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Geopolitical Cultures of Outer Space: The British Interplanetary Society, 1933-1965

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Introduction

British involvement in spaceflight has, in recent years, been the subject of increased interest in popular and scientific circles, driven by events such as the British astronaut Major Tim Peake's stay on the International Space Station in 2015-16, British scientists' involvement in the European Space Agency's 'Philae' comet lander project in 2014, and the establishment of a UK Space Agency in 2010. What these forays into outer space tells us, however, is that British involvement in spaceflight is largely contingent on a number of European and international networks of space expertise and infrastructure, in contrast to the traditional space powers of the USA and Russia, which, to varying degrees, are capable of sustaining their own national space programmes. Foreshadowing these recent developments, however, is a story of a British culture of outer space that emerged during the mid-twentieth-century, and not only made a significant impact on British popular culture, but also helped lay the foundations of modern-day space organisations such as the European Space Agency (ESA).

This narrative was in many ways led by the British Interplanetary Society (BIS), founded in 1933 near Liverpool, whose influential members included the broadcaster Patrick Moore and the writer Arthur C Clarke. The Society was essentially made up of a combination of spaceflight enthusiasts, amateur and professional engineers, supporting itself entirely through small donations and subscription fees, which went into the cost of producing the *Journal of the British Interplanetary Society* (est. 1934) and, later, the magazine *Spaceflight* (est. 1957), both of which are still in production today.¹ The role of the imagination of 'visioneers' alongside the knowledge of technical experts in the production of space science has been highlighted recently by science historian Patrick McCray,² and in alignment

with such insights, a limited number of studies have identified the significance of the BIS in mid-century spaceflight discourse,³ whilst an institutional history of the Society also exists alongside more technical histories of UK rocketry programmes and British space science.⁴ However, no attention has yet been paid to the role of the BIS in formulating geopolitical visions of outer space from its uniquely British perspective, in the context of the changing international circumstances of the mid-twentieth-century, nor has the role of the imagination been adequately theorised in formulating the geopolitics of outer space. What has emerged in recent years is a broader literature on the geopolitics of outer space, or astropolitics, which ostensibly presents a neo-classical astropolitics that draws inspiration from early-twentieth-century thinkers, against a critical astropolitics influenced by theoretical advances in the discipline since the early-1990s. This paper seeks to bring these two areas of research together, examining the British Interplanetary Society's evolving geopolitics of outer space in the mid-twentieth-century, considering aspects such as utopian visions of spaceflight, international collaborations in spaceflight technology, and imagined future launch sites of a British space programme. In doing so, the intention is to help build a broader understanding of the diverse cultures of outer space that underpin our continuing engagement with the cosmos in the twenty-first century, whilst also demonstrating that, through looking at the BIS, we can begin to appreciate the limits of modernity in dealing with particular questions of national, post-colonial and international identity in the twentieth century.

Outer Space and Critical Astropolitics

Alongside calls for geographers to engage with outer space as a legitimate focus of enquiry, towards what Denis Cosgrove termed a 'human geography of celestial space',⁵ scholars of geopolitics both within and outside the discipline of geography have become increasingly aware of the need to consider outer space as a key analytical realm. Indeed, despite the widespread adoption of the 1967 UN Outer Space Treaty, that decreed outer space as a non-sovereign, shared international space, there has been a general acceptance that Earth-orbital spaces have become militarised,⁶ alongside

an acknowledgement that spaceflight is inherently linked to the inter-continental ballistic missile technologies of the Cold War.⁷ Such understandings have led some scholars in geopolitics to adopt neo-classical models in explaining and promoting state involvement in spaceflight. As such, ‘spacepower theorist’ Everett C Dolman has advocated an aggressive US policy in outer space, drawing heavily on classical theorists Halford Mackinder (1861-1947) and Alfred Mahan (1840-1914), going so far as to urge the United States to ‘seize military control of the Low Earth Orbit’.⁸ Furthermore, a wide range of studies advocating a neo-classical geopolitics of outer space has recently emerged in specialist space policy journals, with a particular tendency to promote the application of Mahanian sea-power theories from the nineteenth century to the militarised realm of outer space, in interventions typically saturated with nostalgia for a ‘lost age’ of US space dominance.⁹ Whereas Dolman and others clearly are in favour of taking action to support a neo-liberal agenda of space domination, additional studies have favoured ‘neo-classical astropolitics’ as an explainer of activities in outer space since the mid-twentieth-century. For example, although providing a welcome focus on European space policy, Sheng-Chih Wang defines geopolitics as ‘a dynamic struggle among strong states who seek to seize new “space” and organise it to fit their own interests’,¹⁰ contending that such state and supra-state organisations frame our understandings of spaceflight in the modern era. Interventions along these lines typically examine state programmes such as US space policy under President George W Bush,¹¹ or more widespread patterns in the securitisation of outer space,¹² and although occasionally critical of such programmes, tend to be theoretically grounded in mainstream international relations literature or neo-classical approaches to geopolitical thought.¹³

