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THE MALBEC PROJECT

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iMACE



cnes



l'Observatoire
de Paris



Malbec

Background

2010 – Leonids [NEPAL]

2012 - A. Sánchez de Miguel *et al.* [SPAIN]

2012 - Danielle E. Moser *et al.* [USA]

2016 - Francisco Ocana *et al.* [SPAIN]

MALBEC

PRO

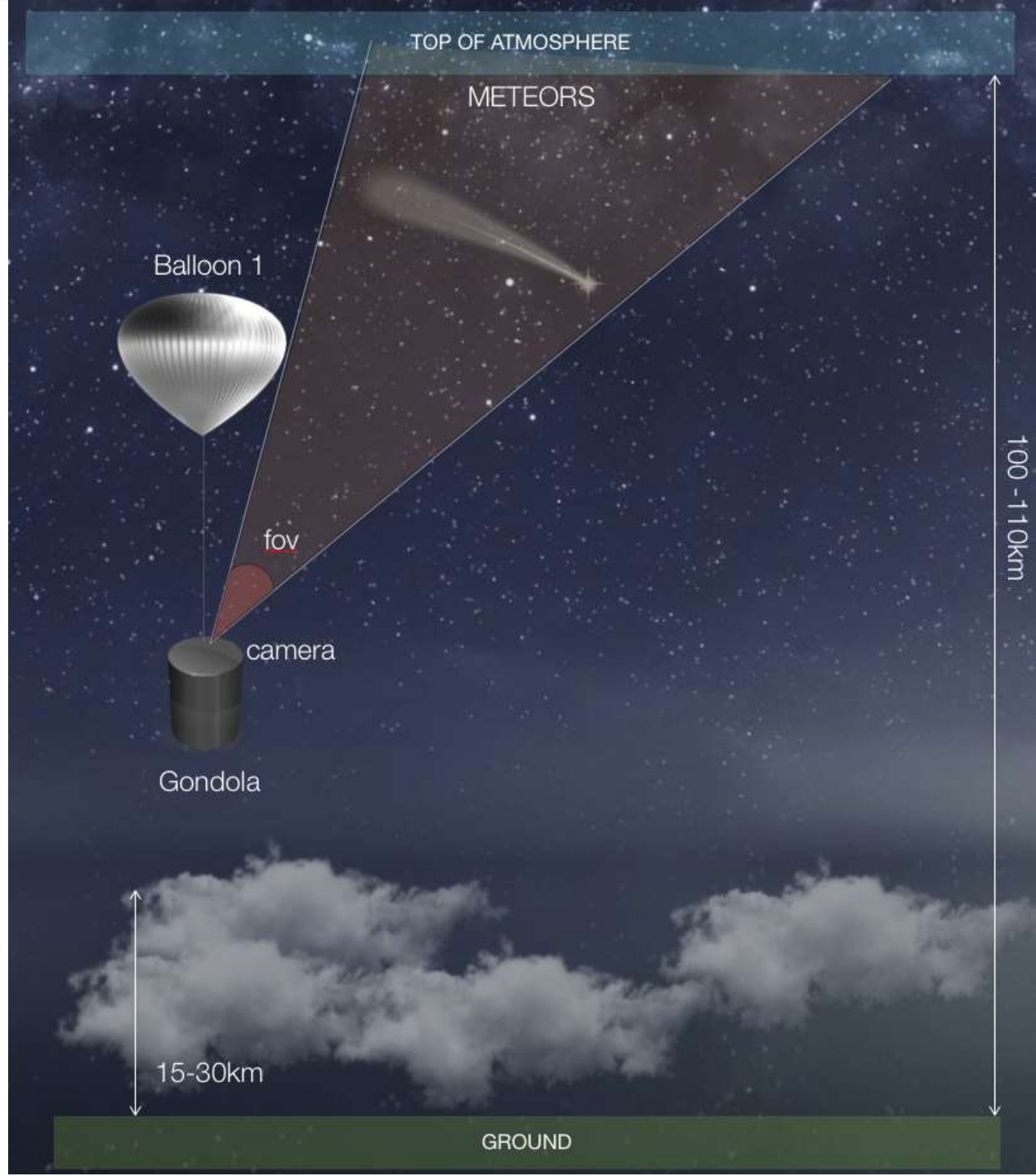
- Above the clouds
- Cheap
- feasibility demonstrated
- Spectral range

