

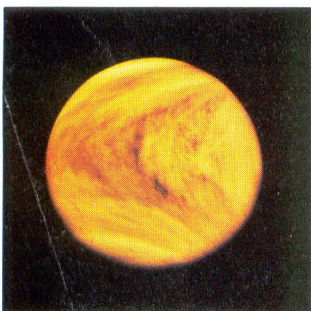
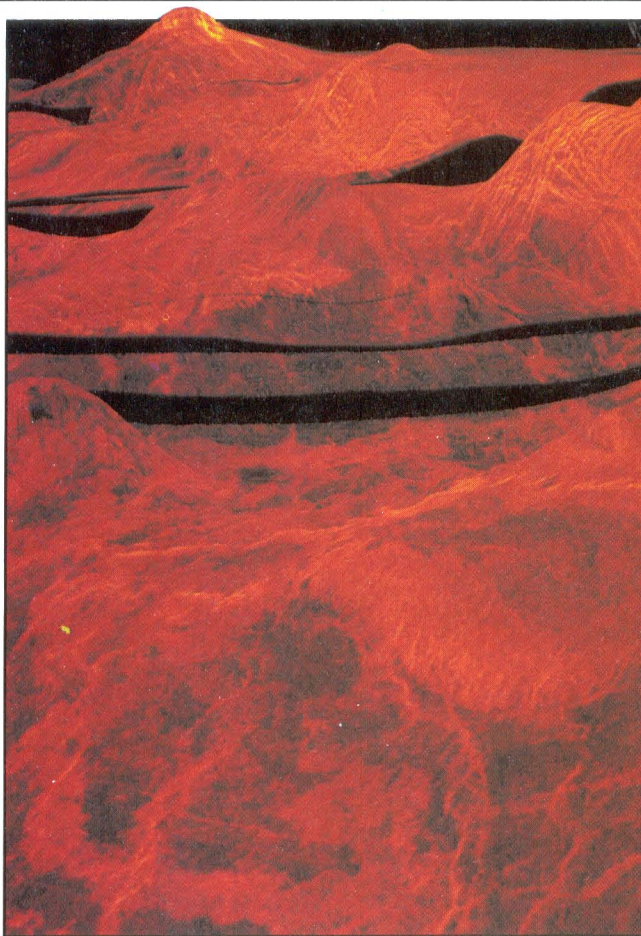
NOTES FROM EARTH

FLAT VENUS SOCIETY

It seems like a nice place to visit, especially if you like the color orange. It also seems to be a place of towering mountains, punctuated by deep craters, and often cut by even deeper canyons. At least, that's what Venus looks like to anyone who has seen the dazzling images taken by the Magellan spacecraft.

But appearances can be deceiving. David Morrison, chief of the Space Science Division at NASA Ames in California, has put out a call for a "Flat Venus Society." Though it may not be the same as when Christopher Columbus's contemporaries believed the Earth was flat, it is a humorous way of reinforcing the realities between the planet and its latest images. "The 3-D images and video flyovers [of Venus] have a vertical exaggeration of 23 to 1," says Morrison. "It is equivalent to turning the gently rolling plains of eastern Colorado into the Front Range of the Rocky Mountains."

That is not to say that all of Venus resembles the rolling plains of the American Midwest. Mountains such as Maat Mons tower more than five miles above the planet's "average radius" (the Venu-



sian equivalent of "sea level"), and the impact crater Cleopatra is around a mile and a half deep. But for the most part, Venus is a geological cue ball—with 80 percent of the surface lying within one-half mile of the planet's average radius. "In fact, most planets are pretty flat," says Morrison. "You get a sense of steepness and vertical relief when you're an ant on the ground, but from an orbital perspective, most of it goes away."

There is a good reason for enhancing the surface features of Venus and, as usual, it has to do with planetary science. "The results help

scientists look at correlations, and view the scene from a different perspective to get a better feel for what's there," says Steve Sanders, the Magellan Project Scientist at the Jet Propulsion Lab. "For example, in order to see the Sif and Gula Mons [volcanic] region as a broad rise, you have to really emphasize the topography. Then you can see its relationship and similarities to hot spot rises and shield volcanoes on Earth."

Anyone hoping to get a "flat" view of Venus won't have long to wait. Additional data being collected by Magellan will soon be analyzed and combined with

previous data, resulting in high-resolution maps with little or no exaggeration. By then, all of us will know enough about our sister planet to join the Flat Venus Society.

—Patricia Barnes-Svarney

TWINKLE NO MORE

"Twinkle, twinkle, little star," the children's song goes, but a team of astronomers at the University of Chicago will eliminate the twinkling of stars, a bane to Earthbound observers, using an instrument designed for the Strategic Defense Initiative. The device, originally built to help lasers slice through the atmosphere and destroy incoming missiles, will offer the first clear look at stars and planets from the ground.