Running counter to this school of thought in ‘astropolitics’ has emerged a critical geopolitics of outer space, led by authors including historical geographer Fraser MacDonald, who has argued against the proliferation of ‘undead’ neo-classical models in thinking about and promoting the neo-liberal domination of outer space.¹⁴ Whilst acknowledging that outer space plays an integral role in the

modern lives of citizens in most developed countries, MacDonald argues that geopolitics and spaceflight are intrinsically linked and that ‘the colonisation of space, rather than being a decisive and transcendent break from the past, is merely an extension of longstanding regimes of power’.¹⁵ However, rather than adopting neo-classical theories in explaining the relevance of these ‘extensions of power’, MacDonald’s work looks to the emergence of critical geopolitics. This contends that ‘geopolitics should be re-conceptualised as a discursive practise’,¹⁶ as opposed to a normative set of theories applicable to ‘real-world’ situations through state strategies, as one might characterise the above conceptualisations of ‘neo-classical astropolitics’. As such, fully understanding the geopolitics of outer space involves critically engaging with, firstly, the granular details of representation and practise that form part of such discourses, and second, the broader narratives of national, (post-)colonial and international identity formation, as co-constitutive elements of astropolitics. Indeed, recent research in history, sociology and anthropology has pioneered a cultural approach to examining humanity’s relationship with outer space, with studies highlighting, for example, the significance of socio-technical performances by members of Mars rover mission teams,¹⁷ processes of ‘place-making’ in discourses of exo-planet discovery,¹⁸ and the diverse forms of ‘astroculture’ that have characterised European space histories.¹⁹ In this paper, therefore, I argue that an appreciation of the broader geopolitical *cultures* of outer space, as opposed to a narrow reading of space policy in relation to particular state interests, offers a more representative and critically rigorous basis for understanding the geopolitics of outer space. Here we can refer to the insights of geographer Joanne Sharp to help define the geopolitical cultures of outer space as being part of ‘a refusal to accept the abstract logic’ of astropolitics ‘but instead embody it in historically and culturally specific interests’.²⁰

Certain works in what might be termed ‘critical astropolitics’ have examined the construction of nationalism and colonialism in outer space discourses, typically focussing on American and European case studies. Here, research by Daniel Sage has identified how nationalistic cultures of exploration, technological determinism and religiosity were fundamental to American astropolitics in the

twentieth century.²¹ As such, Sage highlights the ongoing significance of space artist Chesley Bonestell (1888-1986), explaining how his speculative paintings of colonised Lunar landscapes drew influence from sublime renderings of the American Western frontier by nineteenth-century painters such as Thomas Moran (1837-1926), and thereby contributed towards broader American cultures of nationalism and colonialism in the space age.²² Focusing on the late-twentieth-century, Jason Dittmer picks up the thread of American Manifest Destiny in outer space, identifying a subtext of colonialism in media reports of NASA's *Mars Pathfinder* missions of the late-1990s. By focusing on three particular strands of media discourse surrounding these missions; the progress of science in outer space, the Westernised nomenclature of topographic features on Mars, and the use of Earth analogues to understand and know the Martian landscape, Dittmer demonstrates how Mars was 'constructed ... as a place to be colonized' with a view to future human missions to the Red Planet.²³ Similar examples of colonialism in the language of understanding outer space have been explored in studies by Maria Lane, in her work on nineteenth century astronomers of Mars, and by Shaun Huston, in his examination of the production of nature in Kim Stanley Robinson's science fictional 'Mars trilogy'.²⁴ These examples all demonstrate how colonialism has been used as a metaphor for understanding spaceflight in the twentieth century, particularly in the American context, and offer fruitful insights into how such an approach might help us to understand the geopolitical cultures of outer space in broader contexts.

Other scholars writing in the area of 'critical astropolitics' have taken an explicitly postcolonial approach in their analysis of space programmes. As such, anthropologist Peter Redfield has interpreted the Kourou rocket range in French Guiana as a 'fertile field of representation',²⁵ through which layers of meaning around the French and European space programmes can be excavated. This site, originally established as the home of a national French space programme in 1968, was later co-opted by the European Space Agency for the successful *Ariane* space rocket. Redfield reveals how the selection of the rocket site in French Guiana was not only related to the 'latitudinal boost'

