

# OECD



**ART OF THE STATE**  
The Kitchen Center for Video and Music  
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## ART OF THE STATE

SPACE FORCE, an operation of the Ocean Earth Construction and Development Corporation, OECD, presents an installation of the state of the art in earth monitoring.

It therefore begins a sequence of inquiries into space technology generally and its appropriation by human consciousness.

Earth monitoring from space is a high-technology form of landscape rendition. As visual researchers, artists can assist in advancing such landscape rendition to a pliable and expressive means of visual communication. Earth monitoring, like most space-vehicle imaging of planetary bodies, involves an elaborate array of sensors, digital data systems, and eventually a mathematically-programmed display of meaningful colors, and it could therefore be seen as part of the general evolution of art.

Now, major questions have arisen as to how to display the earth-monitoring data, what colors to use, what contrasts and field-intensities to employ, what images overall to effect for impact and understanding: altogether, how to organize information through time in a two-dimensional multispectral surface subject, in video at least, to changes through time. The objective is communication; the task is to build a language. This could be considered as a color language, a field density-distribution language, a display language, a visual language.

As The New York Times reports, there is now a "data glut" from earth-monitoring satellites. The chief question is how to make the data usable to intelligent observers. Scientific American remarked, "The eye-brain system will need help." Although the apparatus of image production is vast and astounding, the ultimate task remains one of communicating to a perceiving human with his or her own image-processing system, the eye-brain. Numerical records of data can be accumulated, but they cannot be meaningfully processed by humans except, chiefly, through images. As Remote Sensing of the Environment argues, "An image is, of course, the most efficient way to convey a large amount of information to a human operator."

SPACE FORCE feels that questions on image-making and communication raised by space scientists can be answered effectively through consultation with artists. It feels compelled to respond to these concluding statements in Remote Sensing of the Environment:

Additional research is needed in three areas: (1) determining which wavelengths of the electromagnetic spectrum are most useful for identifying each earth resource . . .; (2) determining which color combinations, of the many that can be used in producing image enhancements, are most easily and accurately discerned by the image analyst; and (3) determining in representative instances the net gain, if any, resulting from the use of such image enhancement techniques.

It is concluded that a great deal of work must be done not so much with the image-processing and production hardware as with the image-processing software--the programs by which intelligible color displays convey a great deal of information in a brief period of time. The "image analysts," or viewers, are now inundated with very often incomprehensible imagery, and it seems appropriate to call on artists to begin working with the imaging systems.

Art history suggests the trend. Four hundred years after the beginning of the Renaissance, the pictorial inventions of the Renaissance were mechanized and made automatic with photography. Since then, artists have undertaken new researches. Pointillists determined how to render an image with points of color, much like the pixels in digital-data imaging. Futurists and Suprematists extolled aerial photography and tried to create in paintings the sensation of looking down, upon a field, rather than into a box-space. The Futurists proceeded to call for organization of color and "lines of force" in "force-fields," and they theorized that a motile, flexible medium could render changes in color and perception of color through time. This medium would be more elastic and dynamic than cinematography: it is present now, in the computer displays for satellite digital data, and in video. Through the 50s and 60s, field-theory became a dominant concern, particularly in Europe, and in the 70s there emerged, in the US and UK, color-field studies through time conducted solely in film, video and computer console displays. While these progressions in artistic inquiry have occurred, meantime the camera has been perfected to such an extent that it has become a video or photograph image scanning instrument, notably in Landsat and other earth-observation systems, and it seems natural that visual researchers would soon want to gain hands-on access to such an elaborate instrument. Landsat has been said to be the "most important photographic experiment in history": it would follow that it can become a basis for an important experiment in art history.

Scientists have written that there are "major weaknesses in the philosophical underpinnings of remote sensing, which must be constantly borne in mind when working in the field." We of SPACE FORCE submit that some of those underpinnings can be furnished by art history, and with that the artistic and scientific inquiries into the nature and representation of vision. As much as we rely on "Futurist Fotodinamisme" and "Aerial Suprematism" for our philosophical/art historical underpinnings, so we also rely on scientific views like Dr. Edwin Land's (Polaroid) "Retinex Theory of Color Vision" and Dr. Gunnar Johansson's "Visual Motion Perception". Further, in our analysis of visual perception relative to natural phenomena and the function of art as a visual language, we rely on scientific writings by biologists, psychologists and such color-theorists as Josef Albers and Goethe. SPACE FORCE is now discussing color and image perception through time and in fixed frames with eye-brain researchers at The Rockefeller University. Altogether, we believe that our own intuitive actions and responses to the volume of visual data and various theories of visual display might expand the now limited discipline of remote sensing into a common visual language of video and photographic expression. We believe that our efforts and our interactions with scientists already might indeed help make remote sensing, the standard method of spacecraft-borne imaging, become integral with the evolution of visual art.

SPACE FORCE is confident that as artists experiment with the visual and informational wealth of remote sensing systems, such systems will become part of the culture, and remote sensing itself will become a sophisticated, expressive and powerful means of communication.