

‘This lavishly illustrated volume makes a major contribution to our understanding of the Space Age. It expands historiography beyond the superpowers and radically reconceptualizes outer space. *Militarizing Outer Space* obliges us to think of “outer space” as a zone beyond the confines of the earth, produced by cultural, political and technological interventions that embed it in earthly projects and respond to a multitude of hopes and anxieties. Space is not a remote, inaccessible realm, but a nearby “non-space” that can be populated by technological infrastructures advocated by the military and appropriated by the market, colonized by earthlings fleeing Armageddon or the disasters of climate change, and filled with utopian aspirations or dystopian fears, but always appropriated by multiple stakeholders who imagine new worlds and ways of being in response to critical contingencies in everyday life. Readers will discover new and unexpected features of their life worlds presented in outstanding essays framed by a superb introduction and conclusion.’

—John Krige, Georgia Institute of Technology, USA

‘In this very fine last part of a trilogy that meritoriously orbits around the concept of “astroculture”, one is reminded of the centrality of military technologies to modernization. The fourteen fascinating chapters offer a rich and welcome contribution to the history of outer space and globality. Popular imaginaries are tied to promises of supremacy, while the fuzzy boundaries between civilian and military use are interrogated. In a global age we would be wise to re-visit these manifold projections and dreams of space technology and its cultural repercussions, as they have much to teach us about the present. A very important book.’

—Nina Wormbs, KTH Royal Institute of Technology, Sweden

'Militarizing Outer Space is a compellingly original collection of essays that breaks out of the conventional mold of interpreting space races and arms races narrowly as products of the Cold War. Long before we could reach it, humans imagined space as a realm of war populated with laser-wielding heroes, orbital fortresses and extraterrestrials ripe for conquest. From the moral thought of C. S. Lewis to Ronald Reagan's Strategic Defense Initiative, the authors offer a deeply researched analysis of the connections between security, fantasy and technopolitics. Although no war has ever occurred outside the earth's atmosphere, this volume convincingly shows how military anxieties more than a desire to reach the stars drove the development of spaceflight. For anyone interested in the rise of militant astroculture and actual warfare, *Militarizing Outer Space* is a must-read.'

—Joe Maiolo, King's College London, UK

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ROCKET STARS

Astro-cultural Genealogies in the Global Space Age (forthcoming)



Alexander C. T. Geppert
Daniel Brandau
Tilman Siebeneichner
Editors

Militarizing Outer Space

Astroculture, Dystopia and the Cold War

European Astroculture
Volume 3

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‘Space is a war-fighting domain, just like the land, air, and sea,’ US President Donald Trump declared in March 2018. ‘Space Force all the way!,’ he tweeted a few months later, reaffirming his intentions to establish a new branch of the military designated to secure American hegemony beyond earth. Instantly noting how closely Trump’s self-proclaimed ‘great idea’ resembled Ronald Reagan’s 1983 Strategic Defense Initiative (SDI), commonly remembered as ‘Star Wars,’ critics across the political spectrum were far from convinced. What had started as a belligerent fantasy both then and now, they feared, effectively fueled the ongoing militarization of outer space. Massively underestimating the technological challenges of missile defense, both presidents seemed to favor Hollywood’s striking imaginings of space wars instead, in wide circulation long before the beginning of the Space Age.¹

Trump’s overblown rhetoric evoked a long-established arsenal of images and artifacts, media and practices aiming to assign and extract meaning from outer space. Fantasies of space war both between nations on earth and against alien worlds have captured the imagination of artists, engineers, intellectuals and politicians, and spurred their extraterrestrial agendas throughout the twentieth century. Because images and notions of violence and conflict figure prominently in all variants of astroculture around the globe, the need for a volume on the military underpinnings of outer space was apparent long before the 45th US president gave the topic its most recent twist. Early versions of most contributions were presented at an international symposium *Embattled Heavens: The Militarization of Space in Science, Fiction, and Politics*, convened by the Emmy Noether research group ‘The Future in the Stars’ at Freie Universität Berlin in April 2014. At the time of Trump’s space war 2018 twitter barrage, publication of this volume was well under way, leaving both editors and contributors wondering what to make of the topic’s regained currency and unexpected relevance in day-to-day politics.

