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Editor's Note Volume 9 No. 1

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Editor's Note

This issue of *Space & Defense* builds on our initiative to explore broader questions of political economy on the technological frontier of defense policy. The lead feature by Armin Krishnan, "Attack on the Brain: Neurowars and Neurowarfare," lays the groundwork for a new specialty field of defense studies. In the world of engineering and technology, advances in brain mapping, information science, and nanotechnology have prompted a convergence of traditional research programs in biology, chemistry, materials science, and electrical engineering. This synthesis creates a crisis in the sense that investments we make now might bring a rich harvest of new products that spur economic development, revolutionize health care, and play an important role in expanding the quotient of human happiness during the twenty-first century; at the same time, as in the prominent cases of nuclear, cyber, and space technologies, devices for mastering a new domain, in this case the collective mind of an army or its sponsoring society, could lead to catastrophic conflict. Krishnan argues we have already reached the point where many staple concepts from International Security—offense, defense, deterrence, civil-military relations, crisis, and war—are quite relevant to neurowarfare. He urges us to apply our strategic reasoning now and with great care if the international community as a whole is to successfully manage challenges and reap the benefits of expanding neuro-technology.

Our second and third features continue our series of articles on the significance of space for developing countries. The previous issue of *Space and Defense* included a discussion of Argentina space, remarking on the steadfastness of that country's technological effort to build indigenous launch capability in spite of dramatic swings across elections in ideology of political leadership as well as Argentina's economic fortunes. In this volume, Gills Vilar Lopes, "Brazil Space: Military Dependency and the Case of the Geostationary Satellite for Defense and Strategic Communications," is not so sanguine about the future of Brazil's space program while

this rising power enters a period of political turbulence and stagnant economic growth. Lopes explores as a critical case Brazil's Geostationary Satellite for Defense and Strategic Communications (SGDC). For him, space becomes something of a political football as Brazil's civilian space agency (AEB) and its Ministry of Science and Technology (MCT) cannot muster the necessary fiscal or intellectual capacity to establish autonomy from Brazil space's Air Force (FAB) heritage. Certainly, military and civilian agencies must work together to move forward, but he notes that the "Strategic" qualifier of SGDC's satellite communications has as much to do with Brazil's national development as it does with strategic launchers for national defense. Brazil itself will survive current presidential scandals and eventually restore its growth in export revenues, but neither SGDC nor efforts to recover from the Alcântara launcher disaster of 2003 will amount to much until the government finds a way to reform its civil-military legacy on space.

Mónica Casalet's feature contribution takes us from Brazil to Latin America's other rising power, Mexico, in particular the fast growing, centrally located state of Querétaro, north of Mexico City. "Meeting Growth Challenges of Mexico Aerospace: The Queretaro Cluster" expertly dissects Mexico's effort at the regional level of analysis, working with Mexico's federal system of governance and drawing strength from high-level national support as well as city-based concentrations of talent. In a political context almost the obverse of Brazil's, Mexico's commercial sector seeks entry into the global aerospace market with only a very faint presence of home military demand for space products and services. At this time, Mexico's maturing democracy also wrestles with fast rising societal demand emerging from conditions of stark inequality (the "two Mexicos" thesis). Casalet argues that under sharp material constraints, institutional networking and soft connections among businesses, civil associations, multiple levels of government, and universities—anchored at the regional level—are far from epiphenomenal.

Indeed, they merit greater attention from analysts as a critical factor in international political economy & development, especially for multi-use industrial sectors on the frontier of knowledge & technology.

In addition to our peer-reviewed feature articles, readers of this issue will enjoy topical essays from the leadership of the Eisenhower Center at USAFA. Director Deron Jackson reviews a popular new primer on the international politics of space, *Crowded Orbits: Conflict and Cooperation in Space* (Columbia University Press, 2014), by Professor Clay Moltz of the Naval Postgraduate School, Monterey, California, and in the latest edition of Publisher's Corner, Ambassador Roger Harrison asks whether diplomats confronting today's challenges from rising powers can find positive inspiration for a SALT moment in space arms control.

Following our recent space panel at ISA-Atlanta, "Prospects for Peace on the Final Frontier," it is clear our journal, *Space & Defense*, is not alone calling for new thinking in anticipation of greater political and economic interaction, among both state and non-state actors, in increasingly crowded orbits. Professor Daniel Deudney, in Atlanta,

conjured the term "planetary politics" to remind us of how moves made as far away as geostationary orbit, at an altitude of some 23,000 miles, can have large-scale political effects here on earth. Rather than politics in a new domain, Deudney conjured us to think in terms of a tightly-coupled, highly interactive system of global actors on the surface expanding their menu of political options out to geostationary range. In addition to inviting readers to correspond with us regarding controversies raised by our articles, we at *Space & Defense* renew our call for papers that refine our perspective on planetary politics. If our readers are working new submissions that address space arms control, commercial-military alliances for national security, hypersonics, missile defense, cyber deterrence, and preventive commercial-military regimes for cyber security, we encourage them to send their contributions for peer review to the Eisenhower Center for Space and Defense Studies, U.S. Air Force Academy.

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