

UAN sez. Astronautica



II AstroUAN_Meeting 2012

LO SPAZIO POSSIBILE

www.unioneastrofilinapoletani.it
www.uanspaceballoon.it

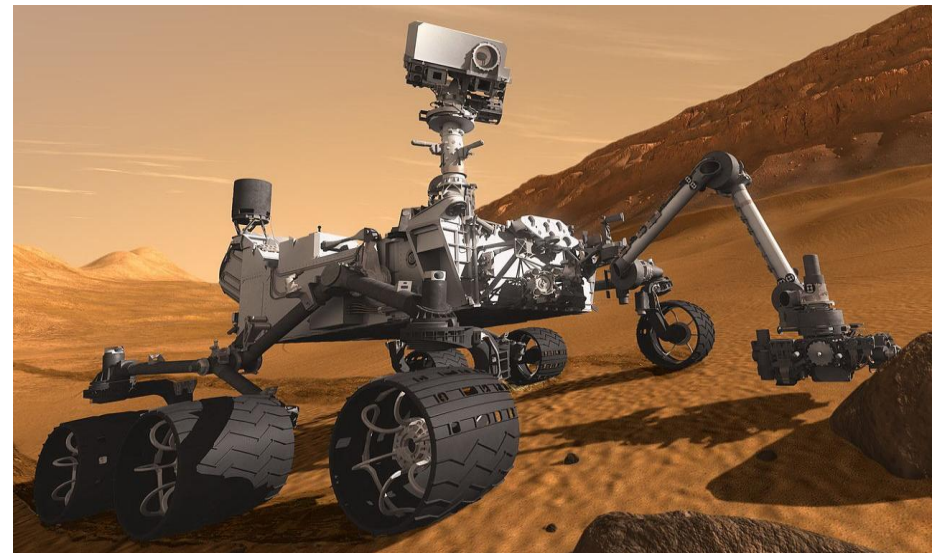




SPACE SHUTTLE

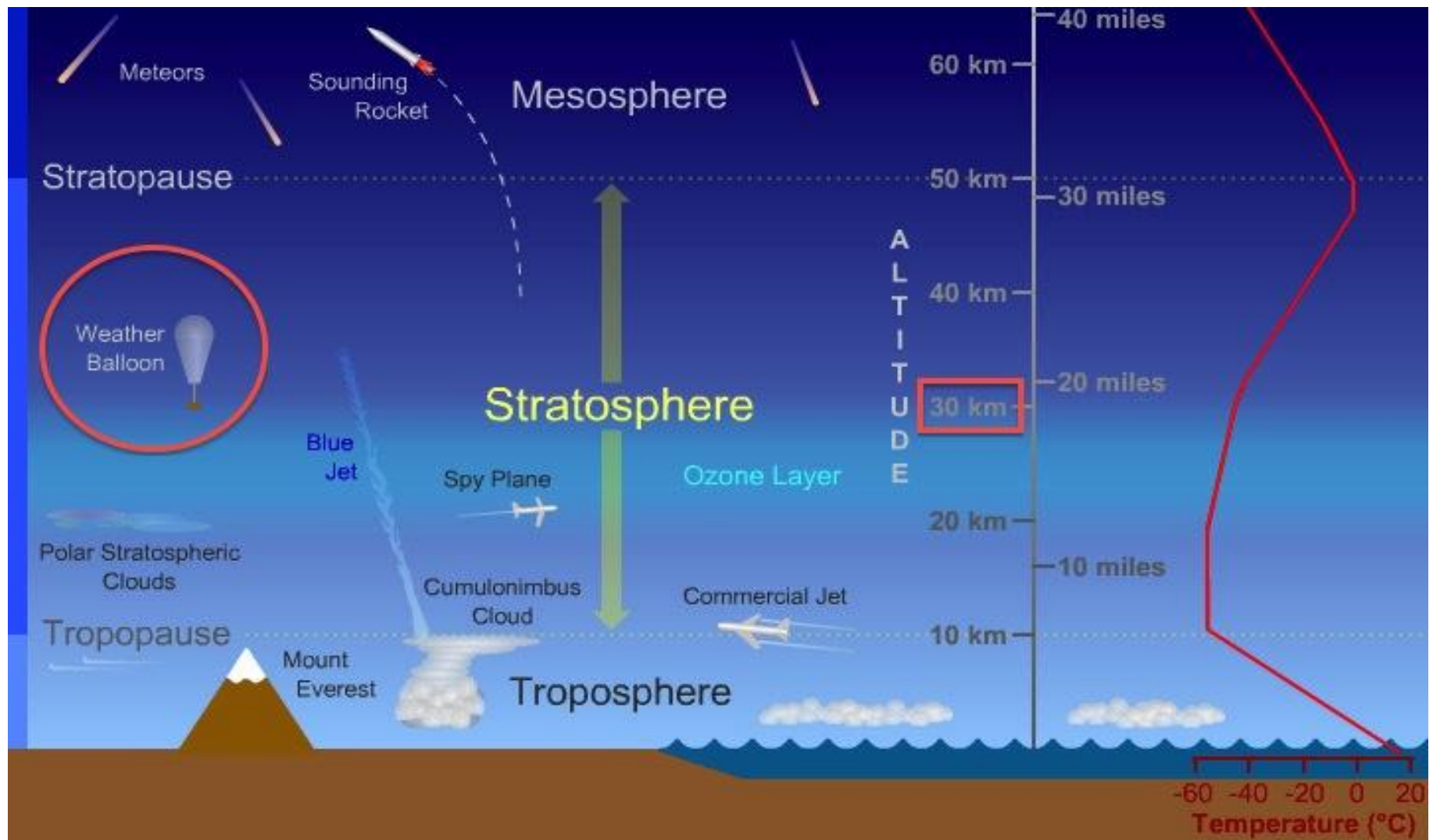


ISS – INTERNATIONAL SPACE STATION



