

# Space and Spectacle in the Berlin Planetarium, 1926–1930

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## Überblick

Am 27. November 1926 eröffnete das erste Planetarium in Berlin. Schnell entwickelte es sich zu einem bedeutenden Teil der städtischen Kulturlandschaft – ein Ort, an dem Wissenschaft, Schauspiel und Weltraum zusammenliefen – und avancierte zu einer der prominentesten öffentlichen Bildungseinrichtungen Deutschlands. Der vorliegende Beitrag konzentriert sich auf die ersten Jahre seines Betriebes (1926–1930) und argumentiert, dass das Planetarium, anstatt zum populären Weltraumenthusiasmus der Zwischenkriegszeit beizutragen, eher als Teil einer umfassenden „Dialektik der Moderne“ zu begreifen ist, welche die in die Stadtlandschaft eingeschriebene Technik sowohl aufgriff als auch zurückwies. Darauf aufbauend wird das Planetarium in die Berliner Wissenschaftsgeschichte eingebettet und in Beziehung zum Zoologischen Garten und zur Urania gesetzt. Im Zentrum des neu entstehenden Diskurses der ästhetischen Moderne stehend, tritt das Planetarium als Ort widersprüchlicher, sich überschneidender Visionen der Stadt hervor, als Ort, an dem der Wunsch nach schillernder Unterhaltung mit einem ängstlichen, antimodernen Fluchtbedürfnis zusammentraf.

## Abstract

The first Berlin Planetarium opened its doors to the public on 27 November 1926. Soon, it became a significant part of the cultural landscape of Weimar-era Berlin, a place in which science, spectacle, and outer space intersected. In this contribution, the Berlin planetarium is contextualized within the city during the first years of its operation, from 1926 to 1930. I argue that rather than participating in the emergent space enthusiasm of this period, the planetarium should be understood as more closely connected to the dialectic of modernity that on one hand embraced technology embedded in the urban landscape and on the other rejected it. I contextualize the planetarium in Berlin's history of scientific education at the Zoo and the Urania, as well as the emerging discourse of aesthetic modernism. At the intersection of these discourses, the planetarium emerges as a site of conflicting, intersecting visions of the city, a place where the desire for dazzling modern entertainment coexisted with an anxious, anti-modern need for escape.

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The Berlin Planetarium opened its doors on the night of 27 November 1926, to the tune of Schubert's Quartet Movement in C Major. Lacking a traditional stage, the musicians sat in the middle of the Planetarium's 25m-wide dome, arranged in a half-moon around the star of the evening's festivities: the hulking, 4m-high Zeiss Mark II projector. Shaped like a massive dumbbell and mounted on a raised dais, it dwarfed the audience of several hundred who came to celebrate its installation. The list of speakers was impressive: the mayor, Gustav Böß (1873–1946); city councilman Wilhelm Benecke (1883–1962); and, finally, the inventor of the planetarium himself, Dr. Walther Bauersfeld (1879–1959).<sup>1</sup> A film camera recorded the entire event; the shots pan over the crowd milling around the entrance, linger on Böß and Bauersfeld watching the doors open for the first time, and rest at last on the image of the immense planetarium projector itself as it slowly rotates, its projected stars lazily moving across the artificial sky of the dome.<sup>2</sup>

For all the fanfare of its opening ceremony, the Weimar-era Berlin planetarium has faded into relative obscurity. This is due partly to the lack of materials from its years of operation; almost all of the administrative records and institutional archives were destroyed along with the planetarium itself in the 1943 bombing that decimated most of the Zoological Garden and the Kaiser Wilhelm Memorial Church. Much of what survived was held at the Carl Zeiss Optical Company headquarters in Jena in the form of reports that the directors of the planetarium sent back to the company, but a majority of that material was lost during the company's split and re-merger during and after the Cold War. What has survived these ruptures is a patchwork of bureaucratic records and institutional correspondence, primarily from the late 1920s and early 1930s. Nonetheless, reading these documents alongside contemporary newspapers, feuilletons, and cultural essays produces a picture of the Berlin planetarium as a significant feature of the city landscape.

