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1962 2012

50 YEARS OF SPACE EDUCATION  
AND OUTREACH IN FRANCE WITH  
PLANÈTE SCIENCES AND CNES

present:





# PLANÈTE SCIENCES & CNES - A PARALLEL EVOLUTION



# FIFTY YEARS OF SPACE EDUCATION AND OUTREACH IN FRANCE WITH PLANÈTE SCIENCES AND CNES



## ORIGINAL MISSION: SUPPORT TO AMATEURS



# Imagine, build, create, innovate, play, dream...safely



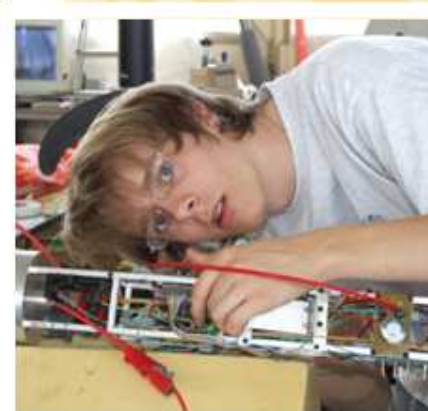
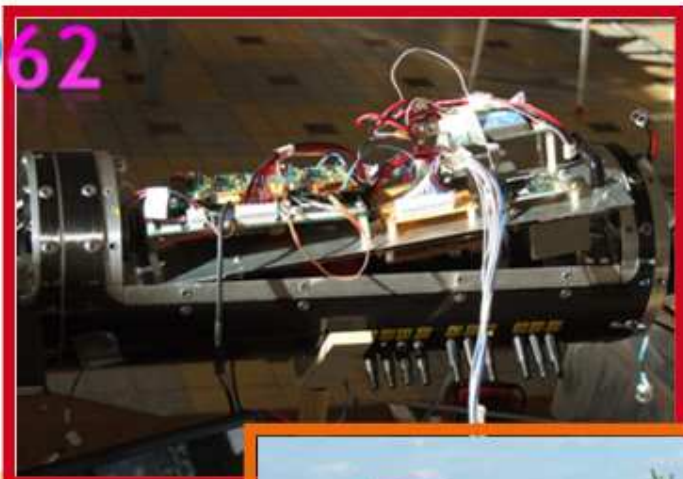
## A WIDE OFFER

- Workshops
- Programmes
- Summer Camps
- Public events
- Contests
- Trainings
- Contents (space, robotics, astronomy, Earth...)

ROCKETS: FROM FASCINATION TO PASSION

The very first experimental space vector for youth

1962



20 rockets each year



EXPERIMENTAL ROCKET From 16, team up to design and build your own 2m tall sounding rocket, including telemetry, and process data collected at 1.5 km.

1.5km



ROCKETS: FOR ALL AGES



1973

50'000 micro-rockets each year

0.2km



0.5km



1984



120 mini rockets each year



1996

10'000s water rockets each year



0.1km



FULL RANGE OF ROCKETS INTRODUCED OVER THE YEARS

- Experimental rockets
- Micro-Rockets
- Mini-Rockets
- Water Rockets

Be a rocket engineer!



# DEVELOPPING MORE TOOLS AND VECTORS FOR YOUTH

1990



6 Zero-G projects each year

30km



1992



150 balloons each year



2006

15 CanSat projects each year

## ORIGINAL VECTORS TO EXPERIMENT

- Weather balloon
- Zero-G
- CanSat (from Balloon)

0.5km



*Meet the constraints of space*

# OUTSTANDING SPACE OUTREACH

1980  
1991



2 Microsatellites  
launched by Ariane  
(V1 and V44)

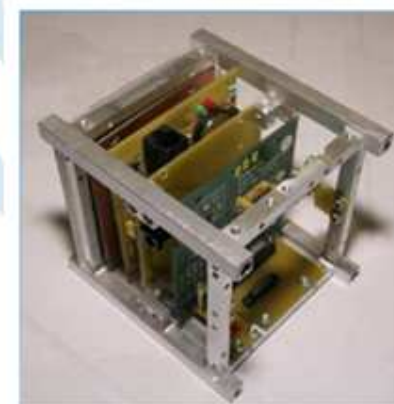


1988  
1992

Youth Experiments  
onboard MIR space station  
and Space Shuttle



2012



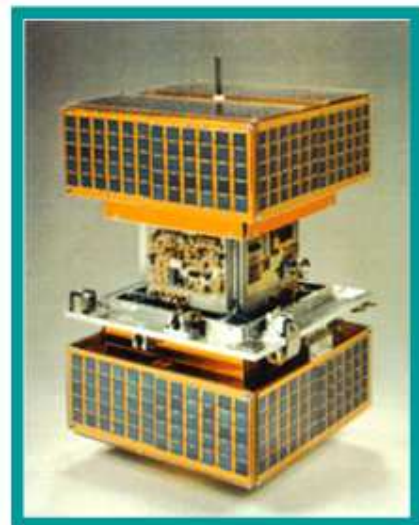
Nanosatellite  
**ROBUSTA**  
launched by Vega V1



1450km

700km

400km



1996  
1998



## EXPERIMENTING INTO SPACE

- Microsatellite
- Nanosatellite
- Space Station/Shuttle

*When youth reach space*



# YOUTH AND SPACE: BEYOND THE FRONTIERS

1972



Safety procedures



Bordeless friendship



Exchanges in English



High tech projects

## A EUROPEAN ASSOCIATION OF AMATEUR ROCKETRY

- 15 nationalities
- Conferences
- Launch campaigns
- Process and safety
- 20 years of passion and cultural exchanges

1964



**C'space**  
LE MANDAT VOSRE ESPACE ETUDIANTS



### LAUNCH CAMPAIGN

- Rockets and Balloons
- Infrastructure and procedures for safety
- International projects



# PROGRAMMES TO REACH OUT MORE YOUTH

1967



Summer camps every year



1992



1999

Annual School Programmes



2011

Mind escape in a prison



## WIDER PUBLICS

- Summer Camps
- Balloon at school
- Rocket at school
- Balloon in prison



BRINGING SPACE OUTREACH TO THE PROVINCES

- To contribute helping youngsters from deprived areas to find their place in society
- To boost their city's and neighborhood's image
- account the specific geographic, cultural and linguistic environment of the territory.
- To encourage long-term local initiatives for scientific activities, with a focus on space topics
- Making science something they can enjoy

2008



2005



- WIDER GEOGRAPHY
- Space in my city (France, metropole)
  - Space along the river (French Guiana)



2000



Track beacons carried by animals or buoys



Measure the atmosphere



2004



MONITORING OUR ENVIRONMENT WITH SATELLITES

- Argonautica
- Calisph'air
- Terre Images



# CHALLENGING THE TEAMS



2009

Achieve a space mission with a CanSat dropped from a static balloon



2009

Fly an egg at the right altitude but don't break it!



2009

Achieve the longest and most precise flight with a water rocket

## COMPETITIONS

- CanSat France (CanSat)
- Rocketry Challenge (mini-rocket)
- Aquamax (water rocket)

- Science education through space activities
- Leveraging industrial know-how
- Passion transmitted through generations
- Gave birth to careers (aerospace industry, education, research)
- Volunteers supported by CNES innovate for more outreach



➤ **More about Planète Sciences Space Division?**



» <http://www.planete-sciences.org/espace>

➤ **More about CNES Education projects?**



» <http://www.cnes-jeunes.fr>