
With the emerging technologies represented by networks such as the Internet, hypermedia protocols such as the World Wide Web and the Hypertext Markup Language (HTML), and the workstation capabilities of today's personal computers, numerous opportunities exist to communicate up-to-date scientific findings to a broad audience. The relatively low cost of Web-based publication of information and the existence of relatively simple software tools that are largely platform-independent permit the scientist to abstract his results in a form useful for audiences at a variety of levels. Here we describe an example of such a hypermedia publication, the Venus Hypermap. Targeted at a high school-to-undergraduate level, the Venus Hypermap is a presentation of some of the highlights of the Magellan mission to Venus. Currently under construction, it will contain text and graphics (e.g., images of Magellan radar and topography data) that illustrate features of Venus' highlands, coronae, chasmata, and large, rise-associated volcanoes. The Venus hypermap may be accessed via a WWW browser such as Mosaic or Netscape at: http://artemis.ess.ucla.edu/~bmoore/Vmap/top.html

Technique: We have developed an intuitive, hands-on hypermedia interface to the Magellan topography data that allows exploration of Venus on two levels. Through the image mapping capability of most World Wide Web clients, a simple point-and-click allows the user to browse the entire topographic dataset. Each hyperimage is mapped so that clicking on a subregion of the image links to a higher resolution image of that region, up to the full resolution of the Magellan maps (approximately 5 km). Navigation at a given resolution is accomplished through buttons linking to the adjacent maps to the north, south, east, and west (Figure 1). The full resolution maps may be downloaded as GIF format image files which are 8-bit pseudocolor images of the Magellan global topography data records. Points of interest within the maps that have their own pages are hyperlinked to the second level of description as detailed below. The Venus Hypermap takes full advantage of the cross-linking and in-line image facilities of the most popular World Wide Web clients, and is easily adapted to utilize other global or regional data such as gravity anomalies, synthetic aperture radar images, etc. Extension of this technique to other planetary or terrestrial data sets is straightforward.

Content. The Venus Hypermap is based on two distinct but heavily cross-linked components. The first is a series of hyperimages that allow the user to view topography of any portion of the Venus surface at a variety of resolutions as described above. The second is a series of hypermedia "pages" devoted to specific geologic features. Each particular class of geologic features has its own set of hierarchical pages. Currently, series devoted to highlands and coronae are under construction; additional pages for chasmata and rise-related volcanoes are planned. Each set of pages begins with introductory text and graphics which define fundamental terms and illustrate some of the basic concepts related to these geologic features, followed by thumbnail views of the features, and a short accompanying description. Each description contains links to an individual feature page, with graphics illustrating topography,
gravity, and radar image data for the feature, and a more detailed geologic description. This hierarchical description format enables users at a variety of educational levels to access the information contained in the Hypermap.

Access to the Venus Hypermap is currently enabled via the World Wide Web at http://artemis.ess.ucla.edu/~bmoore/Vmap/top.html. The hyperimage browser is complete, and individual feature pages will be linked as they become available.

Topography of Venus
41S to 0N, 150E to 195E

Points of Interest:

1. The roughly circular feature near the center of this map is Lactea Corona.
2. The corona is embedded in the Diotis and Dell chasmata system, a series of troughs (blue) and ridges (red) stretching from the volcanic highland Albo Rupes in the east to the highland Thetis Rupes in the west.

Figure 1. Example page from the Venus HYPERMAP