

SSN/22.3

Starlink Project
Starlink System Note 22.3

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Coordinate Systems for Pixel Arrays

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1 Background

Despite early attempts to establish conventions for pixel array coordinate systems, several different ones are now in use. The matter was discussed at the 27-28 June 1983 Environment Review Workshop and those present were asked to submit written recommendations for a new, definitive, convention to PTW. These have now been collated, with the following outcome.

2 General

Pixel numbering is distinct from picture coordinates. The former involves pairs of integers, while the latter involves pairs of real numbers. In both cases, however, the first number is called the x-coordinate and the second the y-coordinate; x increases to the right and y increases upwards.

3 Pixel Numbering

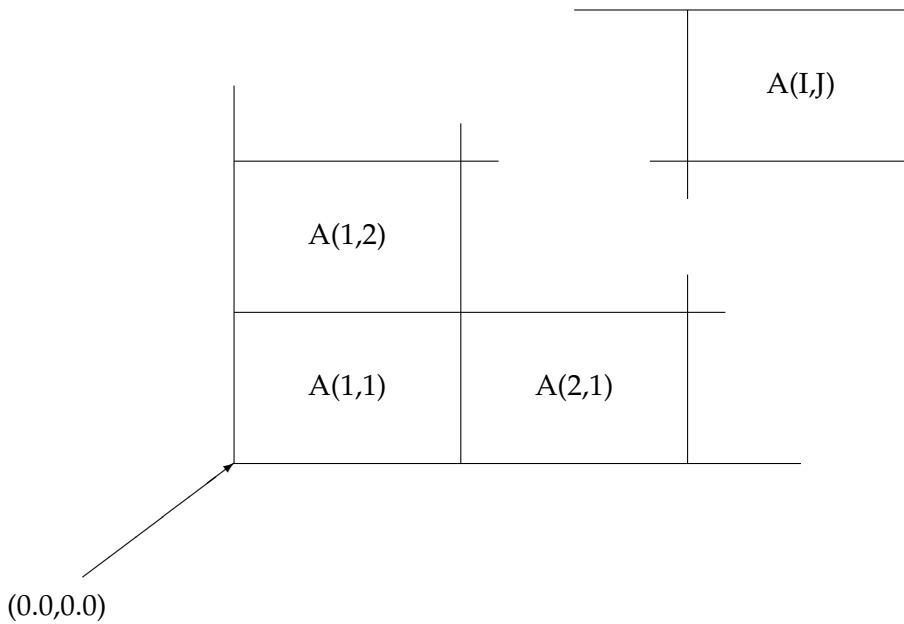
The bottom left-hand pixel is numbered (1,1). The two integers specifying the pixel are the same as the Fortran array indices, for arrays beginning (1,1).

4 Picture coordinates

Pixels are rectangular cells, not grid points. The bottom left-hand corner of the bottom left-hand pixel has picture coordinates (0.0,0.0).

5 Summary

For a Fortran array DIMENSION A(I,J):



Note that this conforms to the existing IDI output routines, but that (i) the current GKS draw pixel array implementation is reversed in y and (ii) DAOPHOT's coordinate system differs by 0.5 pixels in each direction.