CONS

- Embedded system
- Recovery time
- Stability

Pro and cons

Schema



Technical choices – Cameras

Basler Ace 1300 – 60gm NIR

60 fps

GigE

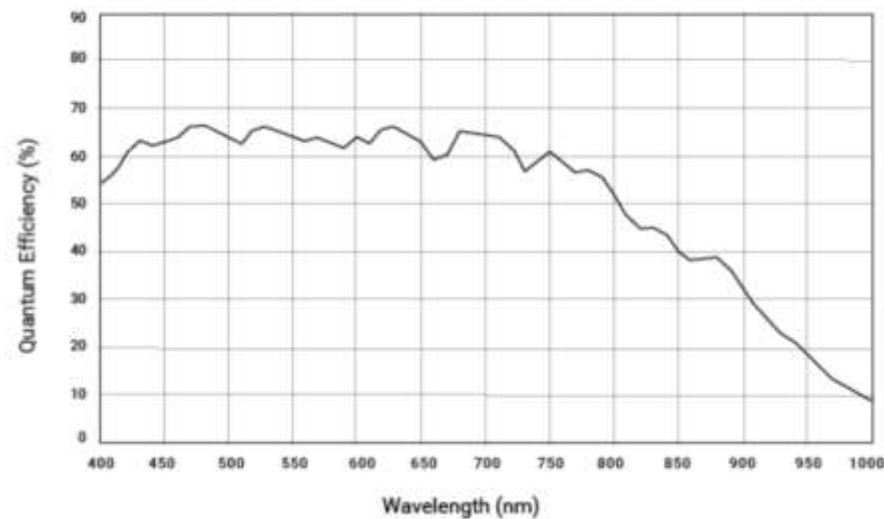


Basler Ace 2000 – 165um NIR

168 fps

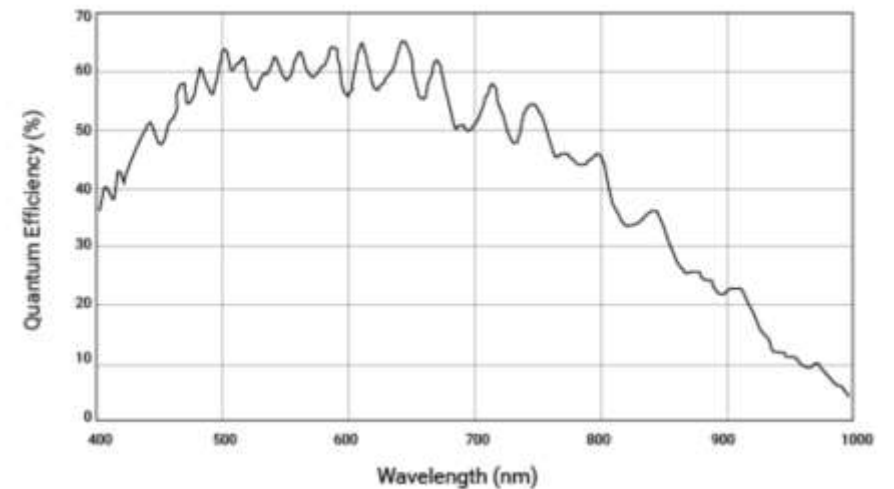
USB3.0

Spectral Response






BASLER
ACE

Spectral Response



Technical choices

MCU

Name	NanoPi NEO2	NanoPi M1 Plus	Odroid Xu4
Pictures			
CPU	Allwinner H5 Quad core	Allwinner H3 Quad Core	Samsung Exynos5 Octa ARM
Dimensions	40 x 40 mm	64 x 60 mm	83 x 58 mm
Weight	13 g	25 g	50 g
USB 3.0	No	No	Yes
Ethernet	10/100/1000 M	10/100/1000 M	10/100/1000 M
HDMI	No	Yes	Yes
Consumption	5V - 2A	5V - 2A	5V - 4A
Price	15 €	40 €	67 €
T° Min / Max (°C)	-30° / +70°	-30° / +80°	-30° / +95°C
Shared bus	Yes	Yes	No
Jumbo Frame	No	Yes	Yes
WIFI	No	802.11 g/b/n	Option
Bluetooth	No	Yes	Option
OS	Debian	Debian - Ubuntu Core	Ubuntu core

An aerial photograph of a coastline. The left side shows a dark, textured landmass, possibly a forest or wetland. The right side shows a body of water with a white boat in the upper right. The text 'June campaign' is overlaid in white, with a vertical white line to its left.

