

and analyzing tabular statistical data.

The CD-ROM contains three graphical interfaces which facilitate use of the data base: display maps at departmental, provincial or national levels; consult tabular information in customized EXCEL tables; and view detailed commentaries on any of the displayed information.

Installation and operating instructions for the CD-ROM are presented in the Atlas. The CD-ROM contains all of the mapped data, at departmental and provincial levels which have been aggregated to national level in the published Atlas, along with the statistical (attribute) data in customized EXCEL tables. The CD-ROM also contains eight Landsat TM and NOAA satellite images which are not published in the printed edition.

With the digital data users can realize the flexibility and ease of creating new thematic maps, from department to national level through overlaying, combining, and analyzing any of the georeferenced social, demographic, economic, or other data contained in the Atlas Estadístico using ArcView. In addition, the georeferenced data in the Atlas Estadístico may be registered and combined with any of the georeferenced data contained on the Atlas de Suelos de la Republica Argentina.

Readers seeking more information on this CD can check ESRI's home page under products and solutions: http://www.esri.com/base/data/catalog/wba/wba_des.html □

SOFTWARE REVIEW

Geoscope

Version tested: 1.0, US\$150. From LMSOFT, 1280 Bernard St. W., Suite 401, Outremont, Québec H2V 1V9, Canada. Phone: (514) 948-1000. Fax: (514) 948-0511. e-mail: info@lmsoft.ca

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System Requirements: The program will run on a PC with a 286 or better processor (640KB or more RAM for minimal operation, 1.4 MB RAM or more for optimal operation), VGA graphics adapter, 40 Mb hard disk (7-8.2 MB free), Microsoft-compatible mouse, and CD-ROM drive (ISO 9660). The evaluation was done on a Gateway Pentium 133-MHZ system, with 32 MB of memory, and a Matrox MGA Millennium video card with 2 MB WRAM.

System Considerations: It is important to underscore that this program was written for the DOS environment. I found it rather quaint to be back working with a program that was designed for DOS (i.e. works with less than 2MB RAM), yet also interesting to discover it also uses a CD-ROM drive. Although these minimum standards may allow it to run on older pc's, the DOS environment does impose considerable restrictions on access speed. For example, it took several minutes to load an image file from the regional data CD-ROM. Once I got used to these serious limitations, I found that the program had a lot to offer. Program flow control is almost exclusively *point and click*, and the graphics are surprisingly good for this constrained situation. Nevertheless, I do not recommend running this program under any version of Windows, but in DOS alone (a big problem if you have

already converted to Windows 95). I tried running it from an icon in Windows for Workgroups version 3.11 and kept getting general protection faults.

Software Support: The software and a 12 minute video which describes it can be obtained from: Maxine Leverett, Educational Technology Rep., Addison-Wesley Publishers, P.O. Box 580, 26 Prince Andrew Place, Don Mills, Ontario M3C 2T8, Canada. Phone: (416) 447-5101. Fax: (416) 447-7755. E-mail: maxinel@aw.com (There may be other sources for obtaining the software as well, but this reviewer is not aware of them.)

Geoscope defines itself as an *Interactive Global Change Encyclopedia*, since it allows the user interactive access to various images, text, tabular data, and diagrams. The program starts on the premise that you are arriving back at planet Earth from an extended stellar voyage, and dock with the orbiting Earth Observation Station. After entering the station, you take your seat in front of the *control panel* which allows you access and view data about Earth and analyze its features. This control panel concept is important, as the icon of a chair is displayed on most screens, allowing a quick return to the main menu. All of the data files used by the program are on one of the two included CD-ROMs (one for global data and the other for regional data). Data files must be moved from the CD-ROMs to the hard disk before they can be used. The usage of temporary hard disk space is termed the *Workspace* and is an integral component to data accessibility. The program offers a File Management Module to supervise this process.

Four other modules control the various program options:

1. *Explore*—This module facilitates viewing the impressive col-

lection of images, tabular data, and other information contained in the program CD-ROM library. Data are available as long-term averages, and in many cases average monthly values as well. At the global scale, for example, one can access average temperature, precipitation and ozone images, ocean plankton, elevation and soils data, wave heights and sea surface temperatures, economic, population, land use, and agricultural data, and numerous others. Regional data include many of the same kinds of information for whole continents, or selected aspects for small areas, such as weather sequence animations, and Landsat multi-spectral scanner (MSS) and Thematic Mapper (TM) images in various bands.

2. Edit—Here are all the features of a basic image display and manipulation system. Images can be displayed and zoomed, and their display palettes manipulated. Point, line, and polygon digitizing is possible, and map features (legend, scale, etc.) can be added. From my perspective, this area contained one of the most disappointing aspects of the program. After doing all the work to create an interesting visual display of information, it can only be saved as a file for display in DOS graphics mode, or as a screen dump to the printer. I found myself wishing I could export these images in JPEG or GIF format, or allowing import into other programs.

3. Analyze—This module provides the basic features of an image processor that you would find in a remote sensing program (histograms, mask, resize, overlay, image algebra, mosaic, etc.). Again, the inability to export processed products outside the program seems a serious limitation.

4. Scenario—Series of slides are connected in a tree structure, allowing one to step through a process in a visually interesting and informative way. For example, there are

slide presentations addressing remote sensing, ice caps, Bangladesh, and several others. These could potentially be quite useful in introductory geography courses, or as part of self-paced student exercises.

In summary, I found *Geoscope* to be an impressive program, considering the constrained operating system for which it was designed. The concept and design of the program are sound and useful in either the educational or home computing environment. I would not have hesitated to recommend it five years ago (had I encountered it then), but today I am reluctant. Certainly, there are a great many older computers worldwide that could put this program to good use. Unfortunately, I suspect that in the current college computing environment it would not be a prudent purchase. The vendor, however, informed me that a Windows version of this innovative system may be available next year. My recommendation is to wait and see if *Geoscope for Windows* becomes a reality, and then give it serious consideration. □

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