provided to space rockets by equatorial launching sites, and the associated attainment of geosynchronous orbital positions in space, but was also deeply embedded in historical networks of colonialism, as the shortlist of French rocket sites reportedly ‘parallel[ed] the list of potential penal colonies a century earlier’.²⁶ Redfield also examines social conditions within the township that sprouted next to the launch site in French Guiana, characterising the settlement of Kourou as ‘a new colony ... that reproduces an old colonialism in its racial divides reinforced by social class’.²⁷ This tension was of course replicated on a wider symbolic scale in the somewhat incongruous launching of European rockets and satellites from this location in South America. Also offering a postcolonial critique in broader terms, sociologist Peter Dickens has argued that ‘the notion of a biologically-engrained need of humans to conquer new horizons is appealed to by the European Space Agency’.²⁸ This point of view is supported by Redfield’s subsequent analysis of ESA promotional material for the *Centre Spatial Guyanais*, which draws on the achievements of classical European civilisation, universal human development and genealogies of scientific progress.²⁹

In offering detailed accounts of the geopolitical cultures of outer space, what these more critical studies have in common is the understanding of a tension between the implied utopianism of modernity and the messier post-colonial or Cold War contexts of nation and empire in which such ideas evolved. As shall be explored in this paper, some of the early ideas of spaceflight were associated with visions of internationalism in outer space, and the overcoming of national rivalries in the border-less realm of outer space. Work in historical geography has recently started to interrogate twentieth-century internationalism in detail, charting the transitional period between the decline of Western European empires and the emergence of new global networks.³⁰ As such, scholars have noted how, in the first decades of the twentieth century, international organisations emerged serving a number of different purposes, from idealistic projects such as an International Map of the World,³¹ to exchange organisations like the Institute of International Education,³² and inter-governmental consortia such as the League of Nations.³³ Following in the wake of such

developments came a movement towards scientific internationalism, which has been highlighted through various examples including the science of quantum physics in Weimer Germany,³⁴ the 1955 ‘Atoms for Peace’ Conference in Geneva,³⁵ and the 1957/58 International Geophysical Year.³⁶ In such studies, alongside an appreciation of geographies of conferencing and international symposia,³⁷ there has been a general consensus that, often located behind a veneer of optimistic internationalism, such ventures have typically been characterised by geopolitical cultures of distraction, surveillance and territorial nationalism, connecting to what Hodder *et al* have called ‘the relationship between the abstractions of internationalism and the geographical and historical specificities of its performance’.³⁸ What seems clear is that, in an era of large-scale projects in science, space programmes being one such example, the need to focus on geopolitical cultures becomes more pressing in attempting to understand notions of scientific internationalism.

Focusing on British cultures of outer space, the issue of geopolitical discourse has to be seen in the specific context of events such as the Second World War, as well as processes such as the UK’s post-war re-armament programme,³⁹ and the complicated and conditioned transition from the British Empire to the British Commonwealth.⁴⁰ With this in mind it is possible to begin to answer questions surrounding the relationship between the modernity of spaceflight and the uniquely British geopolitical complexities of nationalism, post-colonialism and internationalism during this period. In doing so, the remainder of this article examines published and archival sources relating to the British Interplanetary Society in three loosely chronological periods starting with the formation of the Society in 1933, through to the mid-1960s. In doing so, this article seeks to establish a critical astropolitics for Britain in the mid-twentieth-century, explaining the development of geopolitical cultures of outer space from early dreams of a truly international outer space, through to the eventual unravelling of this concept in the post-war period.

P E Cleator and the idealism of internationalism

Promotion of spaceflight research in Britain began with the establishment of the British Interplanetary Society in 1933. Although rockets were a well-established small-scale technology, for use as fireworks and with some military applications,⁴¹ whilst visions of spaceflight had been established in the popular realm some time earlier,⁴² the BIS was the first organisation in Britain to apply the notion of rocketry to spaceflight in a serious manner. This occurred in a geopolitical context in which internationalism was seen as a positive way of bringing together worldwide communities, taking advantage of new technological developments and moving on from the imperial outlooks that had characterised previous centuries.⁴³ Although primarily concerned with issues such as rocketry, astronautics and the possibilities of extra-terrestrial life, in many ways the pre-war BIS was also emblematic of this kind of ‘aspirational’ internationalism,⁴⁴ which was to form the basis of the Society’s geopolitical outlook for decades to come.

