

SOLAR SEEKERS

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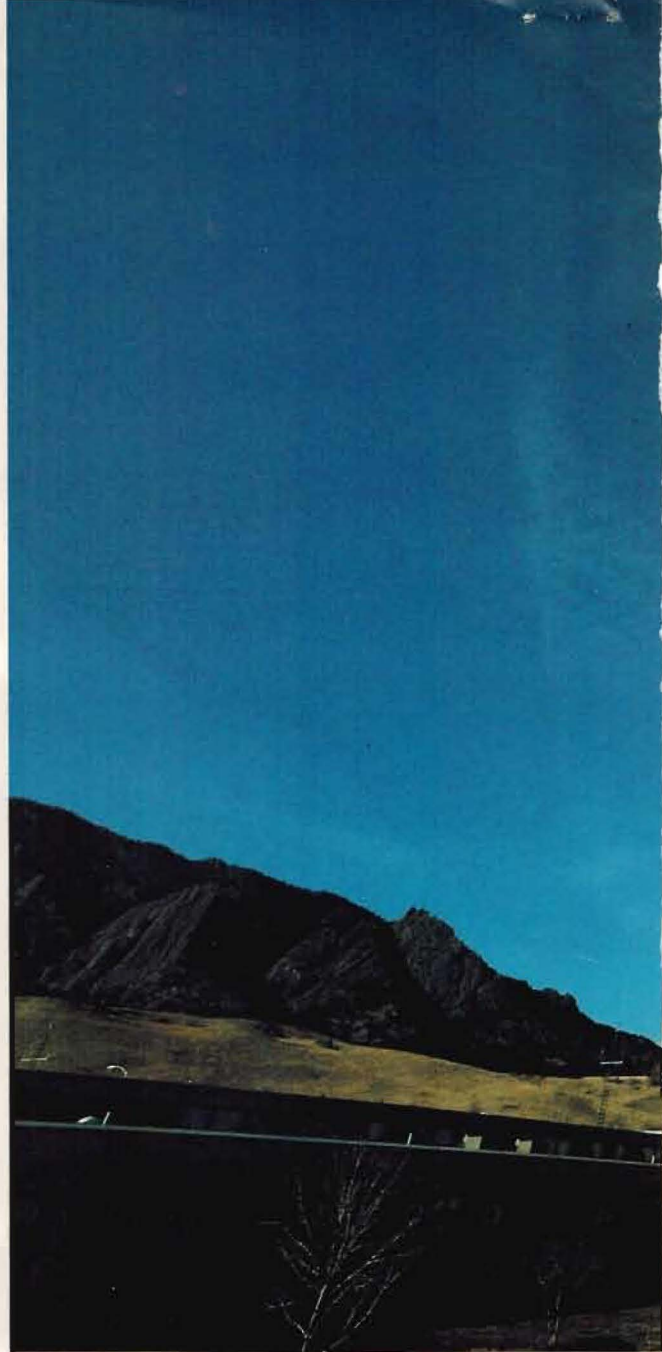
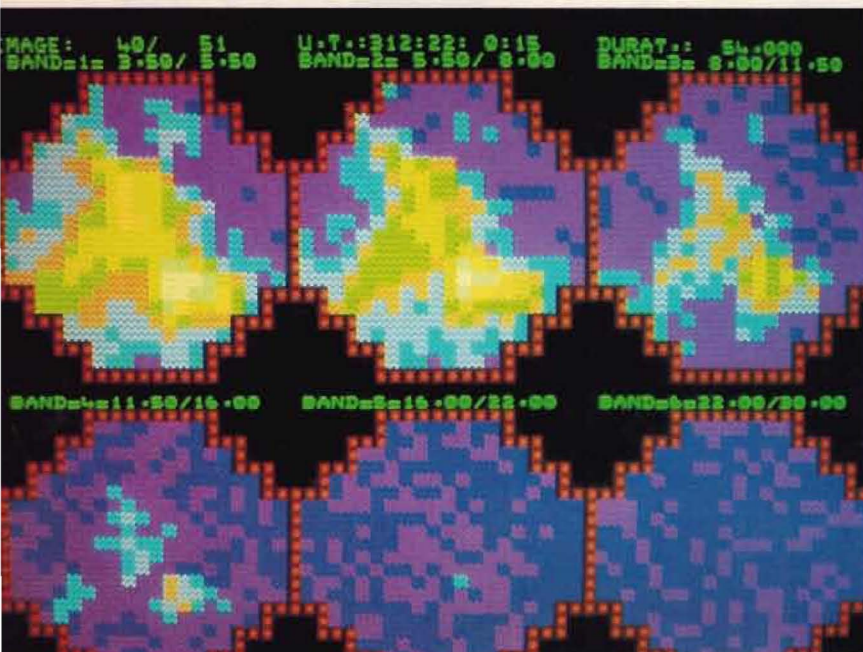
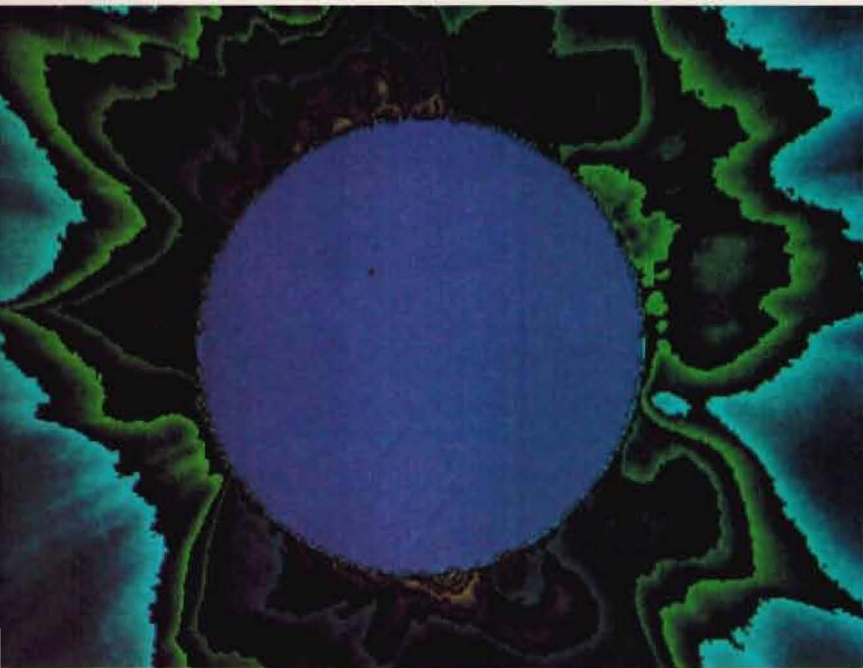
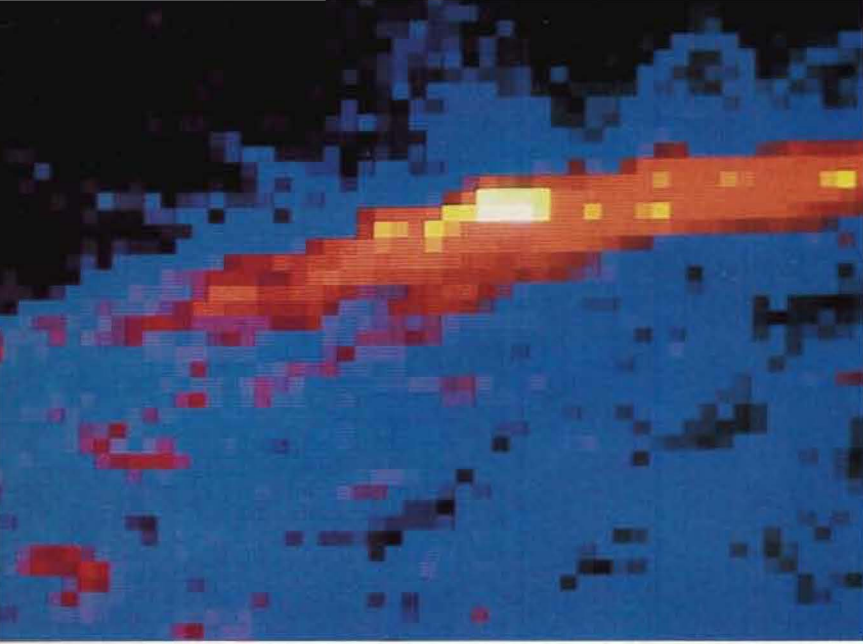