In the vast historiography of Weimar-era Berlin, historians have approached the city through an array of different mediums: architecture, print culture, film, cabaret, maps, theater, literature, and so on.<sup>3</sup> Most elements of

1 "Planetarium der Stadt Berlin. Programm zur Eröffnung," 27 November 1926, Carl Zeiss Archives, Jena [hereafter CZ], BACZ 3100.

2 Science's Latest Wonder, British Pathé, 1926.

3 A sampling of such histories of Berlin include Peter Jelavich, *Berlin Cabaret*, Cambridge, MA 1993; Peter Fritzsche, *Reading Berlin 1900*, Cambridge, MA 1996; Theodor Kohlmann and Hermann Bausinger (eds.), *Großstadt. Aspekte empirischer Kulturforschung*, Berlin 1985; Michael Bienert and Elke L. Buchholz, *Die Zwanziger Jahre in Berlin. Ein Wegweiser durch die Stadt*, Berlin 2005; Andreas Killen, *Berlin Electropolis. Shock, Nerves, and German Modernity*, Berkeley 2006; Eric D. Weitz, *Weimar Germany. Promise and Tragedy*, Princeton 2007; Sabine Hake, *Topographies of Class. Modern Architecture and Mass Society in Weimar Berlin*, Ann Arbor 2008; Frances Mossop, *Mapping Berlin. Representations of Space in the Weimar Feuilleton*, Bern 2015.

Berlin life, from entertainment to work to consumption to production, have been thoroughly worked over, and yet the planetarium rarely, if ever, appears. Nonetheless, during its fifteen years of operation, it received millions of visitors, hosted concerts and films alongside hundreds of astronomical presentations, and attracted the attention of a wide diversity of persons and institutions, from Walter Benjamin in 1928 to Henry Ford in 1930 to officers of the Luftwaffe in 1936.

Most studies of Weimar Berlin begin with the same observation: that by the end of the nineteenth century, Berlin had completely transformed itself into the quintessential modern city; an influx of scientific industries in the late nineteenth century, combined with the flourishing of modernist culture in the early twentieth made Berlin an essential cultural and intellectual center. This transformation and embrace of the modern was accompanied by an increasing anxiety about the negative side effects of over-stimulation, and a rising disgust among a conservative population about the degenerate and out-of-touch “spirit of Berlin.”<sup>4</sup>

Nonetheless, Berlin in the middle of the Weimar Republic – after the currency stabilization and before the insistent press of fascism – was, as Alexander Geppert and Tilmann Siebeneichner have argued in the introduction to this issue, a city oriented towards the future. In particular, the technological dimension of this forward-looking attitude was situated around various sites of spectacle built on modern scientific and technological knowledge – sites like the scientific theater of the Urania in Mitte and the rocket testing sites up in Tegel, as Jana Bruggmann and Siebeneichner have shown, but also places like the Zoological Garden in Charlottenburg, the cinema palaces in Nollendorffplatz and along the Kurfürstendamm, the Lunapark in Halensee, and the planetarium itself.

The planetarium, like the Urania or the rocket launches, was part of a collection of heterogeneous Berlin sites that engaged explicitly with the possibility of outer space, forming an astrocultural network across the city. The planetarium, however, remains a unique case. As I aim to show in this article, the planetarium engaged less with contemporary space enthusiasm, and more with contemporary anti-urban sentiments rooted in a desire to escape from the city and return to the natural countryside, free from artificial light and surrounded only by a lofty firmament of real stars. Both official planetarium literature and reflections on the planetarium from cultural critics and laypeople alike consistently reiterate the planetarium’s ability to take its audience out of the city, to produce the sensation of sitting out somewhere tucked away from the blinding brilliance of urban life. This displacement was understood to be not just pleasant, but vital – a necessary recalibration of human psyches damaged and unsettled by the modern urban landscape.