The founder of the BIS was Philip Ellaby Cleator, the son of an engineer from Wallasey near Liverpool, and his main influences in establishing the Society were wholly international in origin. Indeed, Cleator demonstrated a fascination with spaceflight from early adulthood, having become aware of the pioneering work of Professor Robert Goddard in the USA, who was one of the first to envisage the use of rocketry for spaceflight.⁴⁵ Having helped establish the BIS as a local Liverpool-based group in 1933,⁴⁶ Cleator arranged a visit to the renowned Berlin-based rocket society, the *Verein für Raumschiffahrt (VfR)*, in early-1934, which would be instrumental in formulating the Society’s internationalist outlook. This group attracted an international membership of engineers, scientists and laypersons,⁴⁷ and was representative of a ‘space fad’ that had taken hold in parts of Europe and Russia in the 1920s.⁴⁸ Unfortunately for Cleator, by the time of his visit the *VfR* was defunct, essentially taken over by the German Army, but in spite of this, he was able to meet his contact, Willy Ley, and on his return, wrote enthusiastically about his visit in the *BIS Journal*:

'Thanks to Herr Ley, I was able to obtain introductions to many of the leading experimenters throughout the world ... Such generosity of action ... exemplifies the true international nature of the scientific spirit.'⁴⁹

Cleator's visit to Germany can thus be seen as a kind of small-scale diplomatic mission, whereby cordialities and information were exchanged for mutual benefit and the advancement of spaceflight research. Indeed, the visit became a formative experience in Cleator's outlook on spaceflight research, convincing him of the necessity of international co-operation. This was reflected in the policies of the BIS, as it started to establish connections across the world, including societies in America, Italy, France, Austria and the USSR. As part of such efforts, the *BIS Journal* reported attempts to 'establish radio communication between members of the world's rocket societies',⁵⁰ whilst an international journal exchange programme was also initiated. The publications involved in this scheme were the *VfR's Die Rakete*, another German publication *Das Neue Fahrzeug*, for which Cleator was to pen an article himself,⁵¹ the *Bulletin* and *Astronautics* of the American Rocket Society and *Space* of the Cleveland Rocket Society, with the aim of establishing 'a free exchange of vital information between the rocket societies of the world'.⁵² Perhaps concerned about the problem of translation in internationalist collaboration, the BIS even took 'a paternal interest in Ido (reformed Esperanto) as an international language', and, as a result, an article by Society member Leslie Johnson entitled 'Space Rockets' or 'Space-Fuseli' was published in *The Ido Magazine*,⁵³ whilst an advertisement for 'Centerbladet - a journal with a special appeal for all interested in international language problems' appeared in the *Journal of the BIS*,⁵⁴ with the Society also receiving copies of the *Ido-English Dictionary* and *Montala Letro*, both published by the Ido Society of Great Britain.⁵⁵ In these early activities we can begin to see the BIS actively dealing with the 'abstractions of internationalism',⁵⁶ encountering problems such as language barriers and providing innovative, optimistic solutions to such problems.

Counter to this positive sense of international co-operation in the promotion of spaceflight research, representatives of the BIS also demonstrated critical views on government involvement in science, particularly such ‘hydra-headed regulations’⁵⁷ as the 1875 Explosives Act, which forbade practical experimentation with rockets in the UK, as well as a general sense of consternation from officialdom at the prospect of supporting spaceflight research. In alignment with this attitude, the BIS tended to espouse a principle of anti-imperialism in its outlook on spaceflight:

‘[T]here is *not* a distinct possibility that Mars may be annexed to the British (or any other) Empire in the not too distant future ... Exaggerated statements of this sort do great harm.’⁵⁸

As such, rather than a type of state-run imperialistic conquest of space, the BIS wanted the fledgling spaceflight societies of the world to be connected intellectually, to effectively create ‘an international rocket society’,⁵⁹ which would pave the way for the achievement of spaceflight. Whilst it would be safe to say that, during this early period, the BIS did not present a fully-formed geopolitical strategy, nonetheless its ideological stance of anti-imperialist internationalism based on a system of equality and information exchange between local actants, represented the genesis of a geopolitical outlook, as well as something of an idealistic high-water-mark, out of which a more pragmatic geopolitical stance was to emerge in the post-war period, at a time when the possibility of spaceflight was seen as much more likely.

The BIS and the International Astronautical Federation

By 1937 the BIS had moved the centre of its activities to London, where the majority of its members then resided, and with the onset of the Second World War, the Society suspended its activities, with members taking on a variety of wartime roles. In 1946, the BIS was able to re-group and take stock of wartime developments in rocketry, and their likely effect on the advancement of spaceflight.⁶⁰ With the help of this post-war rocketry stimulus, the Society started to broaden its horizons once more, with the internationalist outlook that was promoted in the 1930s retaining a significant role.

However, as we shall see, the changing international context of this period tended to temper the outright optimism of the Society's pre-war outlook, towards a version of internationalism that would be contingent on British leadership and shaped by new geopolitical concerns.