MARS SCIENCE LABORATORY CURIOSITY

LA STRATOSFERA



LO SPAZIO POSSIBILE



LO SPAZIO POSSIBILE

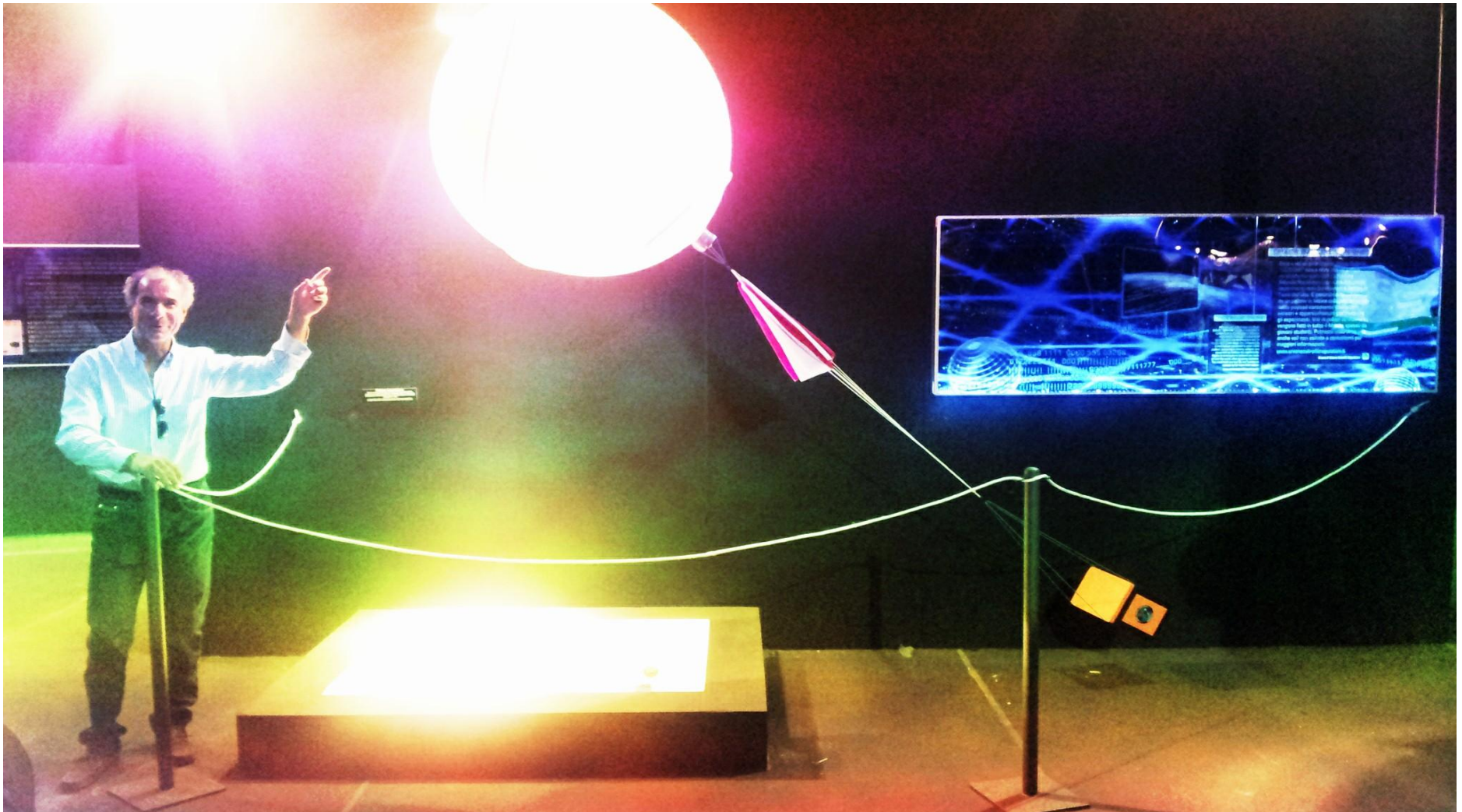


SPACE BALLOON – PALLONE STRATOSFERICO
UAN-BETA

UAN-BETA DELTACLUB (Castel Volturno)



SPACE BALLOON – FUTURO REMOTO (CITTA' DELLA SCIENZA)

