



# Welcome to 4<sup>th</sup> Virtual UNISEC-Global Meeting

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- **UNISEC-Global** established in 2013
- **Activities:** CLTP, Hepta-Sat workshops, Standardization, BIRDS, MICs
- **Aim:** Access to space and space technology for every country regardless of economic status
- **CubeSats:** Invented early 2000, currently more and more universities all over the world started their own satellite project and their country's first in-orbit satellite
- **UNISEC's role:** Students to exchange knowledge and space expertise to ensure a reduced risk of access to space and enhancing the success rate of their first satellite
- **The World 30 years ago:** For non-space-fairing nations to attempt a local satellite project at university without external assistance was much more difficult, e.g. SUNSAT example



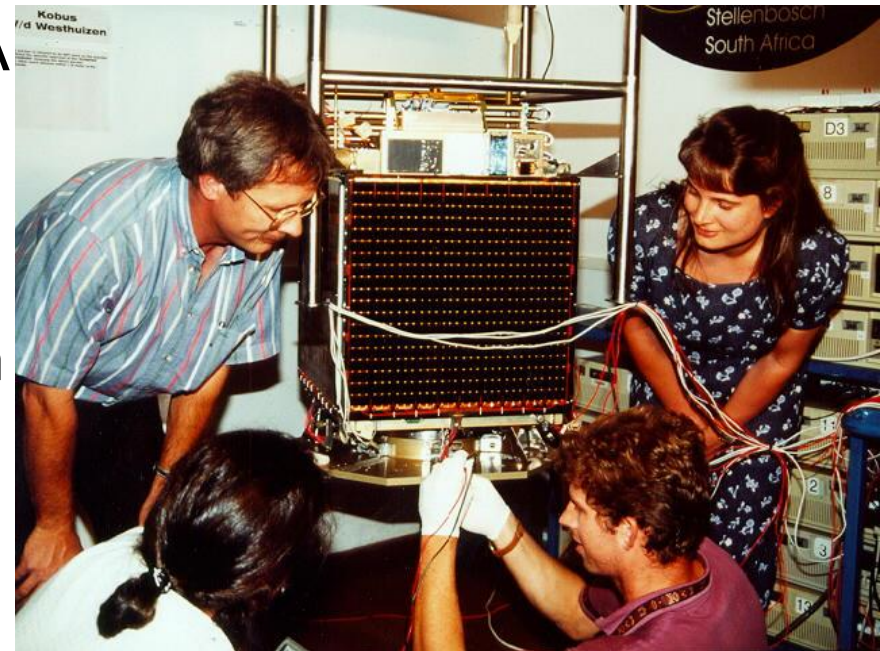
# SUNSAT Birth



➤ SUNSAT student project in E&E Eng Department of Stellenbosch University started in 1992

➤ Aims were to:

- Train engineers for a future SA space industry
- Challenge graduate students
- Inspire school kids in science
- Have international cooperation
- Get sponsorships from SA industry

