

MULTI FRAME SUPER RESOLUTION IN PANORAMIC IMAGES

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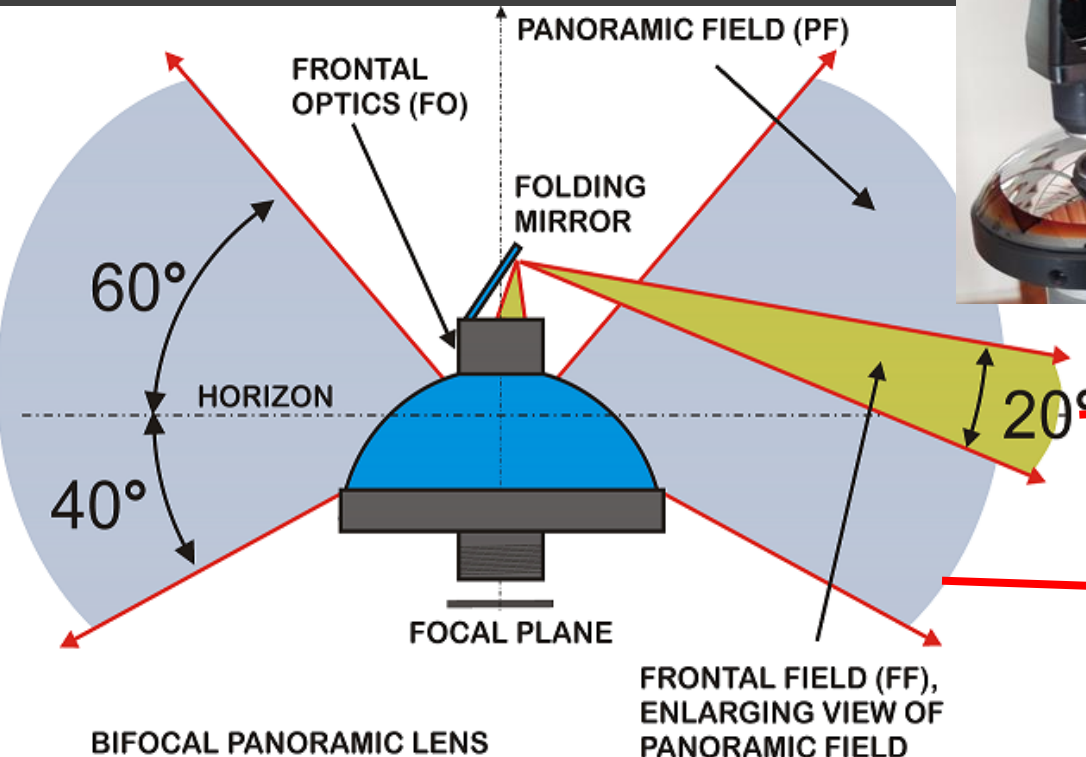
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TO BE APPLIED ON THE DAEDALUS-CAM:
AN IMMERSIVE STEREOCAMERA FOR LUNAR CAVES EXPLORATION