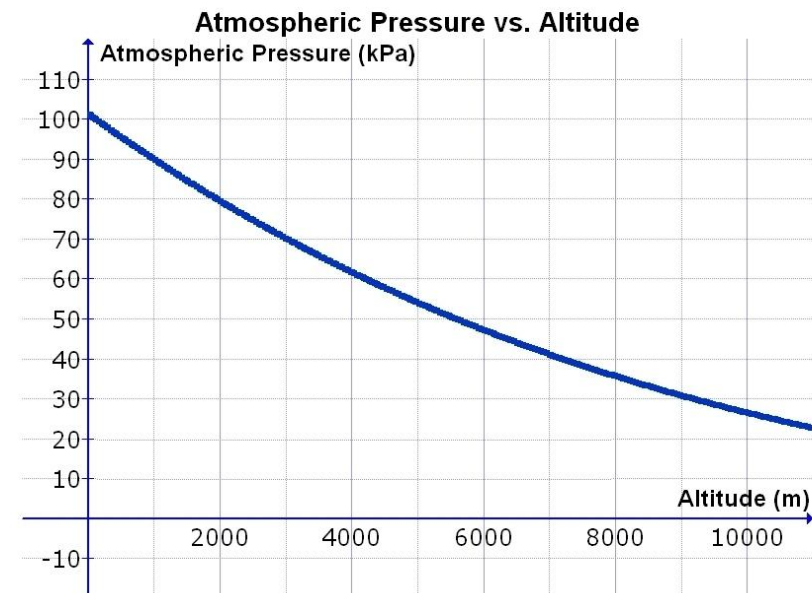




Pallone aerostatico

- Che cos' è ? - Componenti principali
- Perchè sale in alto ? - Fin dove sale ?
- Calcolo dell' elio necessario
- Calcolo della spinta verticale
- Calcolo della velocità di salita
- Determinazione del punto di caduta





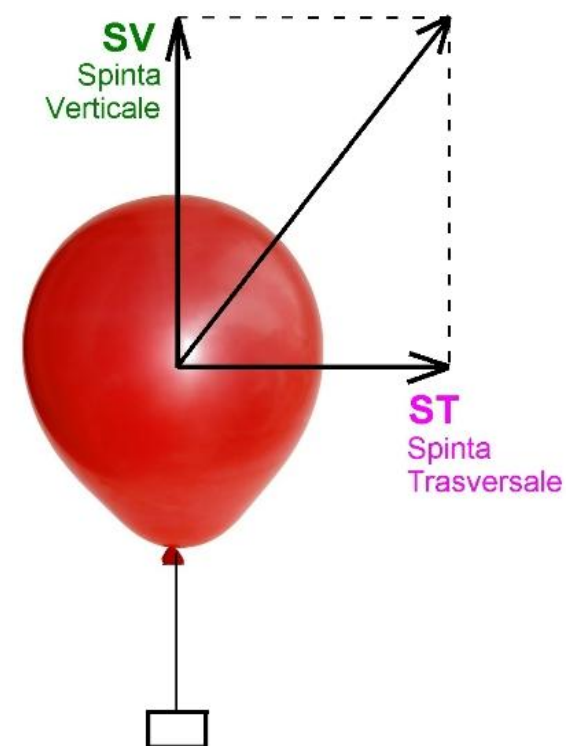


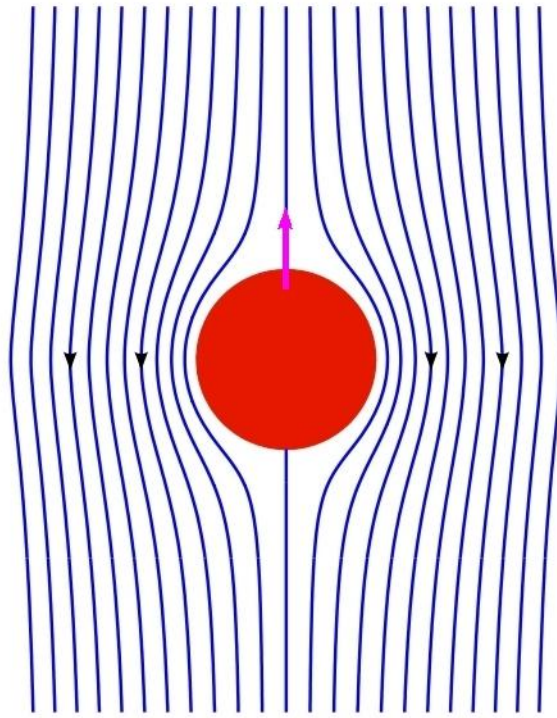
DATI DA INSERIRE		
	Unità di misura	Valori inseriti
Diametro pallone	cm.	150
Peso pallone + valvola	gr.	396
Payload	gr.	475

DATI CALCOLATI		
	Unità di misura	Dati ottenuti
Raggio pallone	cm.	75
Volume pallone	mc.	1,77
Elio necessario (in bombola a 200 atm.)	lit.	8,83
Gross lift = Spinta lorda	Kg.	1,81
Nozzle lift (=Spinta lorda – peso pallone)	Kg.	1,42
Free lift (= Nozzle lift – Payload)	Kg.	0,94
Velocità ascensionale	mt./sec.	4,30

