11-14 08:16:39 CET
Beacon Message Publishing System	Telecommand verification service	Telecommand Execution Completed Report - S...	2014-11-14 08:16:39 CET
Beacon Message Publishing System	Telecommand verification service	Telecommand Acceptance Report - Success	2014-11-14 08:16:39 CET
Beacon Message Publishing System	Telecommand verification service	Telecommand Acceptance Report - Success	2014-11-14 08:16:39 CET
Beacon Message Publishing System	Telecommand verification service	Telecommand Execution Completed Report - S...	2014-11-14 08:16:39 CET
Beacon Message Publishing System	Telecommand verification service	Telecommand Execution Completed Report - S...	2014-11-14 08:16:39 CET
Beacon Message Publishing System	Telecommand verification service	Telecommand Acceptance Report - Success	2014-11-14 08:16:39 CET
Beacon Message Publishing System	Telecommand verification service	Telecommand Acceptance Report - Success	2014-11-14 08:16:39 CET
Beacon Message Publishing System	Telecommand verification service	Telecommand Execution Completed Report - S...	2014-11-14 08:16:39 CET
Beacon Message Publishing System	Telecommand verification service	Telecommand Execution Completed Report - S...	2014-11-14 08:16:39 CET
Beacon Message Publishing System	Telecommand verification service	Telecommand Acceptance Report - Success	2014-11-14 08:16:39 CET
Beacon Message Publishing System	Telecommand verification service	Telecommand Acceptance Report - Success	2014-11-14 08:16:39 CET

BEACON - Message

Beacon: Goodbye World!

Value

Masat-1 Greets Philae!

ITU
IARU, NMHH

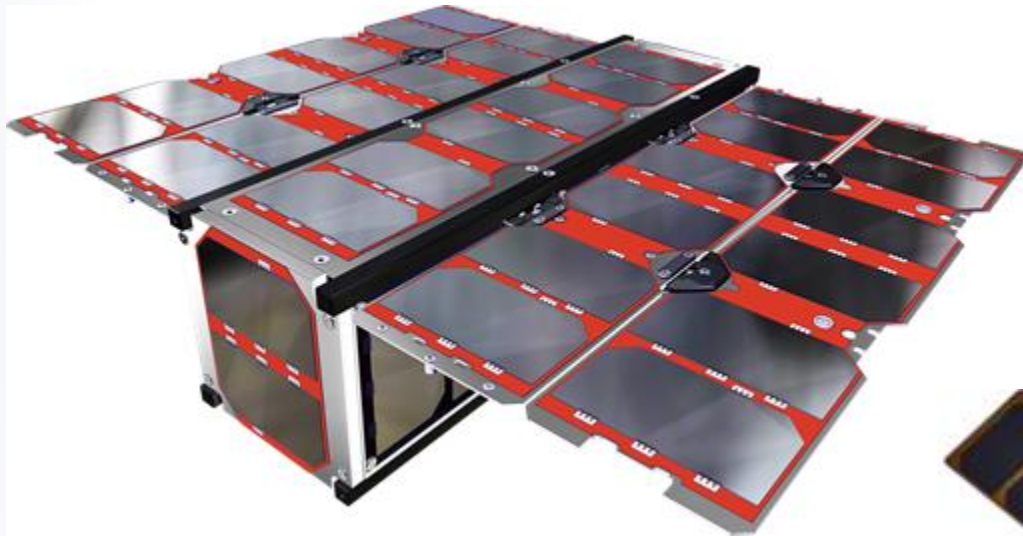
BEACON - Message	
Beacon:	Goodbye World!