Militarizing Outer Space constitutes the third and final volume of the *European Astroculture* trilogy. While *Imagining Outer Space*, the first volume, set out to establish and contour the historical field of ‘astroculture’ largely in the 1950s and 1960s, *Limiting Outer Space*, the second volume, zeroed in on a single decade, the post-Apollo crisis-ridden 1970s.² Given the interplay between military and civilian rationales in the history of space-flight, notions of crisis and confrontation also serve as a starting point for this third volume. Unlike its two predecessors, the book extends the collective inquiry into the early 1980s, up to Ronald Reagan’s ‘Star Wars’ scenario and beyond. Constituting a preliminary climax of space militarization, SDI heavily influenced Cold War dynamics of deterrence and détente, with apocalyptic scenarios of imminent doom looming large in the popular imagination. The underlying imaginaries, however, were much older. A closer look reveals the extent to which they were grounded in early Space Age utopias. Popular notions of space exploration and conquest were more than mere rhetoric, being deeply intertwined with military strategies, technoscientific ambitions and social fears throughout the twentieth century. Scrutinizing belligerent imaginaries, popular narratives and widespread space war scenarios, from early European astroculture to Star Wars, *Militarizing Outer Space* links the cultural history of outer space more explicitly to conventional Cold War politics than the two preceding books in this trilogy. At the same time it challenges the conventional assumption that the Cold War context is a both necessary *and* sufficient framework to explain the making and ever-intensifying militarization of outer space.

Coming to terms with a subject as vast as outer space could easily have been overwhelming for a research group as small as ours, and we are enormously grateful to everyone who helped us not get lost in space. This includes, first and foremost, the Deutsche Forschungsgemeinschaft (DFG) which generously funded the Emmy Noether research group ‘The Future in the Stars: European Astroculture and Extraterrestrial Life in the Twentieth Century’ during the six years of its existence from 2010 through 2016.³ Group members Jana Bruggmann, Ralf Bülow, Ruth Haake, Gilda Langkau, Friederike Mehl, Tom Reichard, Katja Rippert and Magdalena Stotter were there to make it happen. Conference speakers, commentators and participants who shaped the outcome even if their contributions could, alas, not be integrated in this volume include Colleen Anderson, Norman Aselmeyer, Jordan Bimm, Thore Bjørnvig, Katherine Boyce-Jacino, David Edgerton, Greg Eghigian, Danilo Flores, Paweł Frelik, Bernd Greiner, Jörg Hartmann, Matthias Hurst, Joe Maiolo, Markus Pöhlmann, Robert Poole, Alex Roland, Diethard Sawicki, Isabell Schrickel, Kai-Uwe Schrogl, Eva-Maria Silies, Simon Spiegel, Dierk Spreen and Patryk Wasiak. Anonymous reviewers offered invaluable criticism and pointed advice.

As with the two companion volumes, Gösta Röver's brilliant designs form the basis of the book cover. Once again, photographer Hubert Graml helped prepare the more than 50 illustrations for publication, many never before shown and arguably never in such a carefully curated context. As numerous times before, Katja Rippert assisted with her excellent Russian language skills. At Palgrave Macmillan, we are indebted to Molly Beck for overseeing the long and complex publication process of the entire trilogy with calm and vigor. Meanwhile, cooperating with project manager Kayalvizhi Saravanakumar and her team of professionals was as delightful as prior. Audrey McClellan produced yet another index imbued with her impressive mixture of perceptiveness and attention to detail. We would also like to extend our gratitude to those who came along later, including Michel Dubois, Grégoire and Janine Durrens, Michael Najjar and NYU Shanghai's Xinyi Xiong. Last but not least, we are once again profoundly indebted to Ruth Haake. Without her infectious optimism and indefatigable assistance in securing obscure copyright permissions, tireless and astute fact-, manuscript- and footnote-checking, both this volume and its editors would be in very different shape. Although constituting the last volume in the *European Astroculture* trilogy, *Militarizing Outer Space* does not purport to be the final say on past space futures, either in Europe or among the stars. We are too well-adjusted a crew to abort our mission midstream. Hence stay tuned and keep watching the skies. Klaatu barada nikto.