4 Ludwig Finkh, *Der Geist von Berlin*, in: *Schwäbischer Merkur* 14, 10 January 1919; reprinted in Anton Kaes et al. (eds.), *The Weimar Republic Sourcebook*, Berkeley 1994, pp. 414f. This formulation is seen in slight variations in all the texts above.

The planetarium as a case study of *Berliner Welträume* thus offers an example of an astrocultural site that looks not just forward, but also back – a place that uses the imagery of outer space not just to excite and titillate, but also to support a fantasy about a return to a pre-modern communal life in the German countryside. To this end, I draw from a body of literature inspired by Jeffrey Herf's 1984 study of reactionary Weimar modernists who both rejected Enlightenment reason and embraced technology.<sup>5</sup> Several works since have revisited this thesis, refined it, and expanded it. This literature tends to focus specifically on the reactionary modernism of the Third Reich, but I find Michael Allen's study of the discourse of *Volk* among SS engineers to be particularly useful here, for its demonstration of how this reactionary modernism was oriented around community formation.<sup>6</sup>

In thinking about the construction of a countryside fantasy within the planetarium dome, I am influenced by work on the concept of *Heimat* and German nature as it developed through the Weimar Republic.<sup>7</sup> The local *Heimat* movements that revived themselves after the end of the First World War, was not an explicitly anti-modern concept, but it was articulated, nonetheless, as a desire to move away from city centers and back to the nation's natural roots. It was also, in this period, tied up intimately with strengthening nationalist rhetoric, in which *Heimat* was understood as a specifically German tradition. It is cliché at this point to note that Weimar Berlin was characterized by a tension between modern enthusiasm and a reactionary anti-modernism, but the aim of the present study is to explore how the planetarium gave this tension a specific spatial dimension, and became a site in which technological wizardry worked to produce a sense of naturalism. In what follows, I first provide a short history of the planetarium's invention and its installation in Berlin, followed by a description of a typical visit to the planetarium during the early years of its operation. I then examine several of the most popular performances from these years, and I consider the planetarium within the context of science education and entertainment in Berlin. Finally, I explore

- 5 Jeffrey Herf, *Reactionary Modernism. Technology, Culture, and Politics in Weimar and the Third Reich*, Cambridge 1984.
- 6 See Michael Allen, *Modernity, the Holocaust, and Machines Without History*, in: Michael Allen and Gabrielle Hecht (eds.), *Technologies of Power. Essays in Honor of Thomas Parke Hughes and Agatha Chipley Hughes*, Cambridge, MA, 2001, pp. 175–214; John Guse, *Nazi Technical Thought Revisited*, in: *History and Technology* 26 (March 2010), pp. 3–38.
- 7 See Celia Applegate, *The Question of Heimat in the Weimar Republic*, in: *New Formations* 17, 1992, pp. 64–74; Thomas M. Lekan, *Imagining the Nation in Nature. Landscape Preservation and German Identity, 1885–1945*, Cambridge, MA, 2004; David Nye (ed.), *Technologies of Landscape. From Reaping to Recycling*, Cambridge, MA, 1999; David Blackbourn, *The Conquest of Nature. Water, Landscape, and the Making of Modern Germany*, New York, 2006; Claus-Christian W. Szejnmann and Maiken Umbach (eds.), *Heimat, Region, and Empire. Spatial Identities under National Socialism*, London 2012.

the conflicting rhetorics of space, technology, and modernity that inhabited the planetarium's operation.

