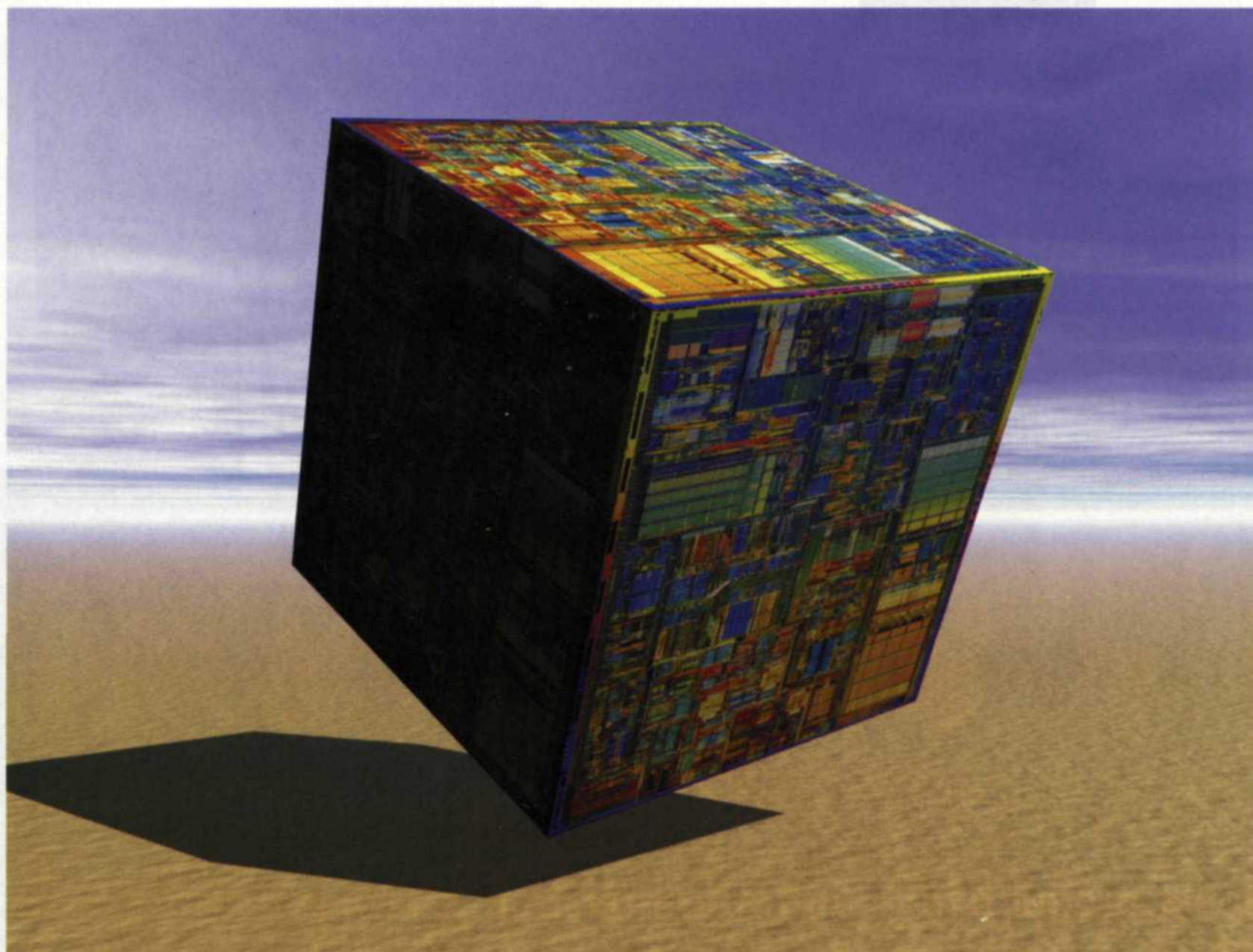


# DIGITAL DIRECTIONS

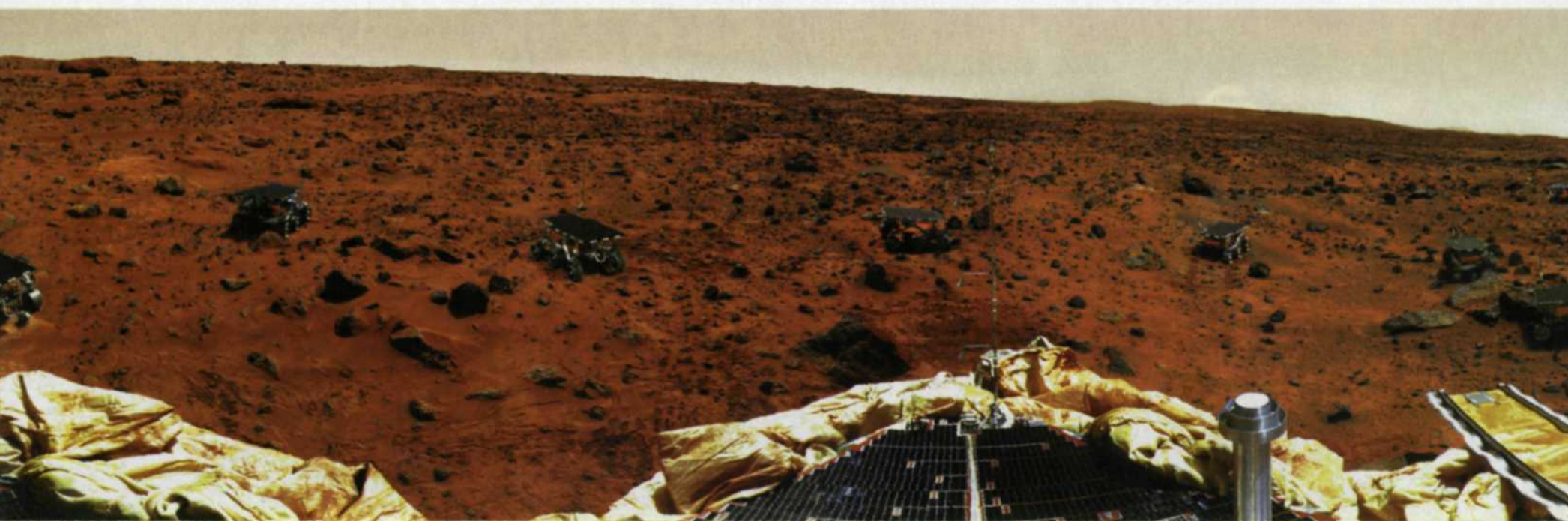
## FUTURE SHOCK 2001:

The Remedy Is a Hefty Dose of Homework!



*Above: Illustration of new Pentium 4 chip that will enhance and speed up the photo editing process with speeds over 1 gigahertz.*

*Below: Image transmitted from Mars in pieces and stitched together with new photo technology that can create one hi-resolution panorama. Notice that the rover was captured in different places during the time that it was transmitting images. —NASA photo*





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The key to your imaging business surviving in the 21st century is your ability to adapt to the ever-changing technologies. This does not mean that you need to embrace every new technology that concerns your lab, but you must stay on top of new equipment and ideas. You can be assured that your competitors will. This means that no matter how small your lab, you should have at least one person responsible for keeping you informed of the latest, greatest photo-related technology.

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### Jack and Sue Drafahl

IT WASN'T SO LONG ago that keeping current was easy. You could go to the trade shows, read magazine articles, send for literature, or talk to your local sales agent about new innovations for your lab. Once you made your decision and investment, you were set for years.

Today, we still go to the same trade shows, but the literature we collect is only accurate for a few months. Many manufacturers have resorted to creating CDs just a few days before show time so that their information is up to date. It is now common for manufacturers to recommend you visit their website for the most accurate product information because it is updated daily.

Just learning about new technologies is not enough. You also have to make educated decisions about whether to incorporate this new equipment into your lab. Since things are moving so fast these days, there is a strong possibility that your new digital equipment will quickly be outdated.

It is critical that you completely understand how the equipment works and analyze just how long it will take to pay for itself before it is recycled. This involves constant market research involving your customer base to discern their needs.

