

NewsRelease



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NASA technology helps weekend photographers look like pros

If a picture is worth a thousand words, new image-enhancement technology jointly developed by NASA and industry will increase the average photographer's vocabulary many times over.

This new development will especially help weekend photographers who use the increasingly popular digital format. Digital images of family, friends or one's favorite hobby can be corrected for many common problems with help from this award-winning technology.

The technology, called Retinex Imaging Processing, could be used to enhance the billions of images captured each year by the growing use of low cost digital color cameras, color printers and desktop and internet publishing programs.

The process was originally developed for remote sensing of the Earth by researchers at NASA Langley Research Center and Science and Technology Corporation (STC), both in Hampton, Va.

TruView Imaging Company, an affiliate of STC, has licensed the technology from NASA and plans to market it in the form of a software product for home, professional and industrial use by the end of the year.

With it, amateur photographers, armed with nothing more than their personal computers and a desire to get the most from the images they capture, will have the ability to increase the brightness, scene contrast, detail and overall sharpness of images with much more ease than they can today.

What distinguishes this technology from existing image enhancement technologies is that it makes corrections automatically, yet allows the end-user to manipulate the image as desired. As

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a result, the average photographer is more likely to use the technology and use it successfully.

It won't correct every image, but was impressive enough to win a NASA Space Act Award as one of the space agency's top inventions of the year for 1999.

"What makes Retinex technology so valuable is that every image can stand a little improving, especially dark, low contrast images," said Glenn Woodell of NASA Langley, one of three inventors of the technology.

Dan Jobson, also of Langley and the technology's principal investigator, teamed with co-inventors Woodell and STC's Zia-ur Rahman to modify the technology for commercial applications.

"STC thinks consumers will find this technology so easy and gratifying to use that people who would never consider doing anything more than snapping a picture will let Retinex finish the job," said Rahman.

The realistic beauty and visual impact of photographs can be diminished, damaged or ruined by a variety of possible problems. For example, colors and details can be lost or suppressed in shadows or other low light level zones in a picture. These same scenes, when viewed directly by the human observer, are vivid by comparison to the recorded image. Consequently, the user loses both the visual quality and emotional intensity of that captured memory.

"Existing image enhancement methods used to correct these limitations are either insufficiently powerful or require tedious and extensive manual user interactions," said Marisol Garcia, Langley's Retinex commercialization project manager.

NASA Langley has demonstrated the software-based technology for general-purpose applications such as home photography, as well as specialized applications such as surveillance imaging, medical imaging and space-related imaging. The latter includes severe high-contrast images of on-orbit Space Shuttle operations and Earth observations from space.

The technology is currently being refined for video image enhancement, where the technology's high-speed, automatic correcting features should make quick work of an otherwise tedious and extensive process.

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For publication-quality still images, visit the World Wide Web at:

<http://dragon.larc.nasa.gov/retinex/pao/news>