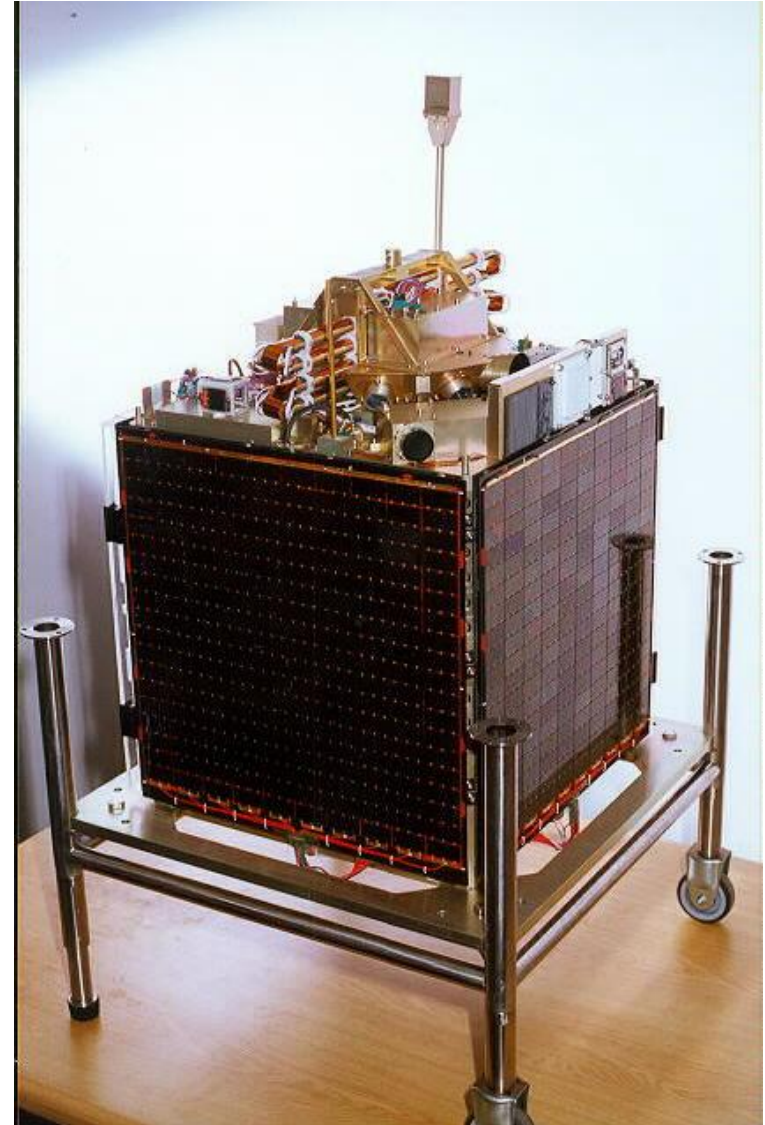




# SUNSAT Project

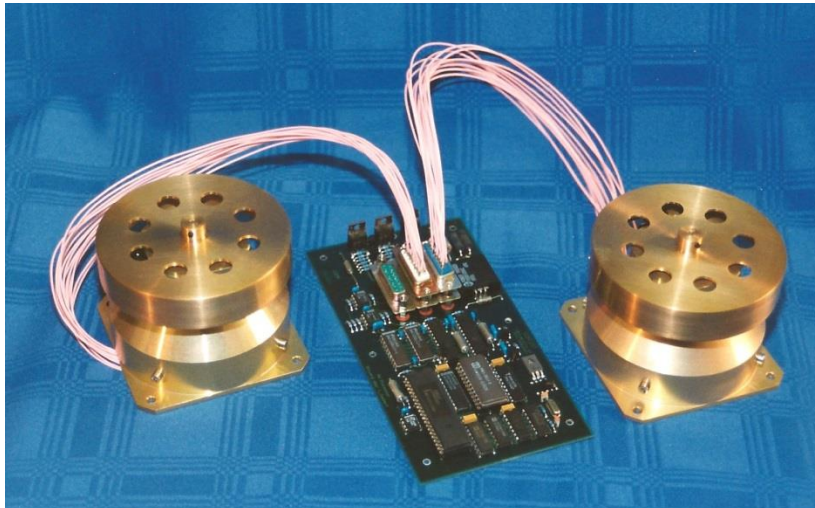


- Africa's first indigenous (locally built) orbiting satellite
- Satellite was designed and developed without any technology transfer help
- Developed by graduate students and staff in period 1992-1998
- Produce more than 100 Masters and PhD degrees
- First microsatellite (64kg) with SPOT-5 type 3-band multispectral resolution camera
- 3456 pixel push-broom sensor giving a 52 km swath and 15 m GSD from 800 km





# SUNSAT Imaging



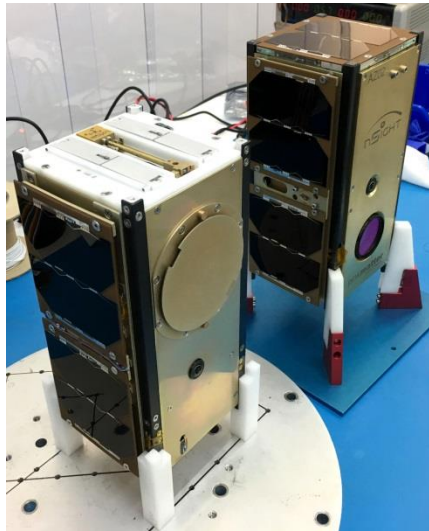
**SUNSAT - Imager (15m GSD)**

Las Vegas (USA)  
99/06/11 20:02:03

*Imaged from Kitsat-3*



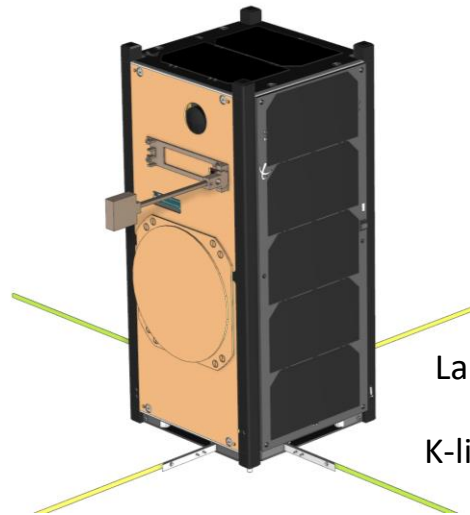
# SA University CubeSats



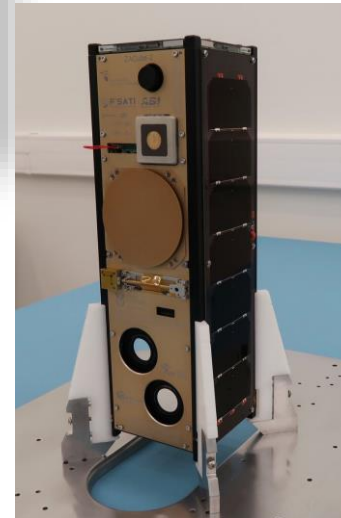
**ZA-AeroSat & nSight-1 (3U)**  
Launched Apr/May 2017  
QB50 Science Fipex sensor  
CubeStar star tracker  
Gecko CubeSat imager



**ZACube-1 (1U)**  
Launched 21 November 2013



**MDASat-1, -2, -3 (2U)**  
Launch 2021  
SDR for AIS and VDES services



**ZACube-2 (3U)**  
Launched 27 December 2018  
SDR for AIS data  
K-line imager for fire detection

