

**Techniques of the Environmental Observer:  
India's Earth Remote Sensing Program in the Age of Global Information**

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## **Abstract**

This research examines the emergence in India of earth remote sensing (ERS), a principal medium for environmental analysis, communication, and policy-making. ERS—the science and “craft” of analyzing images of terrestrial phenomena collected by aircraft or satellite—constitutes an information technology whose predominance in environmental discourse has grown continuously since first proposed for such applications by American researchers in 1962. Raising many thorny issues in information access and control, the use and popularization of ERS has intensified dramatically since the mid-1980s. In Westernized discourse (both popular and expert), space research and industry are often depicted at a double-remove from the so-called “developing world,” where exotic technologies and esoteric goals are overshadowed by patent human needs and a lack of basic infrastructure. Yet advocates hail the utility of ERS in socially relevant applications, and India has amassed upwards of five decades of experience in space, with systems and products rivaled today only by those of the United States and China.

A multi-sited ethnography of a nascent visual medium, the dissertation triangulates on its topic by tracing three analytical threads: 1) a diachronic analysis of Indian ERS satellites as an allegory of statehood and participation in the global present, 2) a synchronic analysis of ERS imagery as a discursive artifact and global information commodity, and 3) an analysis of interpretive practice as observed through a single class of Indian and foreign students at the Indian Institute of Remote Sensing (IIRS), considered here as an “interpretive community” of environmental experts. The dissertation is the result of four years of research with ERS students, faculty, researchers, users and administrators in the U.S., the U.K., Turkey and India. In particular, I conducted nine months of ethnographic fieldwork in India in 2002 and 2005, the latter half of which was spent in participant-observation as an enrolled student at IIRS in the city of Dehradun.

I use Crary’s concept of “observational identity” to explain differences in the practice of environmental science and policy-making. In particular, the production and ordering of environmental knowledge, approaches to environmental problem-solving, and even the classification of phenomena as “environmental” are inseparable from historically and culturally-contingent transformations in subjectivity, including those effected through the broad discursive processes of modernization and develop-

ment. I compare, on the one hand, commonly optimistic accounts of ERS's revolutionary potential for environmental management and security, and, on the other, warnings of its limitations and dangers to socially just geoinformatics. Relying on Castells' dual concept of the "space of places" and the "space of flows" I suggest that the genuinely revolutionary dimension of ERS lies in its bridging or superposition of these two spatial orders, from land and "nature" to commerce and cyberspace. I finally outline how the realization of an "appropriate ERS" will depend both on the global architecture of geoinformatics systems and on innovations in ERS pedagogy.