DATO DA INSERIRE		
Velocità del vento	nodi	6

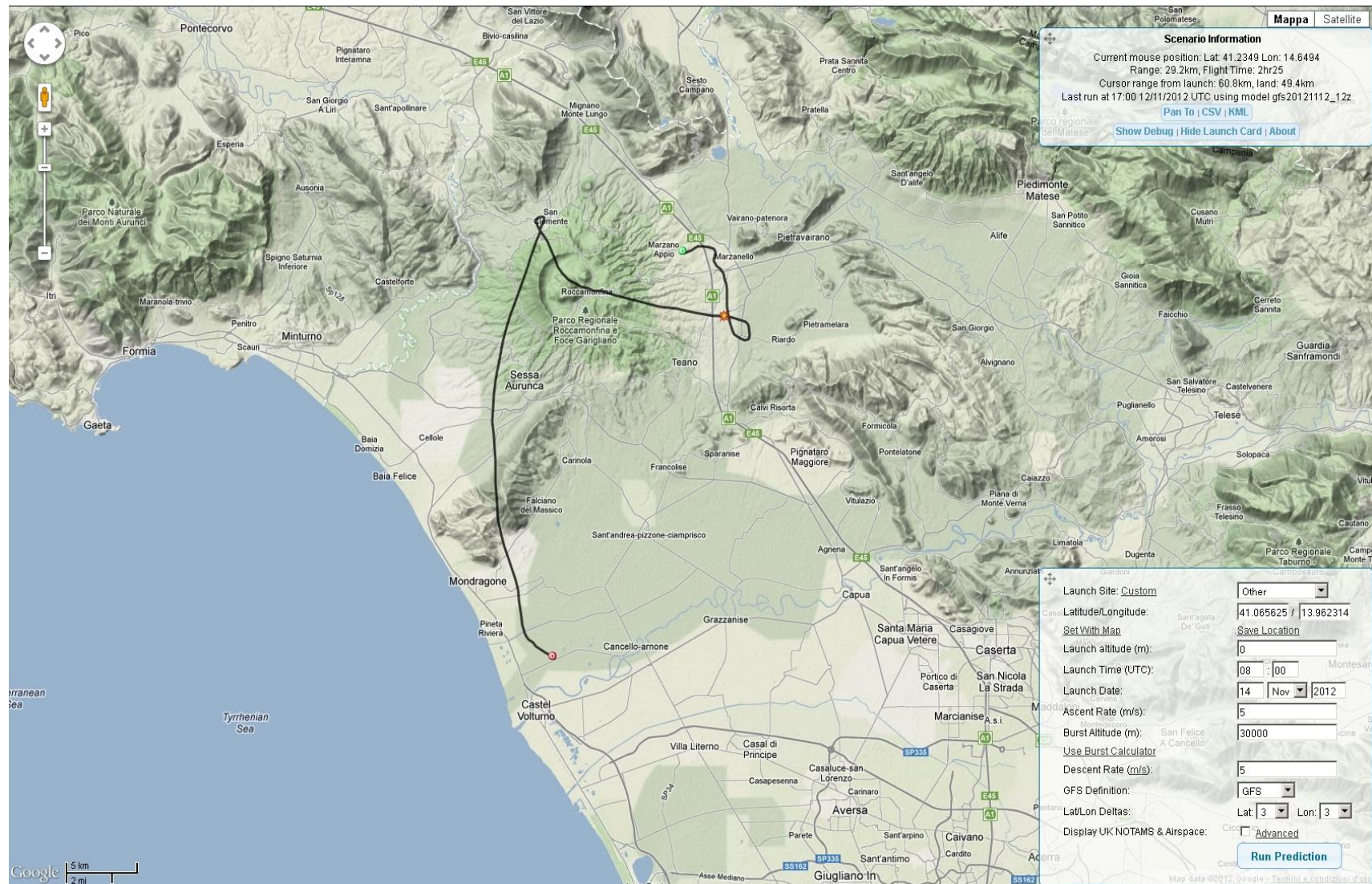
DATI CALCOLATI		
Velocità del vento	mt./sec.	3,09
Pressione dinamica del vento	Kg./mq	0,58
Superficie di riferimento (1/4 di una sfera)	mq.	1,77
ST = Spinta trasversale	Kg	0,33





$$F_D = 1/2 \rho v^2 C_d A$$

Shape		Drag Coefficient
Sphere	→ 	0.47
Halfsphere	→ 	0.42
Cone	→ 	0.50
Cube	→ 	1.05
Angled Cube	→ 	0.80
Long Cylinder	→ 	0.82
Short Cylinder	→ 	1.15
Streamlined Body	→ 	0.04
Streamlined Halfbody	→ 	0.09