At a meeting in October 1947, Arthur 'Val' Cleaver, a key player in the post-war BIS who later went on to become Chief Rocket Propulsion Engineer at Rolls-Royce,⁶¹ presented a paper to the BIS entitled 'The Interplanetary Project', in which he set out two possibilities for the future of spaceflight.⁶² The first he called 'the utopian view', whereby a post-warfare global society would come together with the advent of new technologies to explore interplanetary space for the good of all humankind, a vision that drew heavily from the Society's pre-war idealist internationalism. Cleaver's second possibility, however, was that militaristic and nationalistic motives would spur the development of spaceflight, a vision borne out of the calamities of the Second World War and the rising tensions of the Cold War, and a warning to BIS members on the likely cost of failure of internationalism in spaceflight research. BIS members Gordon Thompson and Les Shepherd later suggested that this anxiety was the principal reason for the setting up of further links between spaceflight societies in this period,⁶³ which culminated with the establishment of the International Astronautical Federation (IAF) in 1951.

Now labelled 'the world's leading space advocacy body',⁶⁴ the IAF was first conceived in correspondence between the BIS, the *Groupement Astronautique Français* and the *Gesellschaft für Weltraumforschung (GfW)*, and BIS members were said to have been 'strongly in favour of the new international federation of astronautical societies, providing that the autonomy of the existing national groups was preserved'.⁶⁵ At once we get a sense of the tensions between the promise of internationalism and the paradoxical need for autonomy from any overriding authority that such an organisation might threaten. Nonetheless, a preliminary meeting was organised in Paris on the 30th September 1950, at the Grand Amphitheatre of the Sorbonne, with a reported turnout of over one thousand delegates, whilst a smaller business meeting between the representatives of eight societies

took place the next day at the French Aero Club, chaired by Val Cleaver.⁶⁶ At the latter it was decided that the IAF should be formally inaugurated at a 1951 Congress in London, which would be organised by the BIS. It was also reported that the American Rocket Society was not able to attend the Paris Congress, and that;

‘the non-participation of the Americans at Paris had been due to a feeling on their part that they were so far ahead of the rest of the world in rocket development that they had little to receive, only to give, from any project for international collaboration’.⁶⁷

It appears that the delegates at the Paris Congress were aware of developments in American spaceflight technology, which at this time included the testing of captured V-2 rockets.⁶⁸ Moreover, the American exclusion from this initial meeting represents the limits of internationalism in discourses of spaceflight research at this time, and hints at the more commonly-displayed rivalries and consternation that were to become more typical in decades to come.

In a retrospective article, Paris BIS delegate Les Shepherd recounted the process of establishing the IAF. In his view,

‘the proposed international body was envisaged as being a much more conservative federation of the various national societies, [although] many of the representatives hoped that it might eventually become more than this.’⁶⁹

Shepherd’s is a realistic account of the role that the IAF would adopt, however, he also hints at a more ambitious view of the future role of the Federation, which for many BIS members involved its incorporation into the United Nations. Founded in 1945, the UN sought to promote international co-operation in a way that would have seemed promising to the BIS, and it was deemed the natural home for global collaborative projects such as the International Map of the World.⁷⁰ Writing in the *BIS Journal*, G Loeser addresses this prospect directly:

'As evolution can neither be stopped nor kept back, some day the United Nations, a world parliament or some other international institution will take up the problem, working for peaceful space travel as a common aim of civilisation.'⁷¹

The contributions by Shepherd and Loeser hint at a sense of disappointment with what the IAF would be able to offer, as delegates looked forward to the possibility of 'loyal and unselfish international collaboration'⁷² under the auspices of the United Nations. Nonetheless, the new Federation was largely seen as a success, and in May 1951, 'the BIS was able to circulate a full draft Constitution for the IAF'.⁷³ This Constitution was approved at the London Congress, with the BIS presiding over four days of working sessions, alongside social occasions and a public meeting, with press attendance throughout.

The working sessions consisted of papers being delivered at Caxton Hall in Westminster, in English, French and German (with translated summaries), centred on the theme of 'The Earth-Satellite Vehicle', which was seen as 'the first and essential task in the conquest of space'.⁷⁴ Perhaps of equal significance as part of the 'sites [of] performance'⁷⁵ at the Congress were the scheduled social events, which were said to have 'played a pleasant and important part in helping to forge international bonds of goodwill between the various delegates'.⁷⁶ As part of such activities, 'the BIS presented all delegates with tickets to the South Bank (Festival of Britain) exhibition, and several BIS Council Members accompanied them on a visit there'.⁷⁷ This exhibition had opened in the summer of 1951, and the delegates would no doubt have gravitated towards the rocket-like Skylon tower and the Dome of Discovery with its Outer Space exhibit. In the Dome of Discovery, 'the body and outer space were constituted as the appropriate frontiers for discovery, rather than foreign lands',⁷⁸ and such exhibits, alongside new architectural forms in the International Modernist style, may have encouraged the IAF delegates to see themselves as the new explorers of a modern age.