In the cosmic scheme of things, the sun is just another middle-aged, yellow dwarf star that smolders in the outer reaches of the Milky Way. But when viewed close up with the multispectral eyes of the Solar Maximum Mission Satellite, the sunscape bursts forth in a fireworks show, its corona (above) unveiling some of the stellar secrets in a palette of computer-generated color.

Using such exotic equipment as the Solar Max satellite, launched to study the sun during the recent peak of sunspot activity, and a small arsenal of mountaintop solar

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Solar Max's digitized view (top) of a solar flare; the satellite's occulting disc blocks out the sun's bright face (middle), revealing the hot and tenuous coronal gases that extend millions of miles outward; X-ray emission (bottom) during the birth and death of a solar flare. Meanwhile, back on the ground (right), solar scientists, such as Gary Heckmann, at the NOAA Patrol Telescope, in Boulder, Colorado, maintain their perennial vigil over our closest star. Previous page: Arizona's Kitt Peak solar telescope.



observatories, astronomers have been keeping a faithful vigil over this seething nuclear furnace for decades. And at last their patience is paying off. The last ten years of solar research has shown just what a mercurial personality the sun has: that it "breathes," that is, expands and contracts; that it resonates like a giant bell; and that quite suddenly, in a matter of days, it can dim its radiance by a tenth of a percent—a particularly worrisome discovery since it is estimated that an extended 1 percent drop could plunge the earth into an ice age.

Most recently solar astronomers from the National Oceanic and Atmospheric Administration (NOAA) and elsewhere have discovered rivers of magnetism coursing around the sun. It's believed that when these magnetic rivers punch through the surface, sunspots appear as great looping arches of flame.

The final chapter on solar astronomy is not written, but solar scientists are not pressed for time. The sun is not expected to burn out for several billion years. ☐

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