THE DISPLAY AND MANIPULATION OF PN IMAGES ON AN IBM PC OR COMPATIBLE

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ABSTRACT. This paper describes PC_IMega, a menu driven program that allows digital images to be displayed and manipulated on an IBM PC or compatible microcomputer, running under PC-DOS versions 2 or 3 with 128k of RAM. A sixteen colour Enhanced Graphics Adaptor card gives a screen resolution of 640×350 pixels.

A maximum of sixteen EGA colours are assigned to a specific range of image pixel intensity values using a linear scale and image sections are scaled, panned and, if necessary, mirrored and displayed in a 512×350 window. PC_IMega can accept a viewable image of 512×700 but the program can read files with pictures of much larger widths and lengths. It can ignore file header information and allows for either one or two byte pixel intensity values. For example, the PN images presented in this paper are FITS format.

The RAM requirements are kept to a minimum by operating on single image lines at a time. All alterations must therefore be made immediately to the stored image on disk.

For a given screen display, the maximum and minimum intensity values can be found and a statistical distribution of intensities can be shown. A bar chart of intensities for any cross-section of the image can also be generated (slice). Individual pixel values can be verified and can be set either to a given value or to the average of the surrounding pixels. A contouring function draws contours of equal intensity.

The images together with file and screen parameters can be stored on a floppy disk. This allows for quick subsequent regeneration of an image display and for easy transfer of images between astronomers.

The PC_IMega will be launched as a public utility program later this year and will be available on floppy disk.

S. Torres-Peimbert (ed.), Planetary Nebulae, 177.