QUICKTIME VIRTUAL REALITY: A VERSATILE SOFTWARE TOOL FOR PRESENTING FIELD TRIPS, SPECIMENS, AND MICROSCOPY IN LECTURES AND ON THE WEB

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Quicktime Virtual Reality Authoring Studio (Apple Computer) is a software tool that assembles digital images into media designed to simulate three-dimensional reality. We have been using QTVR media to significantly enhance our presentation of geology, both in the classroom and on the web. Field trip stops and large outcrops are best represented using digital panoramas and scenes. A panorama is composed of one or more overlapped digital photos that have been stitched together to form a large seamless image. QTVR panoramas present a frame view that can be panned across, up, or down, and zoomed into to investigate different areas of the image. A QTVR scene is a panorama with selected areas defined as hot spots and linked to other media. Clicking on a hot link brings up a new view, either another panorama with a different perspective, a more detailed still image, a map, a petrographic image, or explanatory text. By linking multiple panoramas, images, and other files, a virtual field trip can be created wherein the user is able to move through the scene at will, investigating various features and gathering additional information. QTVR panoramas and scenes can be embedded into Power Point presentations, allowing a lecture instructor to more realistically show how geological features are observed in the field. QTVR objects are created by combining successive views of a rotated specimen to create a still image that can be rotated through different angles on screen by dragging the cursor across the object. Construction of a rotating axial specimen clamp allows small fossils and mineral specimens to be photographed at magnification under a binocular microscope, creating three-dimensional micrographic objects. Individual frames composing the object can be enhanced or labeled prior to assembly using digital editing software such as Photoshop. The labels will appear and then disappear as the object is rotated through the labeled frames. Digital images of petrographic thin sections taken using a rotating stage can be combined to create objects that allow the user to rotate the thin section image through different angles of polarized light. Examples of QTVR media developed for teaching geology can be viewed and downloaded at http://people.hofstra.edu/faculty/J_B_Bennington/qtvr/qtvr.html.

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