A SPECIALIZED CCD IMAGING AND ANALYSIS SYSTEM FOR EARTH RESOURCES APPLICATIONS PROBLEMS*

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Present-day satellite imaging systems such as LANDSAT are designed to accommodate users in many disciplines, but delight few of them. In particular, spectral band assignments are not optimized. For this reason, considerable image processing is required to extract a useful data set. Image processing on general-purpose computers is expensive and time-consuming. In addition, most users cannot obtain data in the proper form for processing until months after the image has been taken. These constraints exclude a potentially important group of users who need real-time data.

An imaging and analysis system based on CCD technology and containing a real-time data processing element is proposed which will satisfy needs for on-the-spot results in the areas of mineral exploration, oil slick, algal bloom, and blight detection. Preliminary tests with a 100 × 160 array partially demonstrate the feasibility of the system. **

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