June campaign



Weather parameters

Launch
condition

Temperature
28°C

Winds
12km/h

Max Alt
30km

Receiving
condition

Temperature
28°C

Winds
12km/h

Distance
32km

MALBEC 2018

Trajectory

Legend

- Feature 1
- ⊕ Path

Cazaubon



Aire-sur-l'Adour

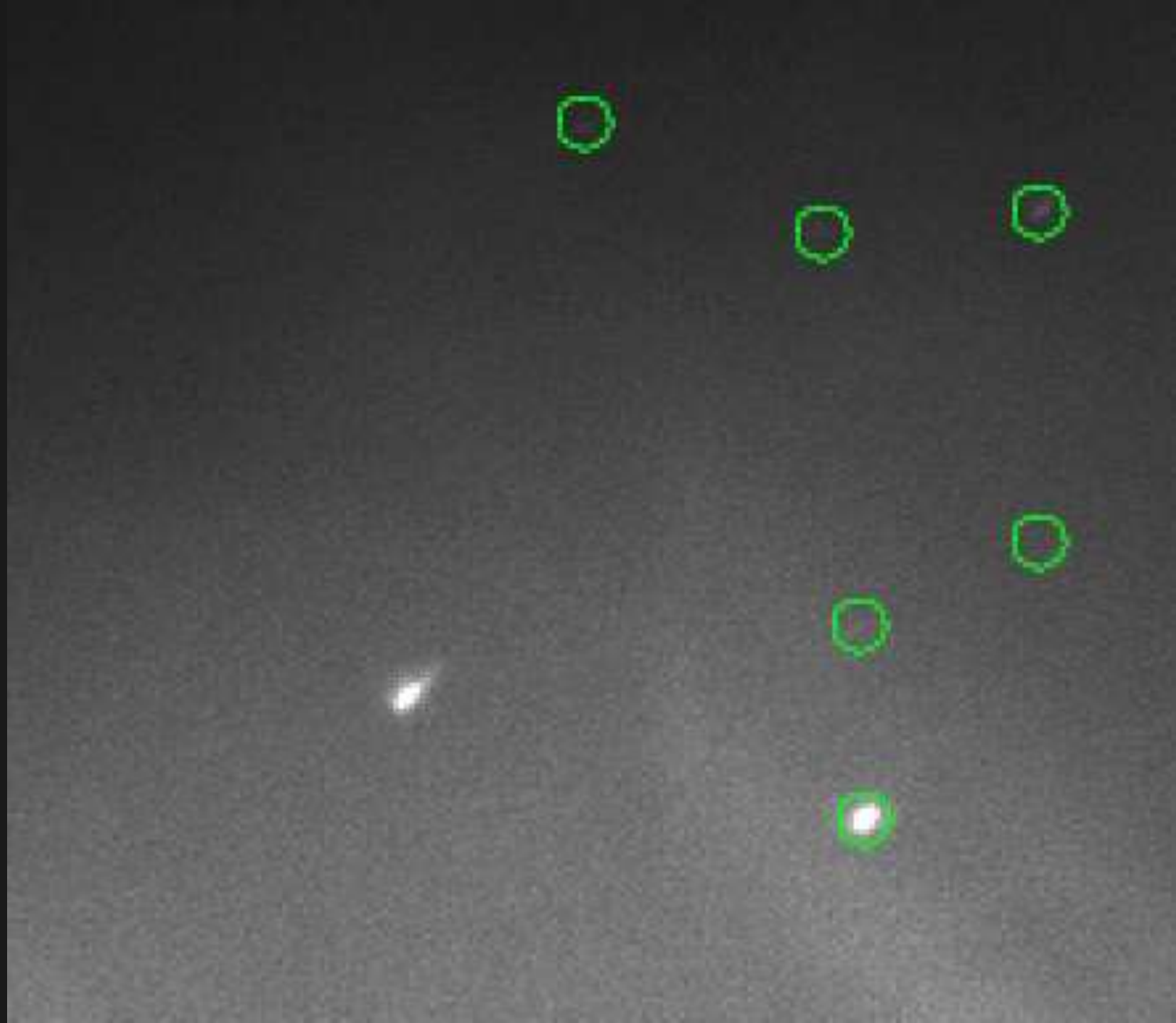
Maro

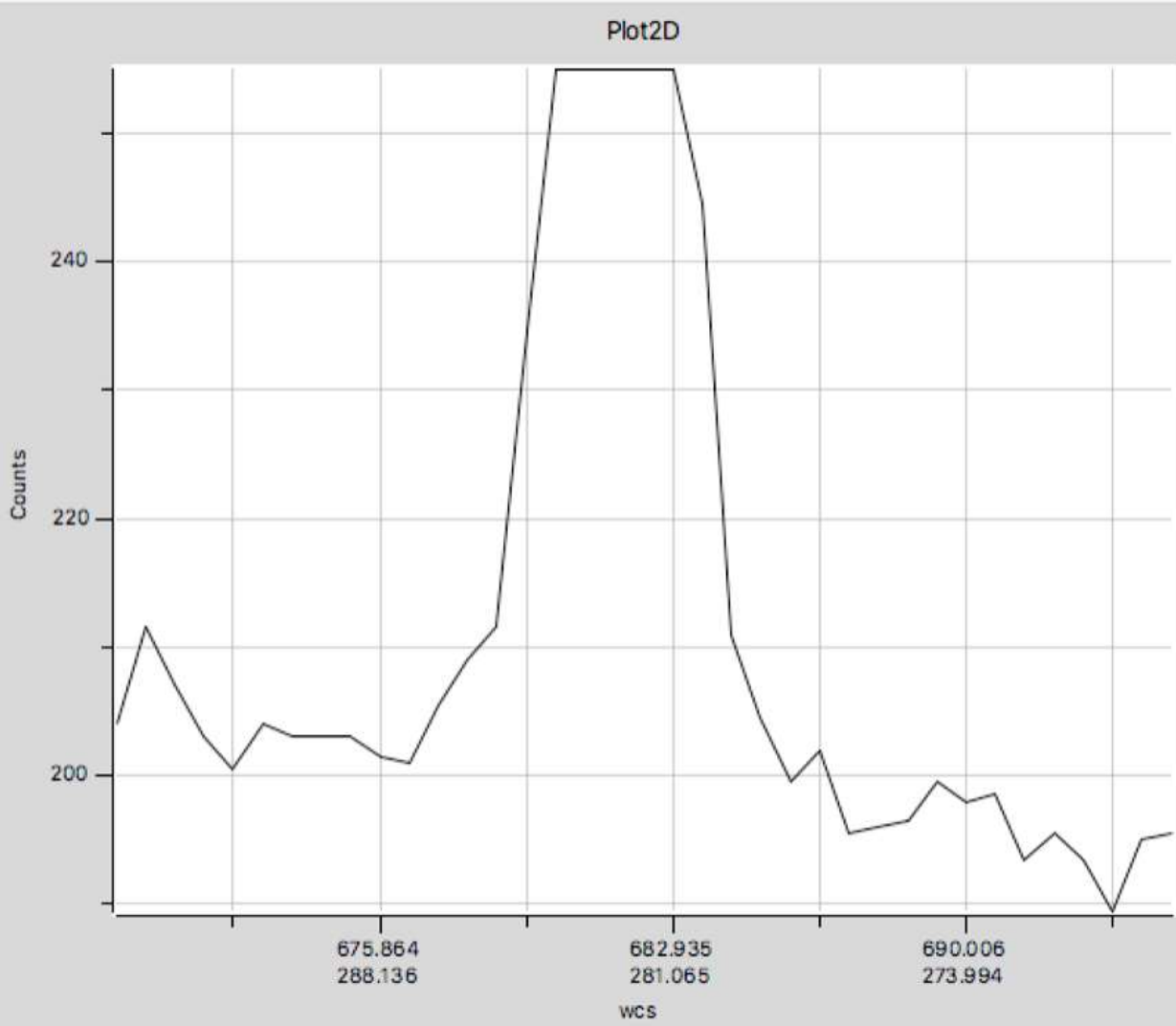
Mau

Results

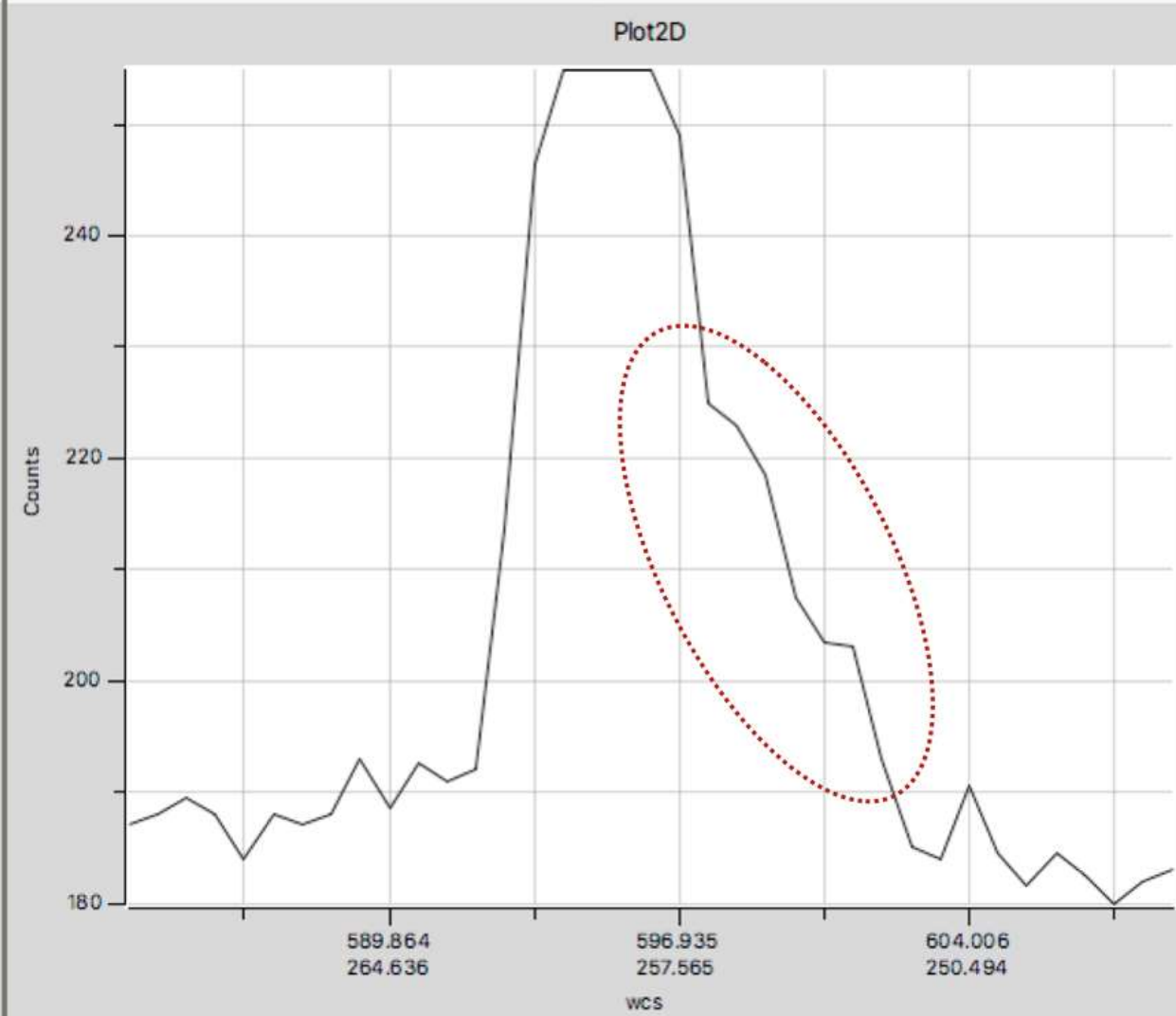
June Malbec Campaign







Profil star



Profil meteor

Graph - pixel's count Vs adu

*Meteor
Automated
Light
Balloon
Experimental
Camera*

Thank you for
your attention