- CONDURRE ESPERIMENTI
- EFFETTUARE MISURAZIONI
- REGISTRARE I RISULTATI





CONFIGURAZIONE CON SISTEMI INDIPENDENTI

LEONARDO PRO
489€



GARMIN OREGON 300
316€



GPS-GARMIN
250€



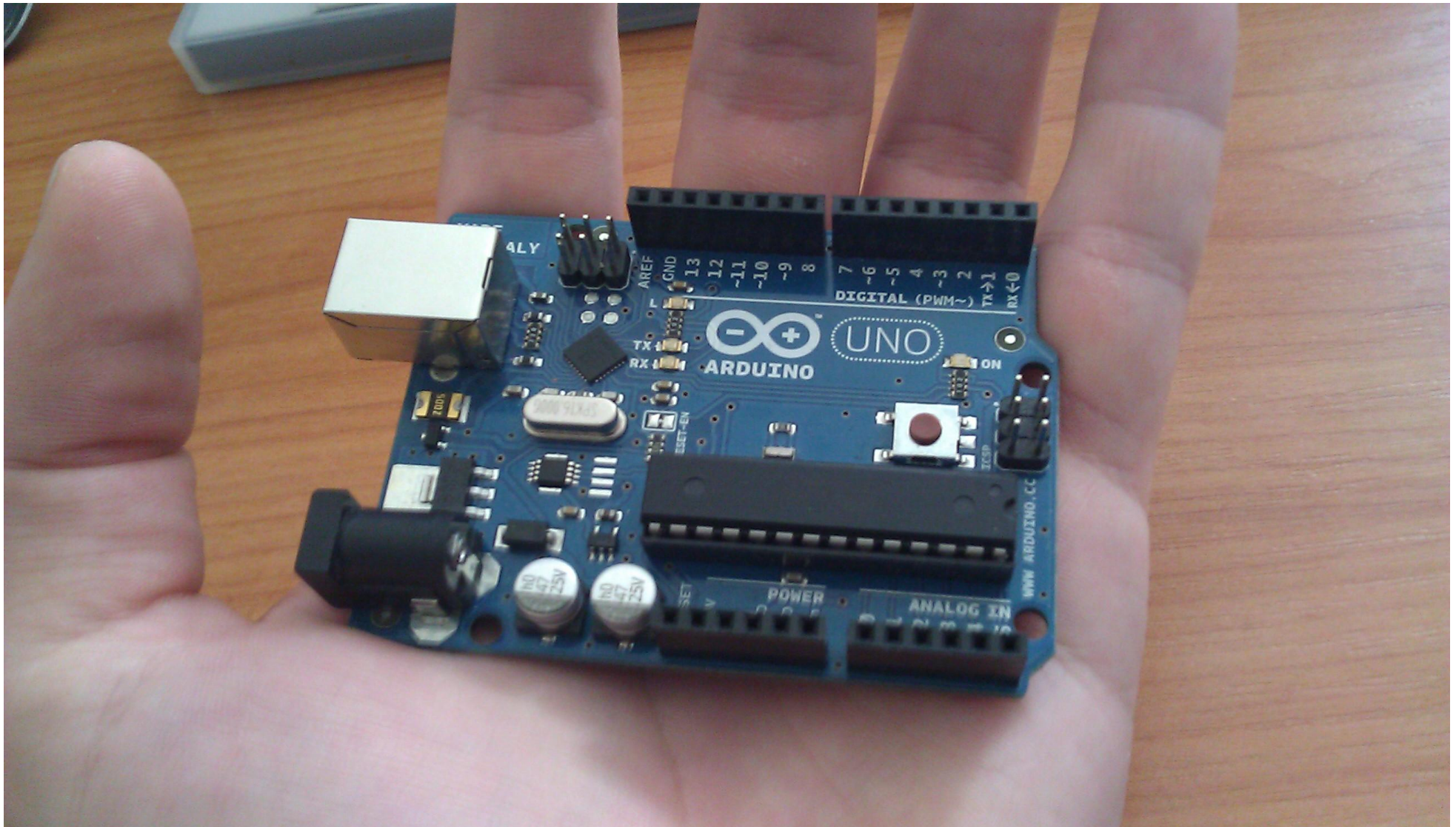
VERNIER
LABQUEST
300€



Best of Open Source



MINIPC
LINUTOP2 280€



