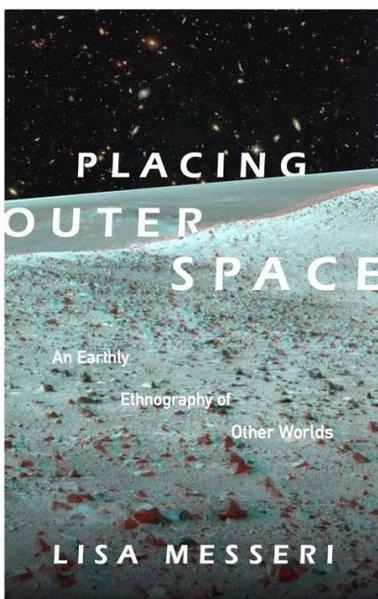


PLACING OUTER SPACE BY LISA MESSERI

REVIEWED BY JULIE MICHELLE KLINGER

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In late February 2017, NASA astronomers identified seven Earth-sized exoplanets in the habitable zone around a weak star about forty light-years, or 235 trillion miles, away. An exoplanet is one that orbits a sun other than our own. A habitable planet is located neither too near nor too far from a star so that it could have liquid water on the surface and may also possess an atmosphere amenable to human life. But according to Lisa Messeri, an anthropologist and Assistant Professor of Science, Technology, and Society at the University of Virginia:

Lisa Messeri, *Placing Outer Space: An Earthly Ethnography of Other Worlds*, Duke University Press, 2016, 248 pp., \$24 (paper) \$85 (cloth), ISBN 9780822362036

“ A ‘habitable planet’ is not a natural thing simply existing out there in the universe, waiting to be discovered; ‘habitability’ must be imagined, defined, and made important. For the exoplanet community, ‘habitability,’ a rather unglamorous word, has become shorthand for what astronomers consider the greatest discovery their field, and possibly humanity, can make (151).

The recent explosion of excitement across social and print media over the seven newly discovered planets corroborates Messeri’s assessment. Journalists and commentators estimated travel times to these new worlds, freely speculated as to whether they might harbor life, and even asked whether we should “invest in a backup planet for Earth.” In my own household, we were awestruck by video artists’ renderings of these new discoveries, even though we knew they were based on immense artistic license. Amidst the excitement of finding not just other planetary bodies, but *worlds*, it is important to take a step back and think about what we are doing and how we are thinking about what we are doing.

A host of scholarly and trade books encouraging people to think more deeply and personally about outer space have been published in recent years. Some, including K. Maria D. Lane's *Geographies of Mars: Seeing and Knowing the Red Planet* (2011), Daniel Sage's *How Outer Space Made America: Geography, Organization and the Cosmic Sublime* (2014), and *The Palgrave Handbook of Society, Culture, and Outer Space* (2017), edited by Peter Dickens and James S. Ormrod, deal seriously with the question of how we make sense of outer space through our imaginations. Among many other things, these works also show that how we imagine places in outer space then shapes the meanings and politics we ascribe to them.

Messeri's contribution lies in her focus on the role of *place* in astronomy and related fields. She finds that *place-making* is central to the work of outer space scientists to render the immensity of outer space, and research thereof, in terms that can be understood by policy-makers, funders, and the public. To the author, place:

“...is not just a passive canvas on which action occurs, but an active way of knowing worlds... even when place is not self-evident, as perhaps with invisible exoplanets, it is nonetheless invoked and created in order to generate scientific knowledge (190).

With this claim she builds on a long tradition of geographers (e.g. Tuan, 1977) to examine how people imbue space with meanings and embodied experience, thereby transforming space into place. Messeri's work investigates how place-making is both a cultural practice and a way of interpreting new forms of data that is in fact central to the scientific enterprise.

The author's evidence for this claim is drawn from fifteen months of ethnographic fieldwork among planetary geologists, astronomers, Mars scientists, astrophysicists, and computer scientists. With her undergraduate training in aeronautical and astronautical engineering from MIT, the author was uniquely prepared to be a participant and an observer everywhere from the laboratory to the mountaintop observatory and many places in between. Following these planetary scientists in their diverse settings, the author observed "how planets are changeable objects, made more meaningful and relatable with each new data set, scientific paper, and conversation" (5).