Technology is changing so rapidly that many photographers and lab owners often ponder just when is the right time to jump in. No one wants to pay too much for leading edge technology, only to find out that the competition has gone one better.

It is a difficult situation and may be a source of frustration. There is no way you can test all the equipment you are considering, so you have to rely on others' research to whittle down your potential product list.

If you think technology is leveling off and there is not much left to invent, think again. Technology takes the science fiction of today and makes it reality tomorrow. If someone can dream up a new idea, there's a good chance someone else can figure out a way to make it work.

As we were preparing this article, Intel announced a new type of transistor that is only three atomic layers thick, enabling the creation of 10 gigahertz (10 billion cycles per second) processors will be available within the next 5–10 years. This will make the digital photography process almost as fast as the speed of light.

Many of these new technology devices are so small that it takes an electron microscope to see them. For years we have heard the term "nano technology" mentioned in Star Trek, and now it is a reality. Chips that are smaller than a quarter provide digital cameras increased resolution and quality.

It seems every time you look there are new digital cameras entering the marketplace. Even digital film cards that are used to store data are technology marvels, with their microscopic circuitry and RAM in a package smaller than a matchbook.

There are so many inkjet printers and papers available now





## Anything In



## Anything Out

Left: Digital Dry Film Processing from Applied Science Fiction. Black & white and color film is scanned with the benefit of wet processing. Chemical waste is the result and digital image files are created on a variety of storage devices.

Below: The new type of digital camera no longer has the look of traditional film cameras.

Below Center: New hybrid technology allows photographers to preview images taken on APS film.

Below Left: Compare the compact flash card on the left and the same amount of 35mm film on the right.



that it would take a catalog larger than this magazine to list all of them. The speed, low price, and improved quality of these devices is giving traditional photo printing some competition.

