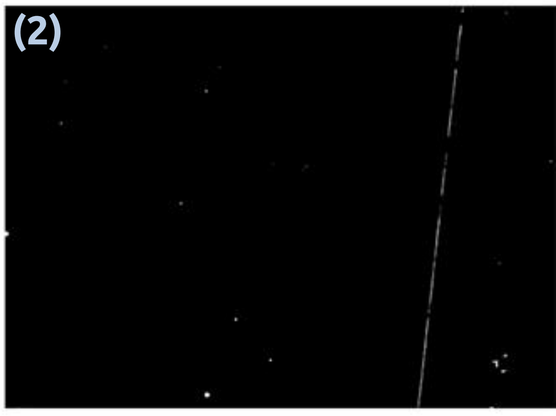
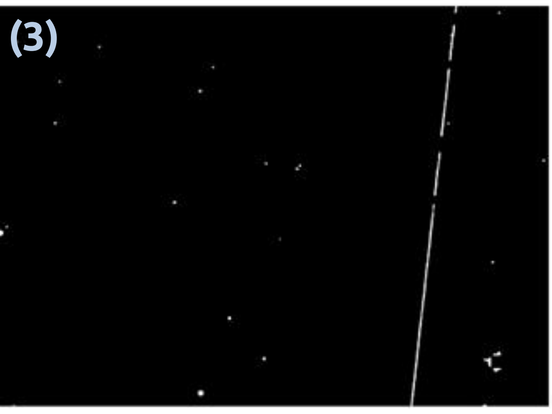
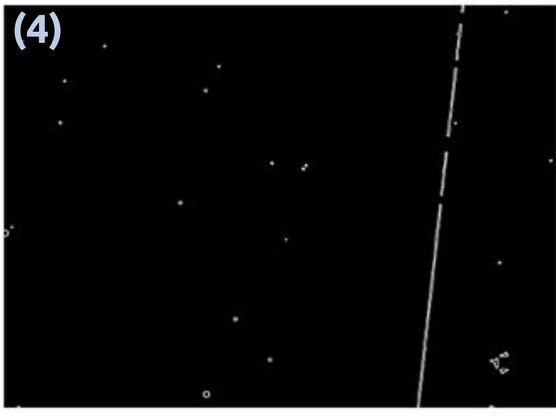
(1) frame-i-002888-1-0139 is an example of a bright trail. Original image (1) is converted from 32 bit float image to 8bit integer image. Pixels with brightness value over 255 are set to 255 and pixels with brightness values less than 0 to 0. Known objects are removed from the image.



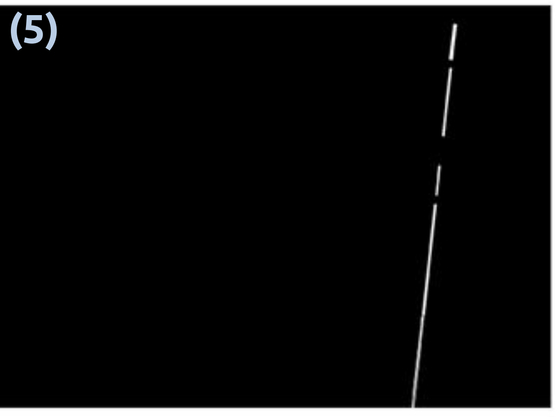
What remains on the image 2 are just the brightest features. After that, the Image contrast is further increased by histogram equalization.



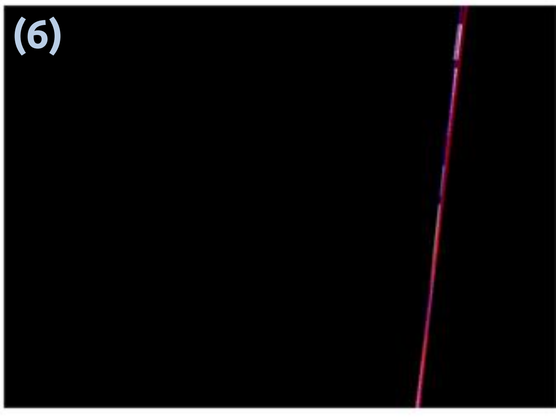
(3) To prepare the image for step (4) image 3 is dilated by 4x4 dilation kernel. This enlarges all existing objects on the image.



(4) All edges on the image 3 are found by using Canny edge detection algorithm.