New York and Berlin
July 2020

Alexander C. T. Geppert
Daniel Brandau
Tilman Siebeneichner

Notes

1. See Christina Wilkie, 'Trump Floats the Idea of Creating a "Space Force" to Fight Wars in Space,' *CNBC* (13 March 2018), <https://cnb.cx/2Xo2pre>; Donald J. Trump on Twitter, 9 August 2018, <https://twitter.com/realdonaldtrump/status/1027586174448218113?>; 'Trump in Space,' *New York Times* (27 July 2018), A18. All Internet sources were last accessed on 15 July 2020.
2. Alexander C. T. Geppert, ed., *Imagining Outer Space: European Astroculture in the Twentieth Century*, Basingstoke: Palgrave Macmillan, 2012 (2nd edn, London: Palgrave Macmillan, 2018) (= *European Astroculture*, vol. 1); idem, ed. *Limiting Outer Space: Astroculture after Apollo*, London: Palgrave Macmillan, 2018 (= *European Astroculture*, vol. 2).
3. A detailed conference program can be found at <http://heavens.geschkult.fu-berlin.de>. For comprehensive reports, see Norman Aselmeyer, 'Stellare Kriege,' *Technikgeschichte* 81.4 (2014), 371–8; Katherine Boyce-Jacino, 'Embattled Heavens: The Militarization of Space in Science, Fiction, and Politics,' *Foundation: The International Review of Science Fiction* 118 (2014), 96–100; Paweł Frelik,

“Embattled Heavens” Conference,’ *Science Fiction Studies* 41.2 (July 2014), 446–7; Ulf von Rauchhaupt, ‘Als der größte Großraum zum Schlachtfeld wurde: Die Raumfahrt zwischen Politik, Technik und Science-Fiction,’ *Frankfurter Allgemeine Zeitung* (16 April 2014), N3; Tom Reichard, ‘Battlefield Cosmos: The Militarization of Space, 1942–1990,’ *NASA History News & Notes* 31.3 (2014), 20–1; idem, ‘Embattled Heavens: The Militarization of Space in Science, Fiction, and Politics,’ *H-Soz-u-Kult* (8 August 2014), online available at <https://www.hsozkult.de/conferencereport/id/tagungsberichte-5496>; and Stephan Töpfer, ‘Krieg in den Sternen: Wie Konflikte auf der Erde unsere Vorstellungen vom Weltraum prägten,’ *Der Tagesspiegel* (13 April 2014), B6. For further information on the Emmy Noether research group ‘The Future in the Stars: European Astroculture in the Twentieth Century,’ consult <http://www.geschkult.fu-berlin.de/astrofuturism>.

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ABBREVIATIONS

ABM	Anti-Ballistic Missile
AFES	AG Friedensforschung und Europäische Sicherheit
AFRA	Arbeitsgemeinschaft für Raketentechnik
AGARD	Advisory Group for Aerospace Research and Development
ASAT	Anti-Satellite Weapon
ASTP	Apollo-Soyuz Test Project
ATV	Automated Transfer Vehicle
BBC	British Broadcasting Corporation
BDS	BeiDou Navigation Satellite System
BIS	British Interplanetary Society
BMD	Ballistic Missile Defense
CA	Canada
CAT	Computer of Average Transients
CCD	Charge-Coupled Device
CERN	Conseil Européen pour la Recherche Nucléaire
CH	Switzerland
CIA	Central Intelligence Agency
CNES	Centre National d'Etudes Spatiales
COSPAR	Committee on Space Research
CRV	Coordinate Remote Viewing
CSG	Centre Spatial Guyanais
DAG	Deutsche Astronautische Gesellschaft
DDR	Deutsche Demokratische Republik
DE	Deutschland
DEFA	Deutsche Film-Aktiengesellschaft
DFG	Deutsche Forschungsgemeinschaft
DGRR	Deutsche Gesellschaft für Raketentechnik und Raumfahrt
DIA	Defense Intelligence Agency
DK	Denmark
DLR	Deutsches Zentrum für Luft- und Raumfahrt
DoD	Department of Defense
DOS	Long-Term Orbital Station

