Space Images for NASA JPL Android Version

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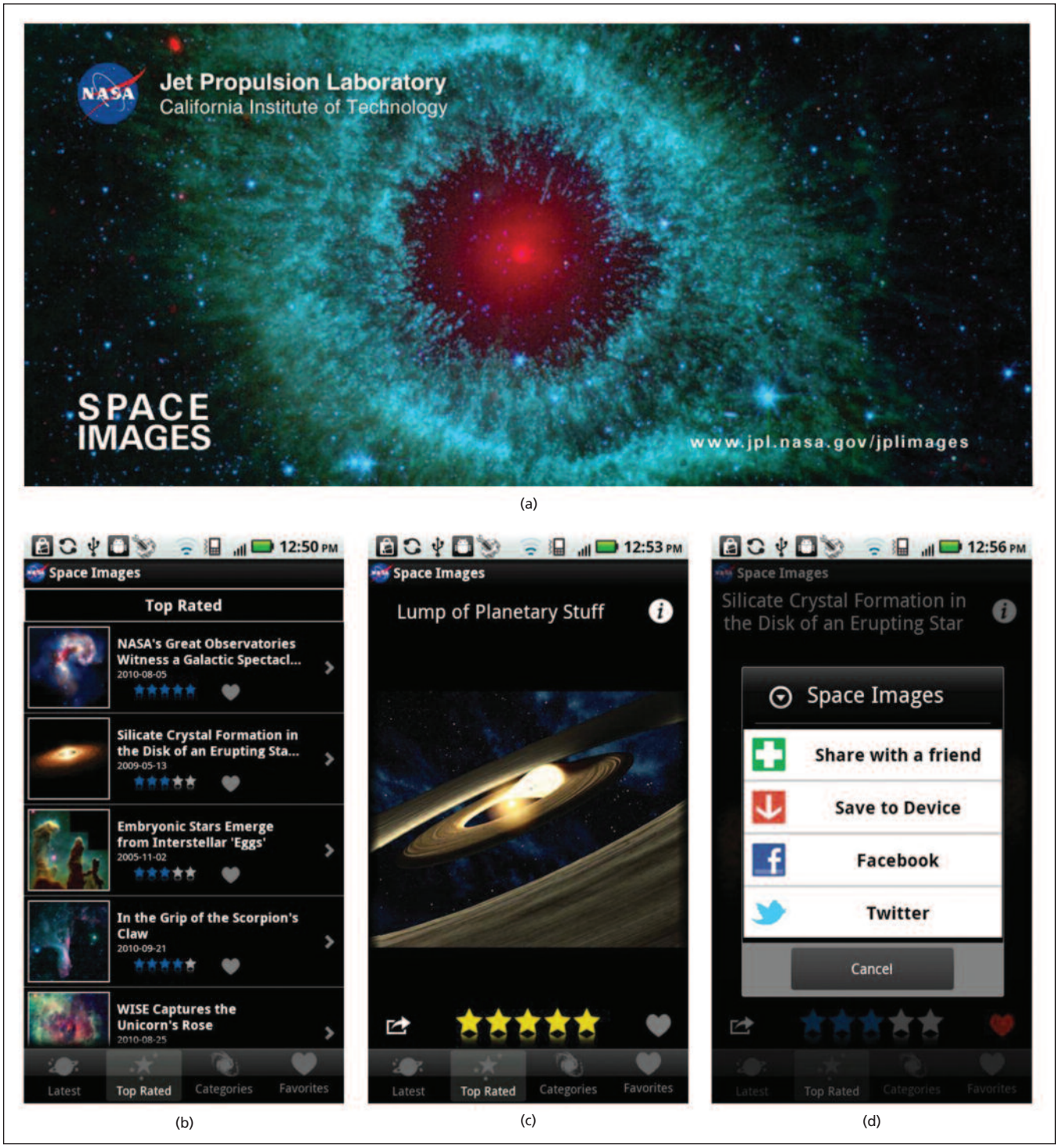
This software addresses the demand for easily accessible NASA JPL images and videos by providing a user friendly and simple graphical user interface that can be run via the Android platform from any location where Internet connection is available. This app is complementary to the iPhone version of the application. A backend infrastructure stores, tracks, and retrieves space images from the JPL Photojournal and Institutional Communications Web server, and



Sample Screen Shots of the Space Images Android Application: The feature graphic (a) is displayed on Google Play Android Market. The title and image thumbnails (b) are scrollable lists. When clicked, it will show the images in detail, as well as a caption describing the image (c). The user can rate the images by giving a star rating from 1 to 5. In addition, there is an option to share the image by e-mail, Facebook/Twitter, or save it to the user's Android device (d).

catalogs the information into a streamlined rating infrastructure.