Images from the German *GfW* (Society for Space Research) brochure of the London Congress demonstrate pictorially the key thematic elements of this event, and are reproduced in Figures 1 and 2 below. The images from this brochure, whose authorship is somewhat unclear, can be seen alongside other sources such as the *BIS Journal* and the Congress programme of events, as emblematic of the broader ‘mission statement’ of the Congress, whilst its very existence echoes of the earlier acts of translation that characterised the international dimensions of spaceflight research in this period. The first image from the brochure shows us the whole Earth as seen from a point in space, an image whose transcendental qualities have endured for centuries in the Western imagination.⁷⁹ With the European hemisphere prominent, a UK flag is thrust into the blankness of outer space from a point in Northern Europe, from which, in turn, emanates a group of national flags. These are overlaid by a ‘Dove of Peace’ by Pablo Picasso, initially commissioned as an emblem of the First International Peace Conference in Paris in 1949. Another image from the last page of the brochure is similar, but more peculiar, incorporating a photomontage of the heads of the major characters in European spaceflight research, including Eugene Sanger, Hermann Oberth and Wernher Von Braun, being led towards the Moon under a giant hat belonging to ‘London’ by Val Cleaver sitting at a desk. Two characters seem to be turned away by the anthropomorphic Moon, one of whom appears to be carrying an American flag, and can be identified as the then US President Harry Truman. The other caricature, sitting astride a rocket, is likely to be Robert Goddard, the lone American rocketry pioneer. With their striking use of photomontage and collage techniques, these images bear the influence of the Berlin Dada art movement of the 1920s, whose avant-garde works were often intensely satirical and political, arising partly as a reaction to the horrors of the First World War and its associated national rivalries.⁸⁰ However, rather than acting as images of overt protest, the symbolic message implied by these two montages is that joint European co-operation, with British leadership, is the favoured means by which humankind should colonise outer space, as opposed to unilateral American, or individualistic, progress towards this goal. The prominence of

Britain reflects London's status as the host city of the 1951 IAC, but this in turn is a result of the instrumental role that the British organisers played in setting the agenda for the first few years of the IAF.

Figure 1 - Front cover of Society for Space Research (GfW) pamphlet of the 1951 IAC.

Source: BIS Archive, Vauxhall, London. Image supplied courtesy of the British Interplanetary Society.

Figure 2 - Last page of Society for Space Research (GfW) pamphlet of the 1951 IAC.

Source: BIS Archive, Vauxhall, London. The captions translate as 'The London Congress' / 'Will they all come under one hat?' Image supplied courtesy of the British Interplanetary Society.

Following subsequent Congresses at Stuttgart (1952), Zurich (1953) and Innsbruck (1954) the IAF introduced its journal, *Astronautica Acta*, which remains one of the leading journals in spaceflight research, whilst the IAC still meets regularly to this day. As such, the establishment of the IAF in the early-1950s, including its two opening Congresses, are important events to consider, not only in the history of spaceflight research and the significant role British representatives had in its development, but also in relation to the ways in which the BIS formulated and articulated its geopolitical discourse of spaceflight in the early post-war period. This form of internationalism was moulded by a sense of British leadership and the primacy of European voices in the conquest of space, moving on from the more purely internationalist agenda of the pre-war BIS. We have also seen the significance of the cultures of geopolitics in defining such notions of spaceflight, including social relations at international symposia, key characters as icons in narratives of spaceflight research, and the artistic representations that helped shape such narratives.

New Elizabethanism and a Commonwealth outer space

From the mid-1950s onwards, the BIS increasingly encountered prohibitive factors when promoting spaceflight research. Whilst the IAF did not actually have the power to conduct serious collaborative research, the Society was well aware that the British government was not willing to act alone, having ‘neither the practical will nor the resources to become involved in a space race’.⁸¹ So, maintaining the spirit of scientific internationalism, the BIS in this period chose to promote collaboration between Commonwealth nations as the desired means of achieving spaceflight. This shift not only came about because of the need to share research and development costs, but also because of the perceived geographical advantages held by the Commonwealth as a whole. A 1961 article in the BIS publication *Spaceflight* by E D G Andrews highlighted these benefits:

‘The British Commonwealth has one asset for a space programme possessed by no other single community in the world: its scatter. Moreover, member nations control territories at nearly every latitude between 50° south and the North Pole, with an area of Antarctica thrown in for good measure ... The top of Mount Kenya ... seems to be the ideal launching site for interplanetary probes’.⁸²