OBC - General Information	
OBC Timer Cntr.:	26495444
Boot Attempts Cntr.:	7
Current Op. Mode:	LP Normal
Next Op. Mode:	HP Normal
Op. Mode Locked:	Open
Program Memory Chk.:	0x0D7E
Debug Mode:	Normal

OBC - Power States	
Active OBC:	OBC-2
Active COM:	COM-1
ADCS Power State:	On
COM Power State:	On
HK Power State:	On
CAM Power State:	Off

Masat-2 – Commercial Way

www.c3s.hu

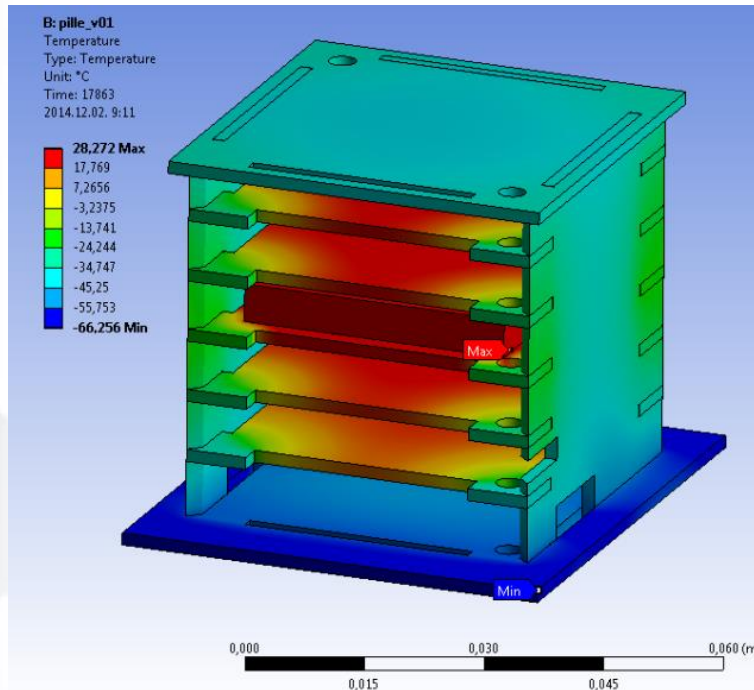
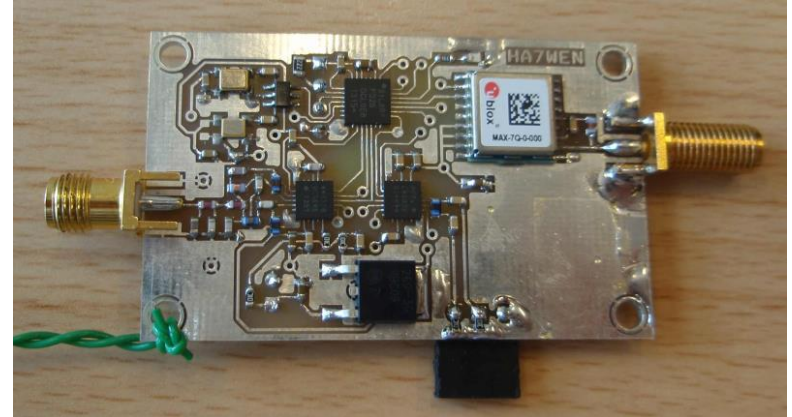


- 3U or 6U Structure
- Solar panels (body mounted and/or deployable)
- OBC (with mass memory)
- EPS (including battery pack)
- COM (UHF transceiver)
- COM (S-Band transmitter)
- Antennas (for UHF and S-band)

