section10_Ex.1&7

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1. Calculate the data rate for a 1,024 1,024-pixel CCD camera system which digitized each pixel to 16 bits in a time interval of 100 microseconds per pixel.

Compare this with an infrared camera system of the same detector format but a pixel rate of only 5 microseconds per pixel. Suppose the IR detector provided 32 simultaneous outputs, what would the data rate be then?

Data rate for a CCD camera

$$\frac{1024 \times 1024\, pix \;\times\; 2byte/pix(=16bit/pix)}{1024 \times 1024\, pix \;\times\; 100\mu s} = 0.02Mbyte/s$$

Data rate for the IR detector

$$\frac{1024 \times 1024\, pix \;\times\; 2byte/pix(=16bit/pix)}{1024 \times 1024\, pix/32ch \;\times\; 5\mu s} = 12.8Mbyte/s$$

7. Compare and contrast IRAF and IDL for analysis of CCD data.

10.2.1 IRAF
10.2.2 IDL

Refer the Yukino san’s and Sato san’s files