Here the Commonwealth is conceptually enrolled from pole-to-pole for the benefit of British spaceflight, connecting the past exploits of Empire to the future exploration of outer space. One of the most vocal proponents of this ‘Commonwealth Space Project’ was the aforementioned Gordon Thompson, one of the Society’s most active post-war members. Thompson declared on behalf of the Society that ‘the British Commonwealth should launch satellites and undertake space research’, attempts which ‘must not be mere imitations of American and Russian feats’.⁸³ With this in mind, the BIS organised a Commonwealth Spaceflight Symposium in London in August 1959. One presentation suggested ‘the use of Antarctic territory as the Commonwealth satellite launching site for a pole-to-pole orbit’,⁸⁴ tacitly approving of the UK’s claim to territory in this region,⁸⁵ whilst also paving the way for ‘the ultimate objective of making astronautics a truly world enterprise’.⁸⁶ Here, the enduring

idea of a globally-connected outer space project was presented against a background of historic British achievement in global exploration:

'Surely it is unthinkable that Britons will not participate in this new exploration, or are the New Elizabethans much inferior to the old? Drake, Raleigh, Hudson, Cook, Park, Franklin, Eyre, Burke and Wills, Burton, Baker, Speke, Grant, Darwin, Livingstone, Stanley, Shackleton and Scott – do these names mean nothing anymore? Are Hunt and Hillary to be the last of the line?'⁸⁷

In naming a list of pioneering explorers starting with 'old Elizabethans' Drake and Raleigh, and ending with Hunt and Hillary, the leaders of the 1953 Mt. Everest expedition, Thompson calls upon a lineage of British imperialism in a similar way to which the European Space Agency drew inspiration from their own genealogy of Classical and Enlightenment thinkers half a century later, helping to legitimise space exploration by association with earlier icons of Western civilization.⁸⁸ As well as this prevailing imperialist sensibility, Thompson's list alludes to the small but significant cultural movement of New Elizabethanism, which invoked the reign of Elizabeth I as a 'golden age' to 'inspire a similar renaissance in the twentieth century'⁸⁹ under Elizabeth II. As such, Thompson presents the ascent of Mt. Everest as an iconic British achievement connected to ideas of modernity, monarchy and internationalism⁹⁰ that were key traits of New Elizabethanism, in a potent agglomeration of identities that proved to be a defining characteristic of British spaceflight discourse from the late-1950s.

The jewel in the crown of the proposed British Commonwealth space project was the Woomera rocket range in South Australia. Described as 'a most impressive asset to Commonwealth research',⁹¹ the desert facility was initially used as a weapons testing ground by the British government in the late-1940s, and during the 1950s also witnessed a series of nuclear weapons tests in the vicinity.⁹² Activity at these proving grounds contributed to what has been called 'British defence futurism'⁹³ in this period of post-war re-armament amid new Cold War tensions that

extended into the territories of the British Commonwealth. One advantage of Woomera was that its fallout range lay ‘across empty wilderness to the shores of the Indian Ocean’⁹⁴ and beyond, a set of conditions that could not be matched in the home territory of Britain. In this way, Woomera was seen as an expansive reserve of otherwise unused land, enrolled into British plans for spaceflight through association with a new, modern Commonwealth of Nations. Part of this claim that the Woomera range productively put to use empty land was the necessary discounting of Aboriginal occupation, a legacy of a broader process of agricultural enclosure and ‘improvement of the colony’ in Australia from the nineteenth century onwards.⁹⁵

Whilst the perceived geographical advantages of Woomera for a launch pad to space were never fully put to use,⁹⁶ the imaginative landscape of ‘Spaceport Woomera’ captured the attention of popular and science fiction writers in the 1950s and 1960s, as ‘a remote and exotic location where intrigue, adventure and the inspiration of spaceflight might be found’.⁹⁷ One publication, *Rockets in the Desert* by children’s writer Ivan Southall, presents Woomera in such a way, sharing the BIS narrative of a British-led Commonwealth space project. ‘Woomera’, states Southall, who visited the facility by special permission in the early-1960s, ‘began in 1945 in England’, and was now ‘the most advanced space research station of its type on earth’.⁹⁸ Southall encourages his young readers to ‘join in our great adventure of exploring the heavens’,⁹⁹ presenting this kind of work as wholesome, healthy and energetic, but also highly dangerous. This presentation of Woomera as a site of Western modernity and adventure sits uncomfortably alongside the fact that Aboriginal lands formed part of the active testing range. Although Southall’s book somewhat glosses over such aspects, a more comprehensive account by historian Peter Morton some years later explains the controversy surrounding the construction of the rocket range, whose central line was mapped ‘slicing through the Central Aboriginal Reserves’ in 1946 (Fig 3).¹⁰⁰ As such, the representation of Woomera as a site of adventure dominates the significant narratives of resistance and protest that had occurred in the late-1940s. That such narratives took place in the modern context of Cold War rocketry reminds us

that ‘geographies of adventure’ form an enduring part of contemporary geopolitical discourses, and were not just limited to the more traditional Victorian-era colonial narratives.¹⁰¹

Figure 3: Map showing the proposed Woomera rocket range in 1946. Source: Morton, 1989, p.71, Australian Government Department of Defence.

