ASTRONOMY VILLAGE: EXPERIENCING THE PROCESS OF SCIENCE IN A MULTIMEDIA ENVIRONMENT. S. K. Croft[1] and S. M. Pompea[1]. [1]NOAO, 950 N. Cherry Ave, Tucson, AZ, 85710, scroft@noao.edu, spompea@noao.edu.

Introduction: Most planetary scientists "do" science because it is interesting, challenging, intriguing, cutting-edge and exciting. Most children look at and explore the world around them for the same reasons. Yet by the time they get into high school and college, the excitement and the intrigue are often gone, and classes in science become chores to avoided whenever possible and endured when not. Why? Partly it is the educational system. In the words of one middle school student, "real science" consists of the memorization of words and the taking of tests. For example, students are expected to learn roughly 1500 new words in a typical first year foreign language class. In contrast, the number of new vocabulary words in a typical introductory biology class is closer to 3500! With such a formidable list of words to remember, who has time to get into the spirit of exploration and discovery that drives the typical Earth scientist?

It has long been recognized that science teaching is more effective when it involves hands-on activities and problem solving. Two multimedia products have been developed that provide an inquiry-based scientific exploration of a selected set of planetary and astronomical problems: "Astronomy Village: Investigating the Universe" (AV-IU), and "Astronomy Village: Investigating the Solar System" (AV-ISS). Following content guidelines in the NRC's National Science Standards, AV-IU is designed for high school students and deals with topics mostly in stellar and galactic astronomy, while AV-ISS is designed for middle school students and deals with topics in astrobiology and planetary geology.

Description: The objective of both products is to engage students in scientific inquiry by having them acquire, explore, and analyze real scientific data and images drawn from real scientific problems. In each product, students are provided an array of ten investigations. In each investigation, students are presented with a problem and are provided with an array of information – images, experiments, informative documents, and digital/graphical data – that can be used to define the problem and investigate possible solutions. Images are used as illustrations, combined in several types of comparative formats, and used as objects of detailed image processing and digital analysis. Students are guided through their investigations in both products by the "Research Path Diagram," a visual representation and interactive model of the scientific process. In the earlier AV-IU, the "path" was linear and each investigation was independent. In the later AV-ISS, the path is circular and investigations are linked, so that students can see how research activities are in a sense cyclical and build on one another. By working through the investigations and by doing "hands-on" activities both on and off-line, students gain an understanding of how science works. They also gain understanding of physics, biology, and geology through hands-on analysis and synthesis of NASA planetary and deep-space images and data. Both products will be available for demonstration.

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