Twinkling is caused by the Earth's constantly churning atmosphere. Varying temperature layers and wind patterns cause a continuous shifting of starlight as it passes through the layer of air surrounding our planet. Because of this turbulence, resolution seen through Palomar Observatory's 200-inch telescope in California would be no better than that seen through a six-inch backyard telescope. Crystal-clear pictures of stars were not possible until astronauts took im-

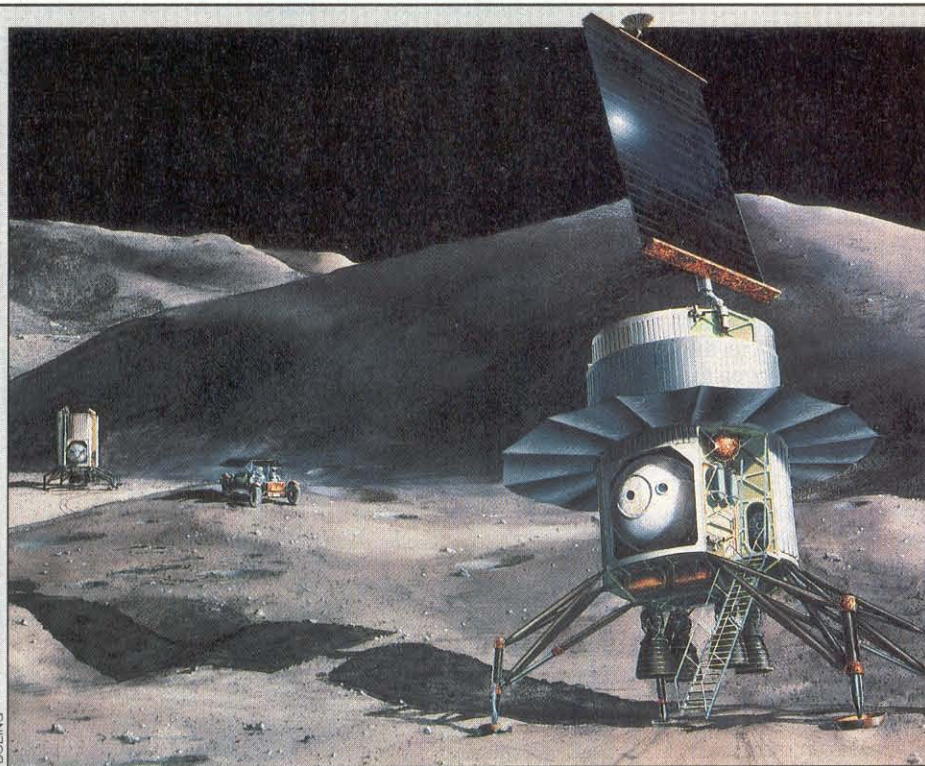


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correct almost all of the twinkling, offering a unique look at stars. When the device is installed the group plans to look for planets and clouds of dust surrounding bright stars. The astronomers hope this information will help clarify questions about planetary formation. The group is also building a high resolution spectrograph to be used in conjunction with the SDI device to study the atmospheres and internal structures of stars.

None of this means, however, that space-based astronomy is necessarily going to be a thing of the past. "This instrument is limited and will not make Hubble obsolete," Kibblewhite says. "We can only observe planets and bright stars and a few other objects with bright stars nearby. But it will show us detail that is obscured because of Earth's turbulent atmosphere. Most of all, however, it will give us more information about the structure of the atmosphere. We hope to develop adaptive optics into one of the most powerful tools for astronomy yet."

—John R. Williams



Camping trips just aren't what they used to be. Engineers at the Boeing Defense & Space Group in Huntsville, Alabama, have designed an automated "lunar campsite" that could be launched from Earth as early as the year 2000. Based on technology that Boeing is developing for Space Station Freedom, the campsite would provide successive crews of astronauts with a habitat and airlock, as well as utilities such as power, communications and life-support systems. Astronauts would live and work in the pressurized module for up to 45 days, during which time they would explore the lunar surface, set up science experiments and build permanent lunar facilities.

G A L A C T I C E V E N T S

July 16 - 24—"Spaceweek 1992." A weeklong celebration of space, held every year to commemorate the first Apollo lunar landing. This year's theme is: "Beyond Discovery: Opening New Worlds." It reflects the 500 years since Columbus first visited the new world and the 20 years since the last explorers left an even newer world, the Moon. For information about the many events

planned around the country, write to: Spaceweek National Headquarters, 1110 NASA Road One, Suite 100, Houston, TX 77058, or call (713) 333-3627.

August 28-September 5—Washington, D.C. "The World Space Congress." The first event held jointly by the International Astronautical Federation (IAF)

and the Committee on Space Research (COSPAR). Dedicated to International Space Year, the nine-day symposium will bring together at least 3,000 space experts and will feature over 100,000 square feet of exhibits, representing advanced space and technology concepts from space-faring nations. Registration deadline is July 15. For information, call (202) 646-7569.