The author revisits debates on the relationship between space and place in geography, anthropology, STS, and critical social theory. Geographers have critiqued the distinction between space and place as reproducing false dichotomies between objective/subjective and masculine/feminine, and have proposed collapsing these dichotomies into the unified concept of space as a dialectical category. Anthropologists had long conceived of place as a static and bounded container in which culture happens. Similarly, STS scholars had paid attention to place insofar as it is where scientific practice occurs. In a slightly different vein, critical social theorists exhausted by the flattening tendency of *the global* and unsatisfied with the apparently limited scope of *the local* proposed theories of “planetary” to describe our relationship to Earth (Spivak, 2003).

The book skillfully draws upon and offers contributions to these fields. Looking at how place is used to generate feelings of familiarity toward dizzyingly distant objects in outer space transforms the theoretical possibilities of the term. Using place to understand outer space, in the author's view, frees it from associations with the local, and thereby frees it from the rather uninteresting status of being simply where culture or science *happens*.

Anthropologists critical of the epistemological divide between *home* and *field* will find new practices to think with. STS scholars will be interested in the author's examination of how place figures into scientific work: it is "a resource scientists use to create their scientific objects as such" (15). Instead of being counterpoised to general or global space, with Messeri, place troubles the relationship between local and global in ways that complement the intellectual projects of planetarity.

Each chapter of the book examines a different aspect of place-making—Narrating, Mapping, Visualizing, and Inhabiting—in different scientific and cultural contexts. Chapter 1 joins crews at the Mars Desert Research Station as they narrate the Martian landscape through their simulations in the Utah desert. Researchers draw freely on their own disciplinary and cultural perspectives to interpret the landscape as both Martian and Earthly, thereby transforming both into places animated with knowable histories, relational meanings, and cultural values. The broader insight here is that all knowledge—even knowledge about outer space—is situated and place-based.

Chapter 2 explores how teams at NASA Ames in Silicon Valley work to produce maps of Mars. Their objective is to enable the public to see Mars as an exciting and inviting world, as many scientists do. There is a political economy to this: “Describing Mars as a site of collective exploration calls forth a broader engaged public that, ultimately, ensures funding for NASA and jobs for those who work with Mars data” (83). Cartographic representations are not neutral. They reflect the values and priorities of the community that creates them.

Chapter 3 looks at efforts to visualize places for which we do not have photographic images. In Sara Seager’s lab at MIT, students develop norms of seeing exoplanets, which are only “visible” in abstract data representations. Here we see the conflation of the political economy of research with personal aspiration, professional development, and scientific ideals: “Astronomers ground their professional identities by making what they study seem less like ephemeral, distant objects and more like intimate, recognizable worlds” (148). Messeri describes the process as “outer space” becoming “outer place.”

Chapter 4 examines the practice of inhabiting. The author uses this terms in two ways: as astronomers use the term “habitability,” introduced above, and as the practice of physically inhabiting one’s workspace. As increasing automation decentralizes the mountaintop observatory as the “preeminent epistemological place for astronomical practice” (150), scientists find new forms of sociality. The place of the observatory is also one of multiple habitations over time. In conversation with Peter Redfield’s *Space in the Tropics* (2001), the author explores how observatories are “situated in a landscape with multiple histories and ties to the local” (165), including labor, violence, and coloniality. Interestingly, in these contexts where astronomers were literally scanning the sky for new worlds, Messeri observed little talk of other planets. That work of envisioning and place-making among the stars was reserved for after-hours musings among the astronomers, and for subsequent analysis in the laboratory far from the mountaintop.

In scientists' quest to find other places in the cosmos where humans can *be*, the author sees a desire to connect with Earth as our home planet. The politics of this are complicated—how are we to interpret the quest to find other planets in light of deepening social and environmental crises on Earth? Does using place to make remote worlds seem more accessible than they likely are dupe us into thinking that a “Backup Earth” will save us from ourselves? What are the ethics of this? The author does not address these questions. Instead, Messeri chose to take seriously the conviction among her interlocutors that exploration is an unquestioned good, and focused more on their practices than the politics thereof. The result is a rich account that, appropriately, generates a host of very big questions.

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