SCHEDA DI CONTROLLO CON
FRAMEWORK OPENSOURCE PROGRAMMABILE

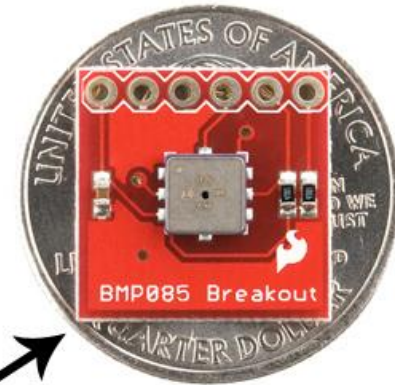


**GPS-GSM-GPRS
SIM908 75 €**

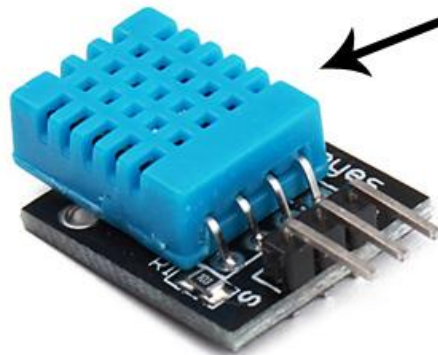


DATALOGGER

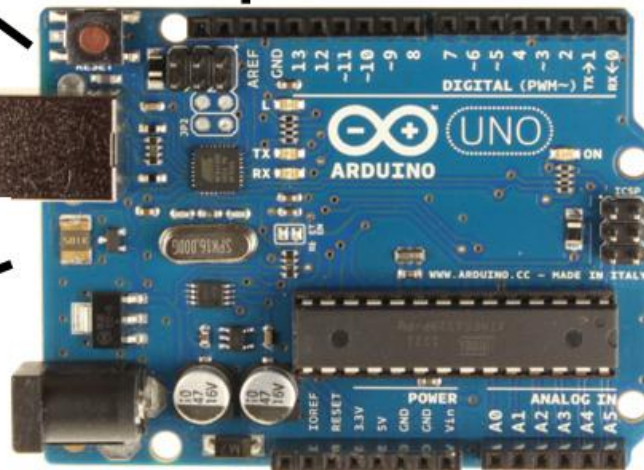
22 €



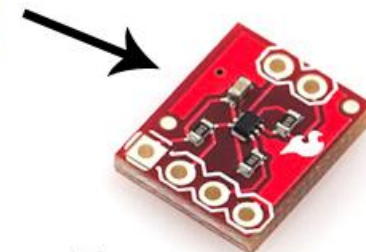