One of the first examples of Woomera being presented in fiction as a future spaceport was Arthur C Clarke’s 1953 novel *Prelude to Space*, which preceded a substantial proliferation of comics, novels, radio plays and television programmes that made use of this scenario.¹⁰² Whilst Clarke went on to become one of the ‘big three’ science fiction writers of the twentieth century, this novel was typical of his early narratives of ‘optimistic scientific propaganda’,¹⁰³ and was dedicated to his ‘friends in the BIS’.¹⁰⁴ The first half of *Prelude to Space* establishes London as the administrative centre of an international spaceflight community, and repeats the mantra of New Elizabethanism by invoking ‘the line that stretched back to Drake and Raleigh’¹⁰⁵ in its exhortation of British spaceflight. The narrative then leads on to a future version of Woomera, where the first manned space launch is taking place:

‘Luna City was built by the British government around 1950 as a rocket research base.

Originally it had an aborigine name - something to do with spears or arrows.’¹⁰⁶

Here Clarke alludes to the meaning of ‘Woomera’, the accepted English term for an Aboriginal spear-throwing device,¹⁰⁷ but dismisses this association as an irrelevant myth, preferring instead the Latin derivative ‘Luna City’. A certain form of Commonwealth symbolism abounds within the novel, as Clarke places British icons such as the Union Flag and a letter from 10 Downing Street in the heart of the Australian desert. Moreover, in the final pages, the sound of Big Ben chiming out through loudspeakers is described as the space ship ‘Prometheus’ is finally launched. These somewhat clichéd portrayals of ‘Britishness’ help advance this conception of an interplanetary project that is at the same time British and international, towards a framework that exploits the British

Commonwealth as the backdrop for interplanetary scientific internationalism. That such visions achieved their fullest expression in fictional form perhaps betrays the lack of progress that was actually being made in advancing British spaceflight in the context of Britain's diminishing international status in this period, and nonetheless represents a curiously nostalgic representation of the future of spaceflight.

Indeed, by the 1960s, calls by the BIS for 'British entry into space activities' were becoming more urgent in tone.¹⁰⁸ These appeals reflected the fading hopes of a British-led space programme, despite the significant weight of optimism and international goodwill that had characterised what Clarke had called 'the heroic period of the space age [that] lay between 1935 and 1955'.¹⁰⁹ Instead, French developments in space technology led the way for the European Space Agency, established in 1975, with the new site in French Guiana taking over from Woomera as a European launch pad to space. As we have seen in recent years, however, British industries have since played a significant part in the success of the ESA, which has become the modern exemplar of an internationally-collaborative space research organisation that had been partly envisioned by the BIS in preceding decades.

Conclusion: The limits of modernity

This paper has charted the course of geopolitical thinking in the British Interplanetary Society from 1933 to 1965, and has identified a shifting sense of Britain's expected role in spaceflight programmes. Whilst in the pre-war period, we have seen how an idealism of international collaboration was sustained by the BIS through networks of co-operation and translation, from 1945 onwards we have seen somewhat of an unravelling of this idealism. First, the notion of internationalist collaboration in spaceflight research was tempered by practicalities of organisation, cultural identity and geopolitical context, a combination of factors that was encapsulated in the early years of the International Astronautical Federation. Second, we have seen the emergence of a British

Commonwealth approach to the notion of an international spaceflight community, whose conceptualisation revealed an apparent uneasiness between the decline of the British Empire and the idea of equality and mutuality in international collaborations.

These cultures of geopolitical thought amounted to a British discourse of astropolitics in the mid-century period whose priorities shifted due to a range of cultural factors, and raises questions about national and international identity, and the understanding of science in the geopolitics of outer space. Indeed, we have seen the significance of culture, place and narrative in the formulation of this discourse, demonstrating that geopolitical thought in spaceflight has to be thought of as more than just the articulation of state-sponsored strategies for space dominance. In doing this it has been possible to identify, in this specifically British context, the limits of modernity in dealing with questions of nationalism, (post-)colonialism and internationalism in the twentieth century, as we have seen how the early promise of spaceflight as an escape from the limits of the nation-state gave way to variations of nationalist and colonialist concern. Looking forwards to new work in astropolitics, this paper suggests that, in an era in which the multiplicity of approaches to spaceflight looks set to expand even further, it is especially important to consider carefully the geopolitical cultures of outer space in diverse geographical contexts if we are to fully understand the cultural, political and economic impact of spaceflight in the twenty-first century.

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