



**The CHRIS imager is a highly versatile hyperspectral system, with more than five years heritage, offering in-orbit programmable selection of spectral bands location, bandwidth and ground sampling distance (GSD).**

The current system, in orbit since 2001, provides the highest spatial resolution of any hyperspectral system flying in the world and has attracted a substantial international user community. It provides simultaneous views of the Earth in many different wavebands, enabling a variety of features to be identified and analysed.

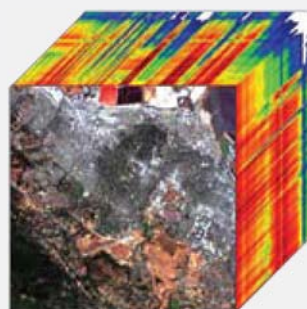
The CHRIS hyperspectral imager builds up pictures of the Earth using a pushbroom scan. A narrow line of the Earth's surface is imaged through the spectrometer and split into its constituent wavebands. Information is captured and stored to form a datacube. By configuring the wavebands appropriately, it is possible to identify hidden targets, fields of illicit substances, mineral deposits and vegetation types.



The Mauna Kea Volcano, Hawaii



Burn scarring near San Diego California



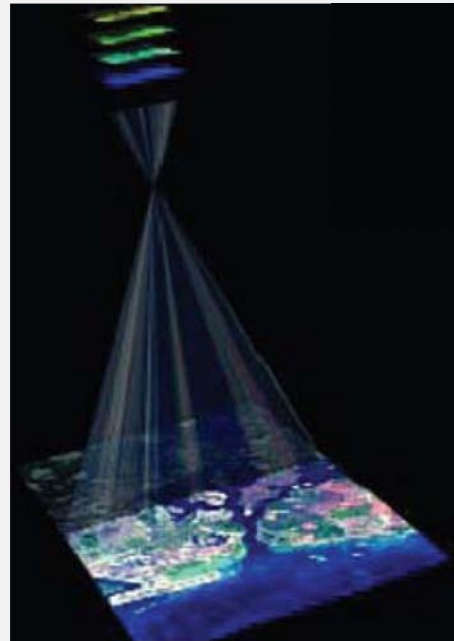
Datacube

## Applications

- ▄ **Rapid Monitoring**
  - Precision farming
  - Regional yield forecasting
  - Forest inventory
  - Disaster monitoring
  - Environmental management
- ▄ **Multi-angle Measurements**
  - Vegetation classification
  - Air quality assessments
- ▄ **Littoral Applications**
  - Water quality
  - Seabed classification
- ▄ **Military Applications**
  - Surveillance
  - Target detection
  - Target identification

## Performance

Parameter	Value
Mass	14kg
Power (when imaging)	<9W
Focal length	746mm
Field of view	1.24°
Sensor array	748 x 748 CCD detector
Digitisation	12 bit
GSD	17m at 560km
Swath width	13m at 560km
Spectral resolution	1.3-11.3 nm
Spectral range	415-1050 nm
Simultaneous bands @ full spatial resolution	18 (17m GSD)
Simultaneous bands @ half spatial resolution	61 (34m GSD)



Pushbroom Scan

## The whole package

SSTL can match the customer's applications by providing flexible options from its wide range of products and services :

- ☛ Mission design and platform manufacture
- ☛ Products
- ☛ An exclusive hands-on and academic training programme
- ☛ Full support for panchromatic and multi-spectral imagery
- ☛ Ground segment installation and support
- ☛ Warranty and support services
- ☛ Launch procurement & insurance
- ☛ Consultancy



Malindi, Kenya

## Surrey Satellite Technology Limited

SSTL has launched over 30 satellites gaining almost 200 years in-orbit experience. SSTL draws on its world-class expertise in both small satellite platform technology and high and medium resolution imagers. SSTL provides complete turnkey system solutions; spacecraft, ground station, launch, operations and image data processing.

SSTL is unique in the space industry; able to design, manufacture and integrate multiple satellites in-house in its three purpose-built facilities in the UK.

Changing the economics of space  
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