## I. The Invention of the Planetarium

The first planetarium, built in 1924, was a collaboration between Walther Bauersfeld, chief engineer of the Carl Zeiss Optical Company in Jena, and Oskar von Miller (1855–1934), the director of the Deutsches Museum in Munich. After considering and rejecting several possibilities based on existing models – which most often involved a hollow sphere in which the viewer would stand, with holes punched in the sphere's surface to simulate stars – von Miller and Bauersfeld spent several years developing an entirely new device, one which borrowed its general principles from the early cinema projectors.<sup>8</sup> This new planetarium projector would stand in the middle of a large dome, and with thousands of tiny lenses would project light onto the dome's surface. The projection apparatus afforded a precision that the previous models' punched holes could never achieve. Not only could the relative brightness of the stars be easily represented, but the early prototype could also display planets tracking across the sky. The effect of the manufactured sky was extraordinary; by May 1925, when it was relocated from its temporary housing in Jena and installed in the Deutsches Museum, the Zeiss planetarium had already attracted tens of thousands of people, and had gathered a sizable celebrity across Europe. Svante Elis Strömgren (1870–1947), director of the Royal Danish Observatory, published in a February 1925 edition of the Copenhagen newspaper *Politiken* a breathless review of his experience in what he named “The Wonder of Jena”:

“Never was a medium of demonstration produced as instructive as this, never one more fascinating in the effect, and certainly never one which appeals to everybody as this does. It is a school, theater, and film all in one, a lecture hall under the vault of the heavens, and a drama in which the celestial bodies are the actors. No description, no photograph, no drawing can possibly reproduce the overwhelming impression made by a demonstration in a Zeiss planetarium.”<sup>9</sup>

Strömgren's review captures the uniqueness of the planetarium experience – neither merely pedagogical nor completely spectacular, the “Wonder of Jena” offered something entirely new and otherworldly: “a drama in which the celestial bodies are the actors.” Soon, planetaria were opening across Germany. By 1933, there were eleven planetaria in Germany alone, receiving in total more than three million visitors, and half a dozen more planetaria were being installed around the world.<sup>10</sup> The Berlin planetarium was the sixth to open in

8 Franz Fuchs, *Der Aufbau der Astronomie im Deutschen Museum (1905–1925)*, Munich 1955, p. 57.

9 Quoted in Walter Villiger, *Das Zeiss-Planetarium, Jena 1926*, p. 11.

10 Carl Zeiss, internal memo (untitled), n.d. (probably 1933), CZ, BACZ 2259. There is scant literature on the history of planetarium, but interested readers should consult: Villiger, *Zeiss-*

1926, after Düsseldorf, Barmen, Dresden, Leipzig, and Jena. Most of them opened within eight weeks of each other during the early summer, while the Berlin planetarium was inaugurated in November. The rapid installation of these planetaria speaks to their broad appeal in this moment, as well as to the Zeiss company's aggressive – and largely successful – marketing campaign that targeted major metropolitan centers. In the letters and telegrams Zeiss representatives exchanged with tentatively interested city administrators across Germany, praising the virtues and variability of the planetarium, they paint the planetarium as an essentially modern creation, an experience that fits seamlessly into the modern metropolitan landscape.<sup>11</sup> Nowhere were these qualities more extolled than in Berlin.

The Berlin planetarium brackets two related transformations that occurred at the end of the long nineteenth century. The first was a rapidly growing enthusiasm for popularly accessible science, especially after the massive midcentury popularity of Alexander von Humboldt's *Kosmos*. This enthusiasm was fed by an increasing number of professional science institutions – museums, scientific theaters, lecture series, etc. – whose primary goal was public education. These institutions included the Deutsches Museum and the Urania in Berlin, which opened as a science theater in 1888, offering dramatically performed scientific lectures.<sup>12</sup> In many ways, the planetarium stands as the inheritor to the projects of public science education of the nineteenth century, but what it offered to Weimar audiences diverges significantly from the model perfected in the *fin de siècle*.

The second major shift in which the planetarium must be contextualized was Berlin's rapid population growth. In 1888, at the opening of the Urania, the city hosted close to one and a half million people, but by 1927, when the planetarium opened its doors, that number had risen to over four million. This shift in population was one of several transformations in this period. Berlin

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Planetarium; Henry C. King, *Geared to the Stars*, Toronto 1978; Günther Ackermann, Olaf Breidbach et al., *Die Weltenmaschine. Beiträge zur frühen Geschichte des Zeiss-Planetariums* Jena, Jena 2011; Thomas Kraupe, "Denn was innen, das ist draußen": Die Geschichte des modernen Planetariums, Hamburg 2005; Jordan Marché, *Theaters of Time and Space. American Planetaria, 1930–1980*, New Brunswick 2005; and, most recently, Charlotte Bigg, *The View from Here, There and Nowhere? Situating the Observer in the Planetarium and in the Solar System*, in: *Early Popular Visual Culture* 15, 2017, pp. 204–226.

