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Towards a More Crowded Heavens?

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TAYLOR MARVIN, APR 11 2013

Nearly a half-century after the United States put a man on the Moon, international interest in space exploration appears to be booming once again. Formerly restricted to the United States and USSR/Russia, human spaceflight ambitions are now voiced by a growing number of nations. Continuing its successful crewed space program, China ambitiously plans to put a human on the moon in the next decade and hopes to establish a lunar base. India plans to send a probe to Mars and one day put a human in space. Among others, Iran too at least nominally seeks to put an astronaut into orbit. Today more nations have the resources to pursue space achievements, but contemporary space powers remain unwilling to return space programs to the high priority they held during the Cold War-era Space Race.

During the Cold War, the US and USSR devoted vast resources towards their competing space programs, sums that paid for the first human in space, the Apollo Moon landings, and other spectacular, ground-breaking achievements. American and Soviet leaders justified their investment in peaceful space programs through the lens of superpower competition: achievements in space bolstered national prestige, status thought to attract previously non-aligned allies and directly affect the global balance of power.

Today, these security-from-prestige motivations are largely absent. Despite tensions between the two countries, the US-China rivalry is not comparable to the Cold War. The security situations of other aspiring space powers including India and Japan are similarly comparatively mild, and the link between national prestige and security is clearly perceived as weaker today than during the Cold War's bipolar global rivalry. However, while the political gains from high-profile successes in space missions may be less vital today, they remain significant: if successful, space efforts can valuably boost governments' status among both internal and international audiences. But despite the potential payoffs, space programs are risky, expensive, and carry enormous opportunity costs. This balance between space programs' prestige, high costs, and inherent uncertainty explains today's surge of national interest in space – national prestige concerns drive the ambitions of emerging spacefaring nations, but remain less motivating than during the Cold War.

As the security imperative of space-driven prestige has declined since the height of the Cold War, so have the investments governments are willing to make in space, even if the number of aspiring space powers have grown. During the Space Race both the USSR and US made civilian space programs a top priority. This isn't the case today. While the US and China are pursuing weapons systems able to operate in space, tangible investments in civilian space programs are more modest, despite both nations' lofty rhetoric. China's crewed space program is ambitious and so far successful, but compared to the Space Race is progressing leisurely.

Ultimately, national space programs are simply tools states leverage for a variety of purposes, not expressions of an apolitical human urge to explore. Consequently, modern national space programs can be broadly divided by their motivations, as well as their practical capabilities. In the first category are countries currently capable of crewed

spaceflight. Today the select club is limited to Russia and China, though the United States maintains a leadership position in the International Space Station program, is by far the most technically capable space power, and is expected to soon regain its own human spaceflight capability. All of these states' human spaceflight programs are primarily driven by national prestige and, to a degree, inertia. Just as nuclear weapons have been viewed as a legitimizing status indicator by the five permanent UN Security Council members, crewed spaceflight programs – which are significantly more exclusive than nuclear weapons – remain widely perceived as a signifier of great power status, a perception that has worked to Russia's benefit.

All other aspiring space powers have been unable or unwilling to muster the resources required for a human spaceflight program. While India has only articulated vague plans for crewed spaceflight, it –like China – undoubtedly sees it as a necessary if eventual step on its road to global power. However, India's economic and technological resources are significantly more contained than its eastern rival, a constraint that explains the slower pace of India's program.

Other aspiring space powers are restricted to considerably more limited ambitions. Even if international observers take Iran's aspirations to put an astronaut into space at face value, it's unlikely that internationally-isolated Iran possesses the necessary technical skills to build a functional crewed spacecraft or, more importantly, the funds to develop one. But the long-term viability of these programs is arguably unimportant. Iran's authoritarian regime utilizes real or faked space achievements as tools for satiating nationalist domestic audiences and bolstering regime legitimacy. Whether or not Iran ever puts a human in orbit is largely irrelevant to the program's goals: grandly articulated space ambitions is simply a tool to build regime legitimacy and domestic pride.

Similarly, both Iran and North Korea appear to use nominally-peaceful space launches as a cover for ballistic missile development. Not only publicly-acceptable cover to avoid international retribution, rockets intended for peaceful space programs share technology with ballistic missiles, allowing these countries to extract prestige value from military rocket development they would likely fund anyway.

How realistic these rising powers' space ambitions are remains open to debate, because their national space programs are limited by both practical and political constraints. It is also worth remembering how many space exploration goals are never met. The greatest bar to optimistic hopes for exploration are not what a nation *can* do but instead what it *chooses* to do, and this choice is inherently political.

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