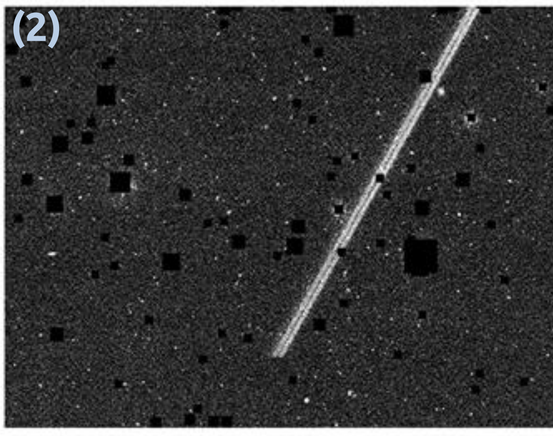


(5) Among the edges only closed looped are kept. Minimal area rectangles are fitted over such contours. Only those rectangles for which longer to shorter side length ratio is larger than lwTresh are used for image reconstruction.



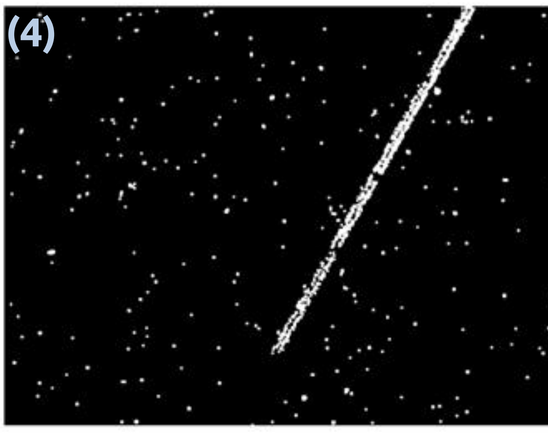
(6) Lines are fitted by using Hough line detection algorithm on images 3 (blue) and 5 (red). If those lines have similar coordinates (θ, ρ) in Hough space, the detection is True

(1) frame-g-002728-2-0424 is an example of a dim trail. Original image 1 is converted from 32 bit float image to 8bit integer image. Pixels with brightness value over 255 are set to 255 and pixels with brightness values less than 0 to 0. Known objects are removed from the image.

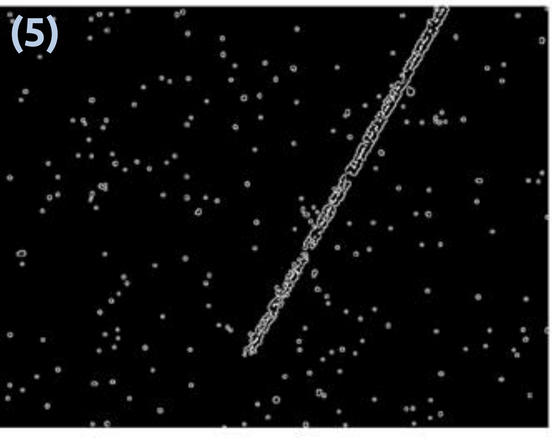


(2) All pixels bellow minFlux value have addFlux value added to them. This increases the image brightness. Image contrast is increased by histogram equalization.

(3) To get a better detection rate image is eroded by a 3x3 erosion kernel. This step removes the noise, but partially destroys linear features as well.

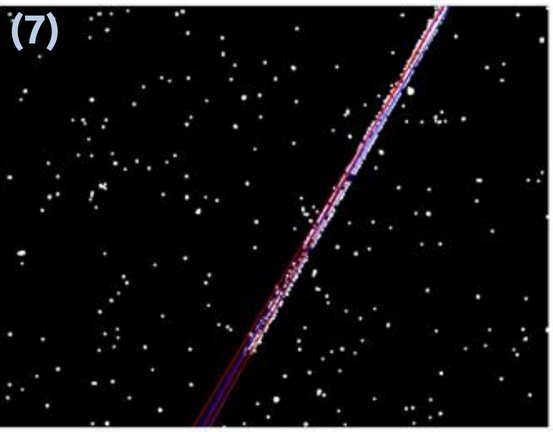


(4) To restore the linear feature, the image is dilated by a large 9x9 dilation kernel. This step connects the object's pixels to enable step 5.



(5) All edges on the image are found with Canny edge detection algorithm.

(6) Among the edges only edges that form a closed loop are kept. Minimal area rectangles are fitted over such contours. Only those rectangles for which longer to shorter side length ratio is larger than lwTresh are used to reconstruct the image.



(7) Lines are fitted with Hough line detection algorithm on images 3 (blue) and 5 (red). If those lines have similar coordinates (θ, ρ) in Hough space, the detection is True