

# Education in space, about space, for space – why?

- Kunnen zijn wie je bent, in spanningsveld tussen ideaal en werkelijkheid, en streven naar prestatie en deugdzaamheid
- In gevoeligheid en weerbaarheid, met anderen bouwen aan een betere wereld
- Eviter “Mozart Assassiné” (A. de Saint-Exupéry)
- A la fois, donner des racines et des ailes (jewish wisdom)
- Nicht die Anbetung der Asche, sondern die Weitergabe des Feuers (G. Mahler)
- Gently let them down in the misery of existence (Alain de Botton)



Pieter Bruegel The Fall of Icarus

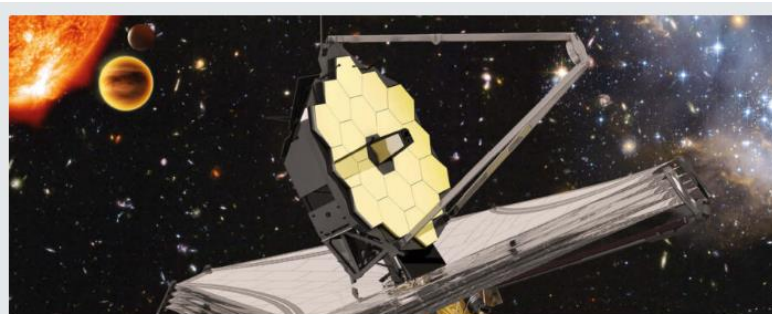
- Knowledge communication in collaboration with the public observatories has already started
- Concerning younger people, VRI / Flanders Space will focus efforts on (>10j) 'scholieren' and students
- With the other stakeholders, establish 1-hour teaching modules + teacher group
- With a substantive offer that does not underestimate the students
- With attention to the [Sustainable Development Goals](#)
- With space for the specific contribution of VRI / Flanders Space:
  - space realisations from Flanders (some pride, but no commercial intention)
  - experiences of our astronauts, scientists and engineers
  - ➔ Space is a real opportunity, here and now!

# Explaining Flanders' role in Space

[ST Engineering](#) in Sint-Niklaas is worldwide recognised supplier of 'VSAT' systems



[Septentrio](#) in Leuven is worldwide recognised supplier of GNSS receivers



James Webb space telescope launched using relay optics from OIP

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# Required: one hour space course modules

## Basismodule ruimtevaart

1. Short history space travel (option)
2. Orbits, speed and gravity
3. LEO's, MEO's, GEO's
4. Radio waves, bits and bytes
5. Watching television with the satellite
6. Internet surfing with the satellite
7. Where am I? What time is it?
8. Looking at the earth with the satellite
9. Looking at the stars with the satellite
10. Travelling to the stars

## Basismodule communication

Satellite dish

Recipient

Television

PC

Secure communication

## Basismodule navigation

Applications on the smartphone

Flying an airplane

Drone control

Car that steers itself

## Basismodule Earth Observation

Terrascoop

Measurements on site

Help! Flood

SDG

## Basismodule manned spaceflight

On a journey to the moon

On a journey to Mars

Practice in Cologne

Practicing in Antarctica

What do we take with us?

# Ruimtevaart: niet voor doetjes

## L'Espace n'est pas pour les faibles de cœur



- Something to reflect on, in relation to STEM
- Space / technology is not for the faint of heart, neither for boys nor for girls
- STEM + SDG doesn't serve much purpose if the workplace remains a power game
- If you judge people by numbers, you get numbers
- Do adults send a credible STEM message to youngsters if they themselves are unhappy in the workplace (both in industry and in education)?
- Shouldn't we work on a better workplace in the first place or at least in parallel?