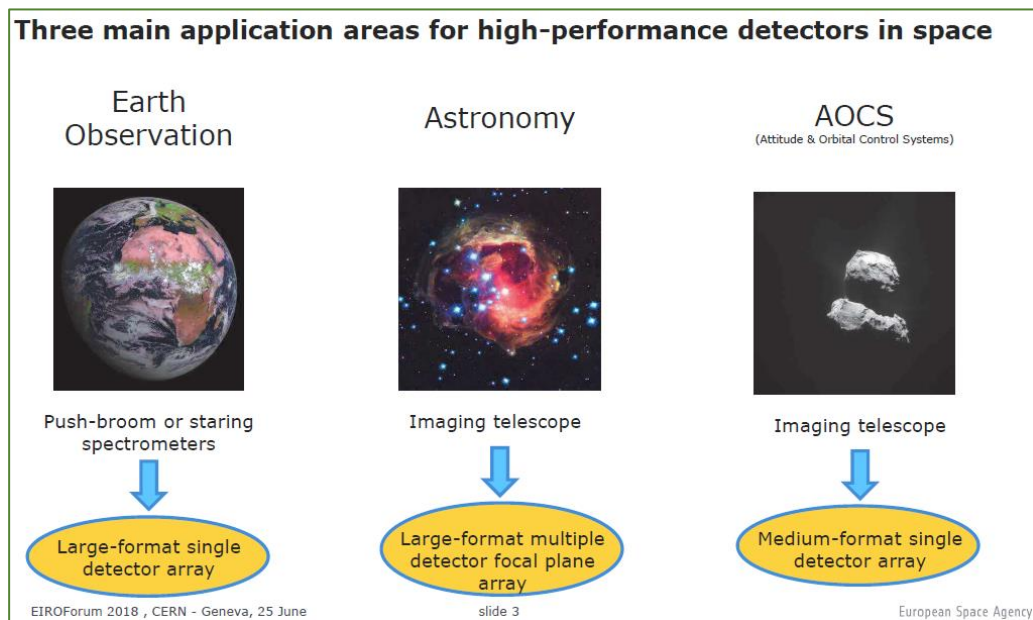


Build a camera for astronomy

We invite smart and creative students to do their internship and master thesis at Caeleste, working in one of the team involved in space based image sensors.

The vehicle is the [ELFIS](#) (European low flux image sensor). The ELFIS imager is the *first image sensor ever* combining following features:

1. True High Dynamic Range imaging without artifacts
2. Global shutter using GS technology, allowing CDS
3. Backside illumination for near 100% quantum efficiency
4. Full ionizing radiation hard design



Slide reproduced with permission from

https://indico.cern.ch/event/729811/contributions/3014034/attachments/1676912/2692550/CMOS_Image_Sensors_EIROForum_-_ESA_June_2018.pdf

In this master thesis we will improve all aspects of the sensor and camera system. There are many possible aspects in this development, probably matching your interest and talent:

- IC design, electro-optical design and design verification
- Radiation tolerant design and radiation damage study, verification and measurements
- Electro-optical measurements, qualification testing, pushing the performance limitations
- Study of the astronomical requirements and specifications
- Building of the hardware system, consisting of PCBs, FPGAs, packaging, firmware, interfacing to computer systems
- Software on the data-handing computer: GUI, real-time interfacing, image processing, calibration, Demonstration of the whole system in-house and at interested parties and institutions.

The thesis work includes a prior internship; the total duration of the thesis exceeds 6 months.

For further information or applications contact jobs@caeleste.be.