DRG	Deutsche Raketengesellschaft
DVL	Deutsche Versuchsanstalt für Luftfahrt
EEC	European Economic Community
ELDO	European Launcher Development Organization
ELF	Extremely Low Frequency
ESA	European Space Agency
ESDAC	European Space Data Acquisition Centre
ESOC	European Space Operations Centre
ESP	Extrasensory Perception
ESRO	European Space Research Organisation
ESTEC	European Space Technology Centre
ESTRACK	ESA Tracking Stations
EU	European Union
EURATOM	European Atomic Energy Community
FAA	Federal Administration Agency
FDJ	Freie Deutsche Jugend
FGB	Functional Cargo Block
FOIA	Freedom of Information Act
FR	France
FTD	Foreign Technology Division
GfW	Gesellschaft für Weltraumfahrt
GNSS	Global Satellite Navigation System
GPS	Global Positioning System
GSOC	German Space Operations Center
IAC	International Astronautical Congress
IAF	International Astronautical Federation
ICBM	Intercontinental Ballistic Missile
IGY	International Geophysical Year
INSCOM	Intelligence and Security Command
IRBM	Intermediate-Range Ballistic Missile
ISS	International Space Station
IT	Italy
ITAR	International Traffic in Arms Regulations
JP	Japan
JPL	Jet Propulsion Laboratory (NASA)
KH-1	Keyhole-1
KSI	Information Return Capsule
LEO	Low-Earth Orbit
LEOP	Launch and Early Orbit Phase
LORAN	Long-Range Navigation
MAD	Mutual Assured Destruction
MBB	Messerschmitt-Bölkow-Blohm
MIDAS	Missile Defense Alarm System
MIT	Massachusetts Institute of Technology
MOL	Manned Orbiting Laboratory
MOU	Memorandum of Understanding
MRBM	Medium-Range Ballistic Missile
MSSS	Multi-Satellite Support System
MTR	Military-Technical Revolution
n.p.	No publisher/pagination

NASA	National Aeronautics and Space Administration
NASM	National Air and Space Museum
NATO	North Atlantic Treaty Organization
NICE	National Institute for Co-Ordinated Experiments
NMD	National Missile Defense
NORAD	North American Air Defense Command
NRL	Naval Research Laboratory
NRO	National Reconnaissance Office
NSA	National Security Agency
NTS-1	Navigation Technology Satellite 1
NVA	Nationale Volksarmee
OPS	Orbiting Piloted Station
ORD	Office of Research and Development
OSI	Office of Strategic Intelligence
OST	Outer Space Treaty
OTRAG	Orbitale Transport- und Raketen Aktiengesellschaft
OTS	Office of Technical Service
PL	Poland
RAND	Research and Development
SAGE	Semi-Automatic Ground Environment
SAM	Surface-to-Air-Missile
SAMOS	Satellite and Missile Observation System
SCOS	Spacecraft Control and Operations System
SDI	Strategic Defense Initiative
SDIO	Strategic Defense Initiative Organization
SDS	Strategic Defense System
SED	Sozialistische Einheitspartei Deutschlands
SIPRI	Stockholm International Peace Research Institute
SPADATS	Space Detection and Tracking System
SPASUR	Space Surveillance System
SRI	Stanford Research Institute
STS	Space Transportation System
TALOS	Tactical Assault Light Operator Suit
TCBM	Transparency and Confidence-Building Measure
TCP	Technological Capabilities Panel
THAAD	Terminal High Altitude Area Defense
TKS	Transport Supply Spacecraft
UCL	University College London
UFO	Unidentified Flying Object
UK	United Kingdom
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISPACE	United Nations Conference on the Exploration and Peaceful Uses of Outer Space
URDF	Unidentified Research and Development Facility
USA	United States of America
USAF	United States Air Force
USSR	Union of Soviet Socialist Republics
VfR	Verein für Raumschiffahrt
WEU	Western European Union

NOTES ON CONTRIBUTORS

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