STEREO ATLAS OF THE SOLAR SYSTEM ON CD: A NEW TOOL FOR EDUCATORS; P. Schenk, D. Gwynn, and J. Tutor, Lunar and Planetary Institute, Houston, TX 77058

NASA's unmanned planetary exploaration program has revealed the surfaces of our planetary neighbors to be both familiar and alien. Yet, many of these amazing images fail to impress the viewer with much sense of the true relief of the surface or to reveal stratigraphic relationships critical to understanding surface history. Stereo images exist for significant areas of each planet and most satellites. Stereo has been an important tool for the geologist since the early days of flight, and for the average citizen can be an excellent means of bringing planets 'to life'. To increase access to some of these stereo products and to provide a new educational tool for teachers, students, geologists, and the average citizen, we have assembled a library of representative stereo images of the planets and satellites of our Solar System on CD.

CONTENT, PRESENTATION, & FORMAT

The stereo atlas is designed as a tool for comparative planetology. Representative examples of each major type of geologic feature, including a range of volcanic styles, extensional and compressional structures, impact, glacial, and aeolian features, were selected. Stereo images of Earth are derived from Space Shuttle Hasselblad and Large Format Camera images, supplemented by a handful of aerial photos and ground-level images. Shuttle images were selected because of their availability and because they provide a space-based image format similar to most of NASA's planetary image data.

The browser is HTML 3.0 compatible format. Each stereo pair is presented as a red-green anaglyph stereo pair (a few are also presented as side-by-side pairs). Supplemental data and text describing the relevant features in the scene are presented on screen with each image. The description provides basic information about the location and geologic importance of each feature and can be used to stimulate thought and discussion. Links to related scenes on other planets are also presented. Each image can be viewed at reduced scale showing the entire scene and at full resolution. A menu allows the user to select the mode of image and data presentation. To support educational work, a capability to make simple stereoscopic parallax measurements from the images has been included. This capability allows the user to directly estimate the relative heights of features in each scene (the technique has a relatively coarse resolution, however, and is not useful for every image). A set of instructions outlining how to make these parallax measurements is included.

The stereo image library is indexed by planet (e.g, Mars, Asteroids) and by geologic feature (e.g., shield volcanoes, valley networks). A major theme of this CD collection is comparison of geologic features on Earth and Mars. Earth and Mars are the only two planets with evidence for running water (present or past), and there may be evidence for ancient life on Mars associated with liquid water. Mars is the target of a major exploration initiative over the next decade. Earth and Mars also have the greatest diversity of geologic features and extensive stereo image coverage. Atmospheric phenomena are represented but restricted almost exclusively to terrestrial and martian examples, due to their dynamic nature and the long timebase over which most planetary images have been acquired. Hurricanes and thunderstorms are shown. A prototype version of the CD will be on display at the Lunar & Planetry Science Conference in March, 1997. Anticipated release of the CD for general distribution is May, 1997.