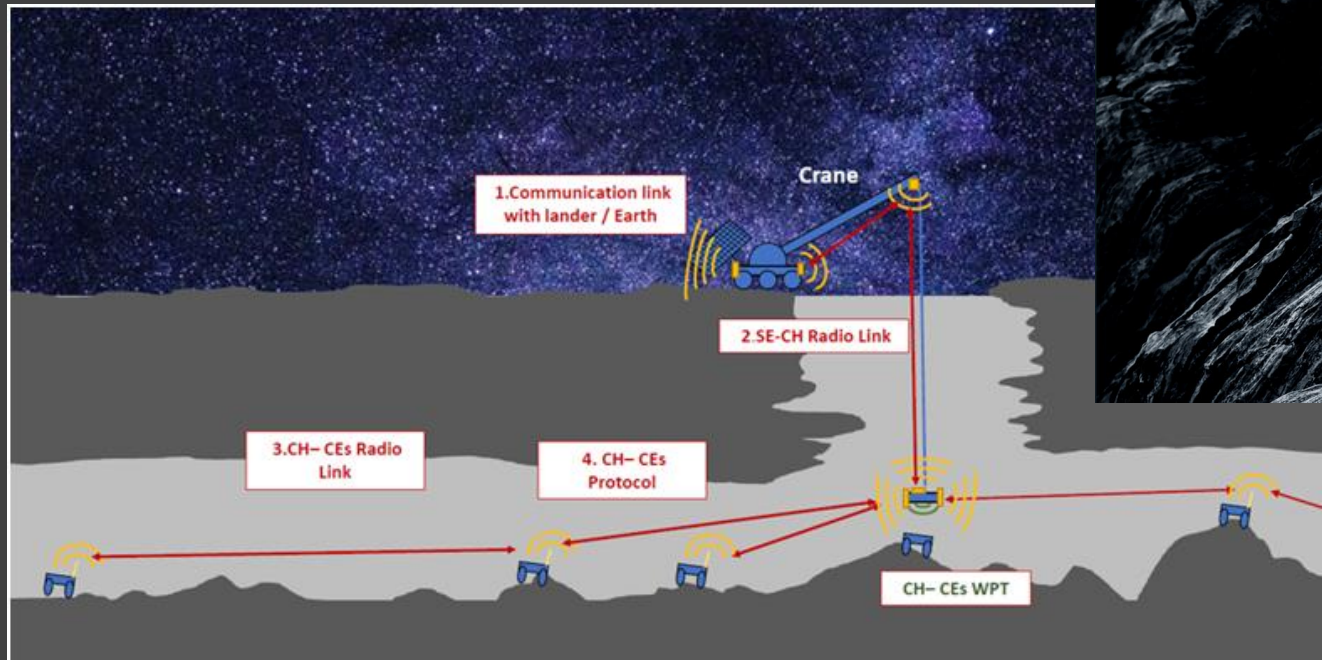
DAEDALUS-CAM

Bifocal Panoramic Lens Image Forming



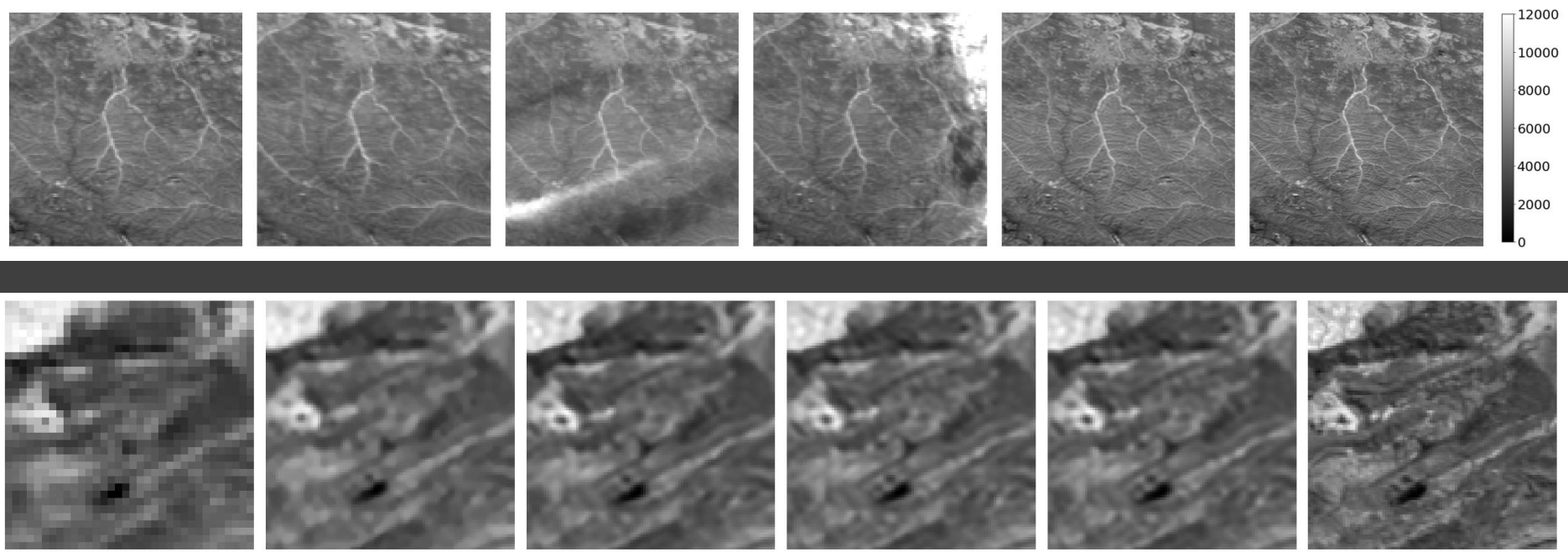
Daedalus Robot

Exploring lava tubes and lunar caves



Multi Frame Super Resolution (MFSR) in space application

**Example of MFSR results on satellite images application.
Left: LR images. Right: the HR result image.**



MFSR in Panoramic Images

Panoramic cameras suffer of relatively low optical resolution.

Daedalus CAM will collect many LR optical images during the cave descent.



Then the topic is to apply multi-frame super resolution algorithms in LR DaedalusCAM images to gain HR images.



MFSR in Panoramic Images

Preliminary results

LR



HR



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(*) The National Institute for Astrophysics is the Italian public research center driving the research both in space and ground-based astrophysics in the electromagnetic wave from gamma rays to radio frequency.