EPIC Members New Product Release





SIRIS: > 120 dB dynamic, < 10 e- noise

deep-cooled scientific SWIR Camera



Lytid

Mingming PAN

Paris, 2021-03-02





Founded in **2015** in Paris by Pierre Gellie and Jean-Charles Roche

Our goal:

Identify and valorize high end technologies in photonic range





Lytid continues to extend its reach





SIRIS: high-performance scientific SWIR camera

- InGaAs sensor, FPA 614x 512 pixels
- Dual mode: full linear and in **linear-logarithmic** mode





=> Ultra-high dynamic, up to **120dB** in **lin-log** mode

SIRIS: high-performance scientific SWIR camera



- InGaAs sensor, FPA 614x 512 pixels
- Ultra-high dynamic, up to 120dB in lin-log mode
- Integrated vibration-free, **cryogenic-free** cooler down to 50K
- Long exposure time, up to **1hour**
- Ultra-low read noise <10e- in NDRO mode
- 200 fps full frame, >10k fps ROI



Astrophysical Observations with SIRIS



Lytid SAS – Paris, France

SIRIS-New Product release

ADUTT

1 III •

Fast and high-resolution images



Saturn (Linear mode, 100 ms exposure time)



Jupiter and its moon Ganymede (Linear mode, 40 ms exposure time)



SIRIS-New Product release

High Dynamics acquisition



Jupiter is acquired in **logarithmic** pixel mode, while its moons in **linear** pixel mode, with 10 s integration time.

Jupiter is **22 million times** brighter than Thebe. (July 2020)

Jupiter and its moons Io, Amalthea and Thebe





Linear Read-Out mode



Non-Destructive Read-Out mode



The NDRO mode decreases the noise and allows to detect signals 6 times less bright.

Messier 15 - Globular cluster in the constellation Pegasus

(Same acquisition of 1 s exposure time, J-band filter)

Detection of weak signal



One acquisition with different grayscale levels.

Left: Saturn is acquired in logarithmic mode, while the closest stars in linear mode.

Right: The grayscale of the image has been inverted in order to visualize the low-brightness stars.

Saturn and close stars (one acquisition of 10 s exposure time, J-band filter)





- Hyperspectral Imaging
- Military & Defense
- Semiconductor failure analysis
- Medical Imaging
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A new light is coming...

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