**BAROMETRO
ALTIMETRO
BMP085 18 €**



**UMIDITÀ
4 €**

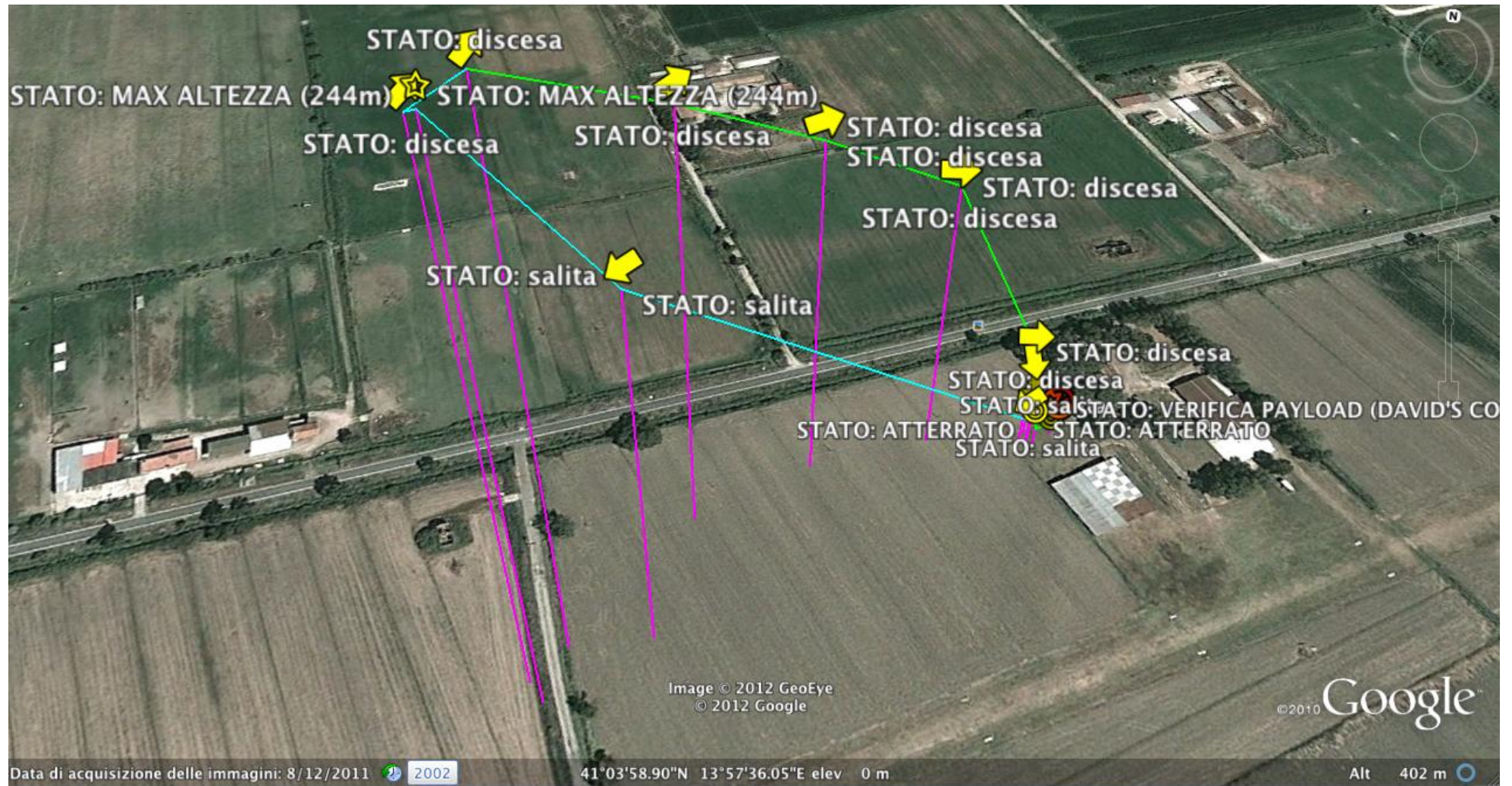


**SCHEDA PROGRAMMABILE
ARDUINO UNO
20 €**



**TERMOMETRO
TMP102
5 €**

Aeroclub DELTACLUB (Castel Volturno)

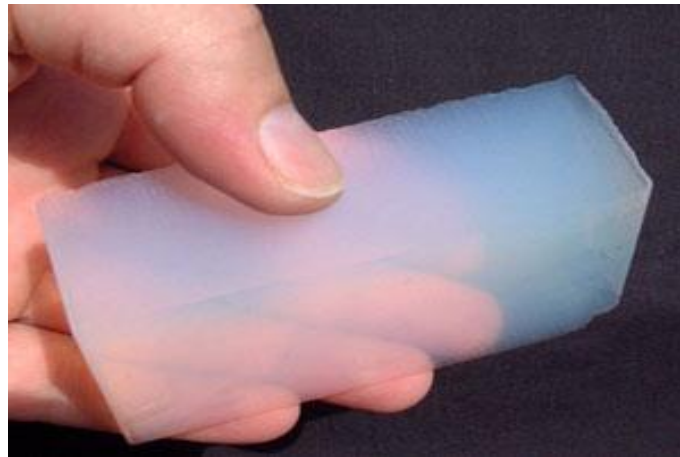
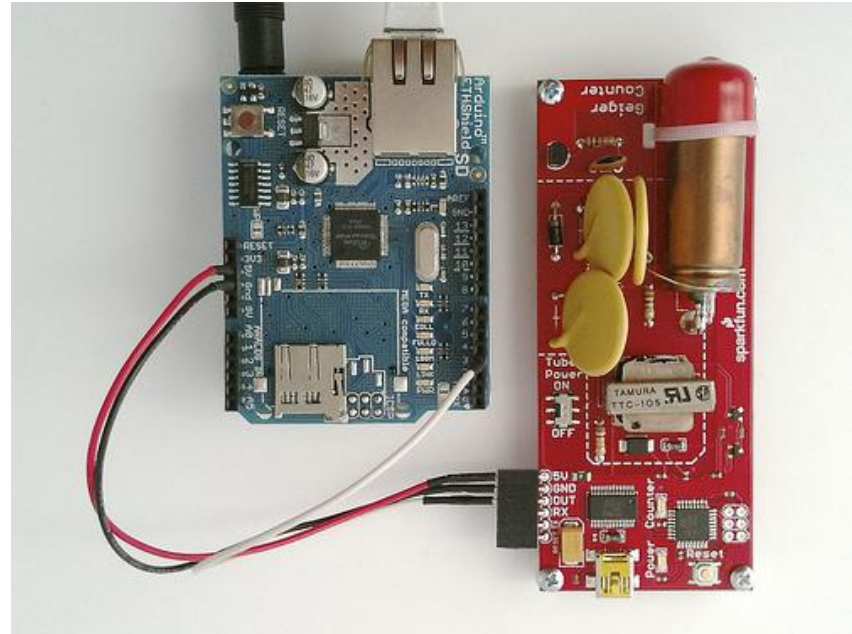