This system consists of four distinguishing components: image repository, database, server-side logic, and Android mobile application. The image repository contains images from various JPL flight projects. The database stores the image information as well as the user rating. The server-side logic retrieves the image information from the database and categorizes each image for display. The Android mobile application is an interfacing delivery system that retrieves the image information from the server for each Android mobile device user. Also created is a reporting and tracking system for charting and monitoring usage.

Unlike other Android mobile image applications, this system uses the latest emerging technologies to produce image listings based directly on user input. This allows for countless combinations of images returned. The backend infrastructure uses industry-standard coding and database methods, enabling future software improvement and technology updates. The flexibility of the system design framework permits multiple levels of display possibilities and provides integration capabilities. Unique features of the software include image/video retrieval from a selected set of categories, image Web links that can be shared among e-mail users, sharing to Facebook/Twitter, marking as user's favorites, and image metadata searchable for instant results.

This work was done by Jon D. Nelson, Sandy C. Gutheinz, Joshua R. Strom, Jeremy M. Arca, Martin Perez, Karen Boggs, and Alice Stanboli of Caltech for NASA's Jet Propulsion Laboratory. For more information, see http://www.jpl.nasa.gov/apps/spaceimages/.

This software is available for commercial licensing. Please contact Dan Broderick at Daniel.F.Broderick@jpl.nasa.gov. Refer to NPO-47961.

Kinect Engineering with Learning (KEWL)

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According to a Nielsen survey at the time of this reporting, 41% of all households have a game console. This is one market in which NASA has been absent from education and outreach efforts. Kinect Engineering with Learning (KEWL) is made to enter into that market and bring NASA education and outreach to a very familiar venue. KEWL creates an education and outreach experience that is more participatory, both in a school and museum environment.

KEWL is a set of applications that runs on an Xbox 360 (see Figure 1) using the Kinect controller used for education and outreach. These applications currently include: Train R2 (see Figure 2), a visual simulation of Robonaut 2 that allows students to control a virtual R2 in a game environment; Drive R2, an interface using the Xbox 360 and Kinect controller that allows students to control the real R2 using the methods they learned playing Train R2; ISS experience, a visual tour of the interior of the International Space Station where students use their body to fly through the virtual ISS; Gravity Ball, a simulation of throwing balls in the gravity of different planets; Solar Array repair, a simulation of the simplified STS-121 solar array repair mission; and PlaySpace, a Mars/Moon application that allows students to experience different aspects of Mars/Moon.

Users can "fly through" the ISS using their body, allowing an experience similar to what an astronaut would have on orbit. In PlaySpace, users can fly over the surface of Mars and view surface data obtained by Mars rovers. Users of Train R2

Figure 1. The **Xbox 360** is one of the most recognized gamng consoles.

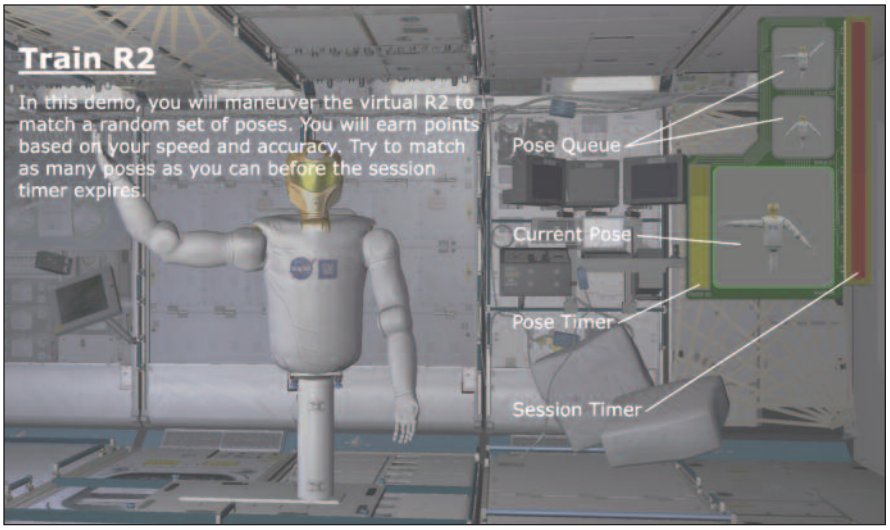

Figure 2. In **Train R2**, the student learns to control a simulated R2 using simple poses.