The biggest technology growth in photography is with the hybrid technologies. These devices incorporate the best traditional and digital photography has to offer into one product. The option of using CRTs or lasers to expose traditional photographic paper has always been popular with many larger photo labs. This process incorporates the digital editing capabilities of computer systems yet still uses photographic print processors for output. This is a big help in extending the life of your equipment purchases.

Some of the most impressive hybrid technologies come from a company appropriately called Applied Science Fiction. Their ICE technology used in film scanners is nothing short of incredible. Using special software and hardware, scanners equipped with ICE can remove scratches on the fly as the images are scanned. A bonus is that the grain is smaller and the image is sharper. Talk about the best of both worlds!

In another effort to keep film in photography's main stream of photography, the company is also working on a new Digital Dry Film

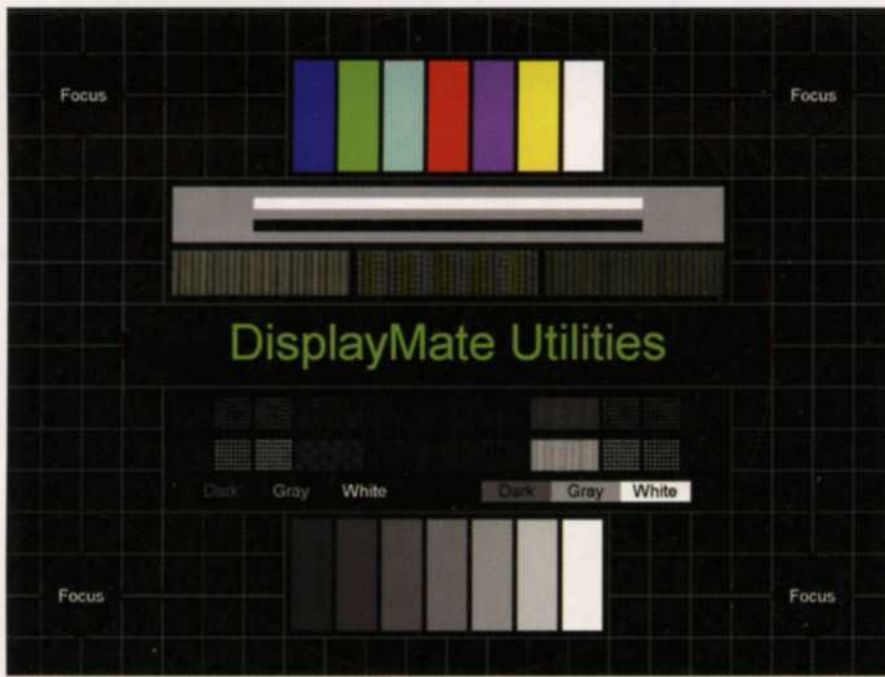
Process. It will digitize black and white or color negative film directly into a digital format without wet processing of the film. There is no chemical effluent, and the silver can be fully recycled. Besides prints, the output of this process is a final CD or DVD, for the data storage.

We always laughed at those television programs that showed images being enlarged and enhanced to zero-in on an elusive villain captured on film. The image always appeared clearer and sharper than the original 35mm image. Now technology from The Altamira Group called Genuine Fractals Print Pro really makes it happen. This software can take a digital image, from either a digital camera or film scanner, and process it to provide image quality higher than the original.

There is a down side to some of the new software advancements. Manufacturers are constantly coming out with new versions and often they are not backwards compatible. We used to recommend keeping older versions of products on CD, but that seems difficult to do in today's photo labs. We have even noticed that as the number of file compression formats tops one hundred, there are no machines able to decipher them all.

One of the longest lasting digital technologies, the CD is even





Left: Color management gets a boost with both software and hardware that balances scanners, monitors (in this case), editing programs and output devices.

Above: The pictureCD is still going strong. The data DVD is the next logical step in this technology.



One of the biggest trends in the lab today is the hybrid printer, like the Noritsu (left above) that uses both digital and traditional printing technologies. Printers such as the Kodak large format inkjet (above) are becoming the norm in today's digital lab. The Minolta multi-format scanner (left) can digitize almost any film format.



starting to give way to the newer DVD data format. Who would have ever thought that 650 megabytes of data capacity on a storage device was not enough? We remember a few years back when it took multiple diskettes to install programs. Now we are starting to see programs so big that it takes several CDs to install a program.

So just where is photography headed? Thanks to these new digital directions, speculation is only limited by your imagination. Years ago, before the digital age, we asked this question of our students at Brooks Institute of Photography. They looked into their crystal ball and speculated that camera lenses would have no glass, as the light would focus using a magnetic field around the circumference of the lens. They also thought that cameras would be so small that they could go through blood vessels as

shown in the classic film "Fantastic Voyage." Dick Tracy watches would enable you to take and transmit pictures as well as sound. The ideas sounded absurd then, but now they are reality or at least within the realm of possibility.

The whole idea of fast changing technology can be quite overwhelming. We know several older professionals who don't want change, and would rather quit. Not everyone loves changing technology, but like it or not, it is an integral part of photography today. If you want your lab to continue to function in this century you will have to remain knowledgeable about these new technologies and keep an open mind. ●

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