RAPPRESENTAZIONE GRAFICA DEI DATI GPS MEDIANTE GOOGLE EARTH



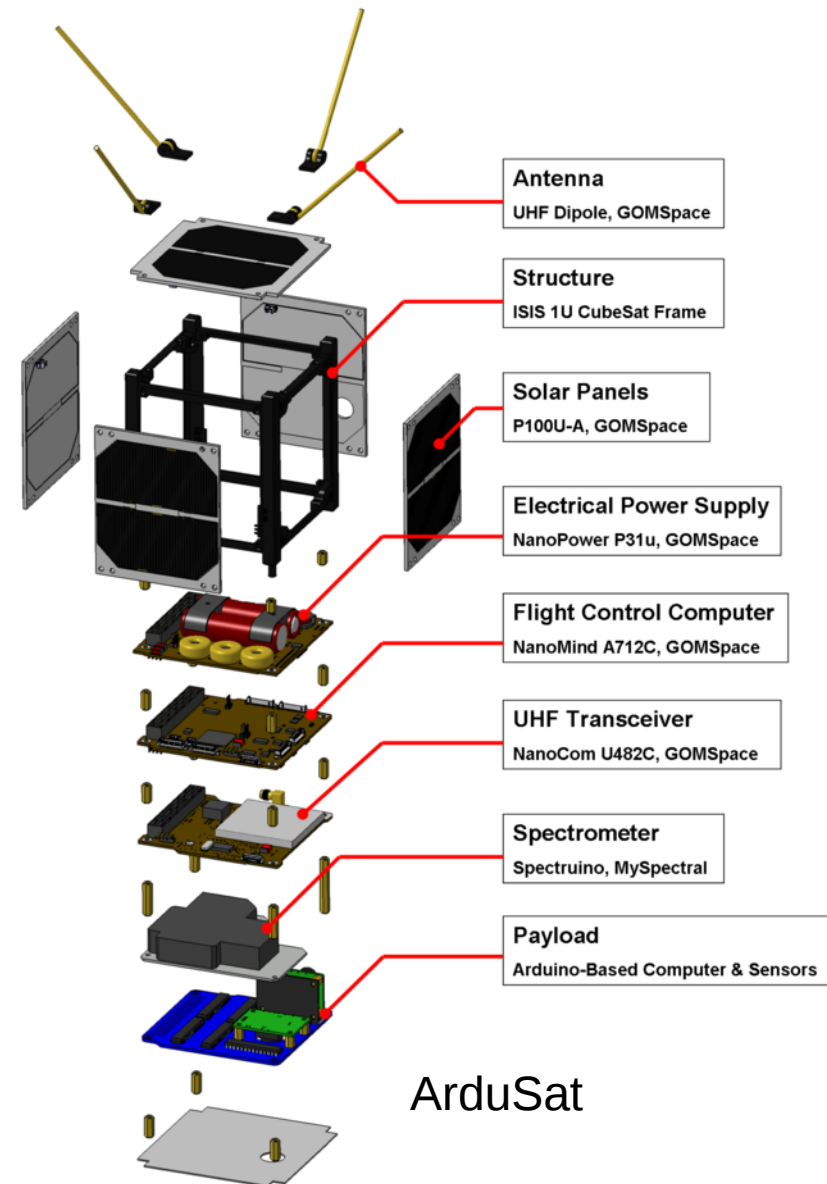
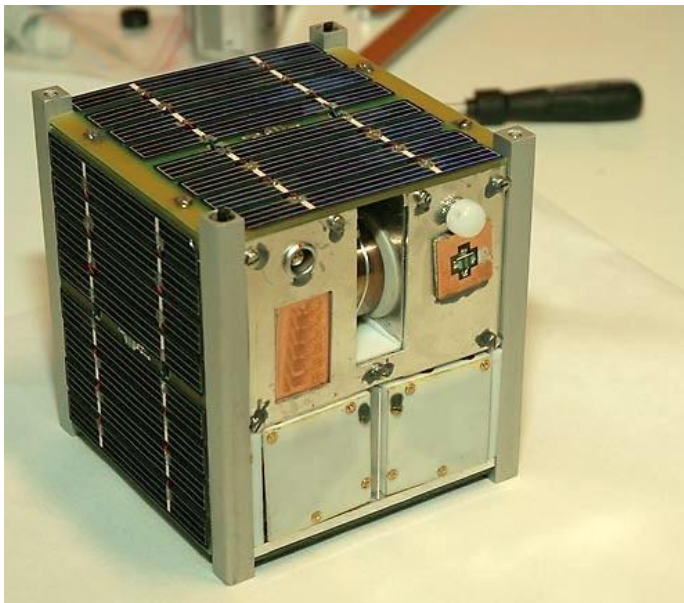
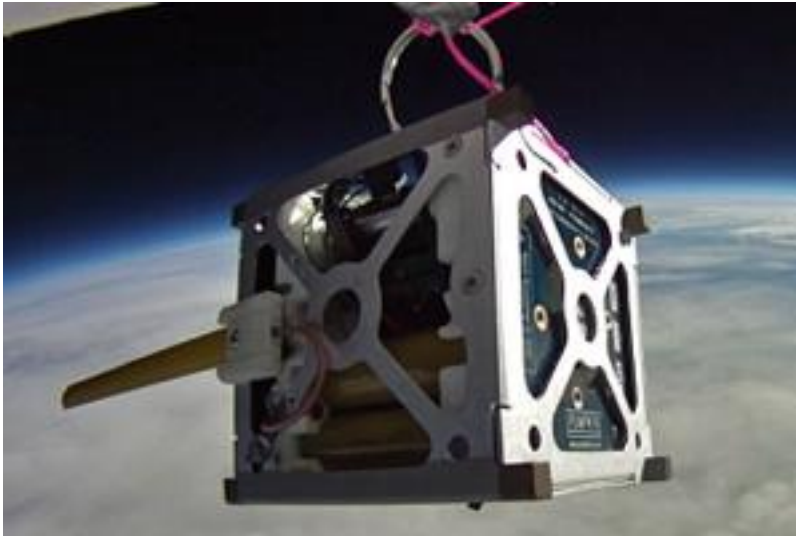
ANTENNA ELICOIDALE





AEROGEL 99,8% DI ARIA

IMPLEMENTAZIONI FUTURE – PIATTAFORMA TEST



ArduSat

GRAZIE PER L'ATTENZIONE