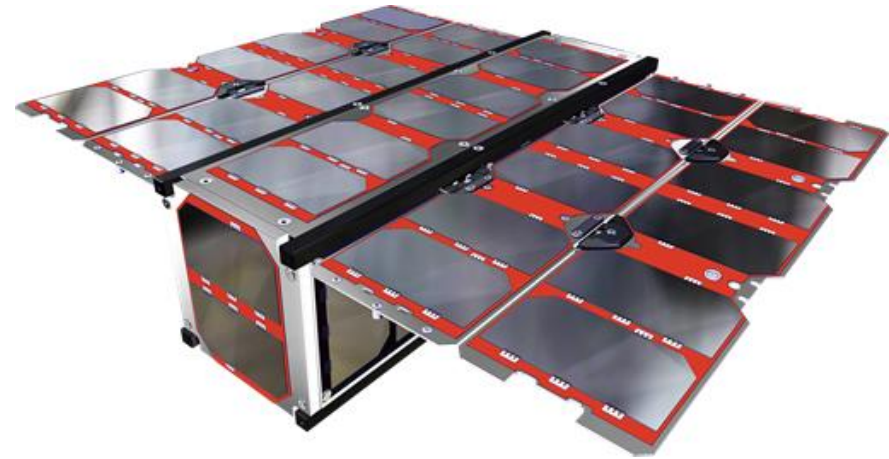
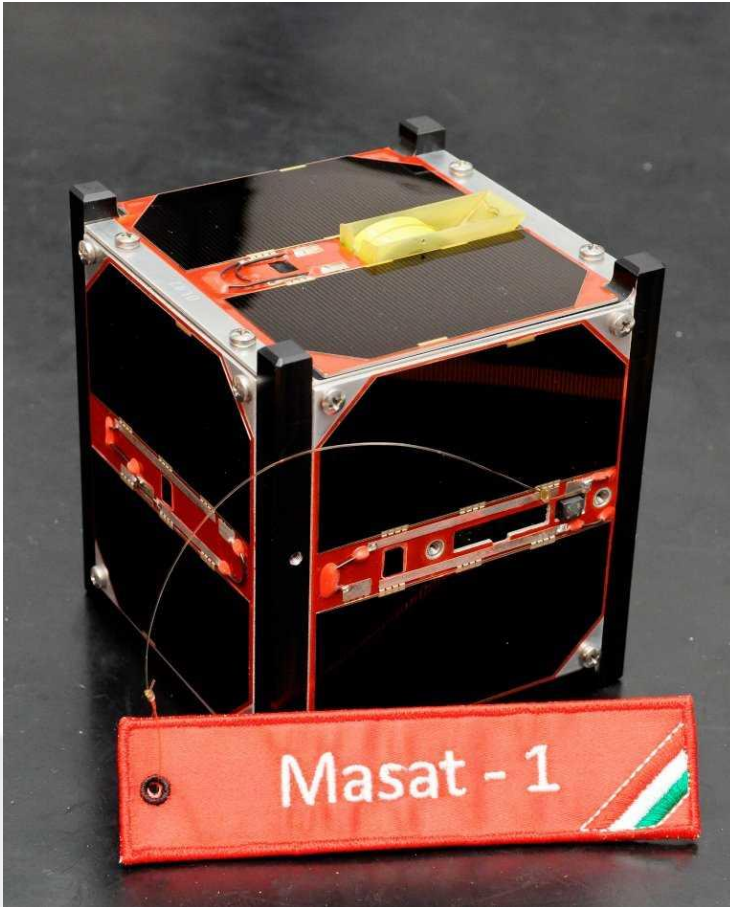


Smog-1 – Educational Way

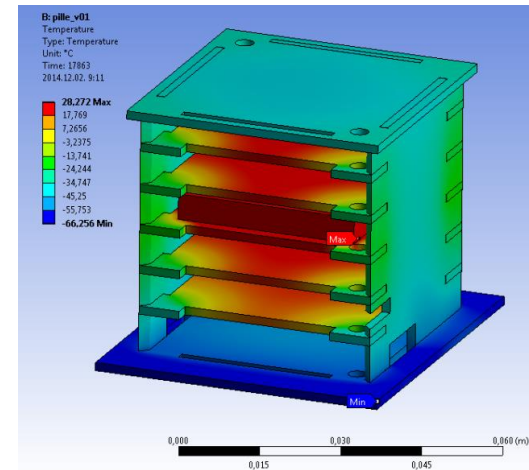
- 5 x 5 x 5 cm PocketQube
- Max. 175 g mass
- 300 mW average incoming DC power



- EPS
- OBC
- COM – UHF
(radioamateur band)
- Spectrum analyzer:
 - 430-860 MHz
DVB-T band
- www.gnd.bme.hu



Masat-2



Smog-1