



STAR CALIBRATION METHODS

Innovative method of using images of stars to calibrate the imaging system of an Earth observation satellite

Technological benefits

Measurement of the MTF

Little noise
Independent of acquisition conditions (weather etc.)
Greater precision

Focus adjustment

Fast results
Almost no operational impact
Greater precision

Absolute calibration

Quick and easy to operate
Calibration may be monitored

Pointing calibration

Observation of pointing error in the scene
Focal plane cartography
Pointing accuracy
Study of dynamic errors, including orbital and seasonal errors

Detection of ghost images

In-orbit checkouts

Study of microvibrations

Very high cut-off frequency
Easy acquisition and exploitation of measurements



Example of target :
the Pleiades constellation

Commercial benefits

Optimization of observation time

More commercial opportunities
Easier in-orbit commissioning
Quick
Unaffected by weather conditions

Less ground support equipment

No equipment to maintain (no photometers, test patterns or GCPs)
Automation of measurements
Smaller computation workload

Invention overview

Uses images of stars to calibrate the imaging system of an agile Earth observation satellite
This method can be used for in-orbit commissioning or performance checks
Techniques used for the Pleiades satellites

TRL : 8-9

Patented invention, available under licence

Potential applications

Earth observation satellites

In-orbit commissioning and monitoring of performance

For further information