- 11 Franz Fieseler, *Das Zeiss-Planetarium, seine Entstehung und kulturelle Bedeutung*, 1936, CZ, ASTRO 910.
- 12 For more on the history of science education and popularization in Germany during the nineteenth century, see Andreas W. Daum, *Wissenschaftspopularisierung im 19. Jahrhundert. Bürgerliche Kultur, naturwissenschaftliche Bildung und die deutsche Öffentlichkeit, 1848–1914*, Munich 2002. For more on the rise of popular science in the nineteenth century, see Aileen Fyfe and Bernard Lightman, *Science in the Marketplace. Nineteenth-century Sites and Experiences*, Chicago 2007. On the Deutsches Museum see Wilhelm Fußl u. Helmuth Trischler (Hg.), *Geschichte des Deutschen Museums. Akteure, Artefakte, Ausstellungen*, Munich 2003; and on the Urania see Jana Bruggmann's article in the present issue.

at the end of the nineteenth century was a city characterized by its embrace of science and industry – it was the home of Siemens and AEG, as well as a number of science institutions like the Kaiser-Wilhelm-Gesellschaft, and science education centers like the Urania. As Martina Heßler has argued, the “first decades of Berlin’s ‘modernity’ were defined [...] by science and technology.”<sup>13</sup> In the first decades of the twentieth century, however, the character of the city shifted from one defined primarily by its technological modernity to one in which modernity was increasingly an aesthetic and cultural category.<sup>14</sup> Thus the Berlin planetarium, while in some ways an inheritor to the same concerns that drove the founding of the Urania and other popular science societies at the turn of the century, was nonetheless situated at the center of a significantly different city. Of the eleven planetaria that were operating in Germany by 1933, Berlin’s was by far the most heavily trafficked. Attendance records estimated an average of 775 visitors per day, compared to 229 in Jena, at the Zeiss company’s flagship planetarium.<sup>15</sup> This discrepancy was in large part due to the clever positioning of the planetarium within the ever-expanding geography of Berlin during the Weimar Republic.

## II. A Visit to the Planetarium

A visitor to the Berlin planetarium would usually arrive by train, disembarking at the Zoological Garden station [Fig. 1]. The Zoo station originally opened in 1882 for local trains, and in 1902 it expanded to include one of the first underground subway stops. It was the major transit hub of the western side of the city, and the city planners took this into account when choosing a location for the planetarium. “This place was chosen,” read the promotional brochure, “because of the exceptionally favorable transportation possibilities. [...] It was also the desire of the city administration to place the planetarium in a context where, year after year, tourists and locals alike will return. This is the case with the Zoo.”<sup>16</sup> This makes clear the desire at the institutional level for the planetarium to be perceived not simply as an educational experience, or as part of a larger museological framework devoted to science education for the masses. Rather, the Berlin planetarium was intended to be viewed as a tourist attraction as well.

Upon exiting the train station on Joachimstalerstraße, the visitor would face the main entrance of the Zoo, with the famous domed roof of the Elephant House peering behind the entrance gate. To the immediate right stood

13 Martina Heßler, “Damned Always to Alter, But Never to Be”: Berlin’s Culture of Change Around 1900, in: Miriam R. Levin, Sophie Forgan et al. (eds.), *Urban Modernity. Cultural Innovation in the Second Industrial Revolution*, Cambridge, MA 2010, pp. 167–204, here 168.

14 Ibid.

15 Carl Zeiss, internal report [untitled], 1933, CZ, BACZ 3100.

16 Planetarium der Stadt Berlin, Berlin 1927, p. 8.

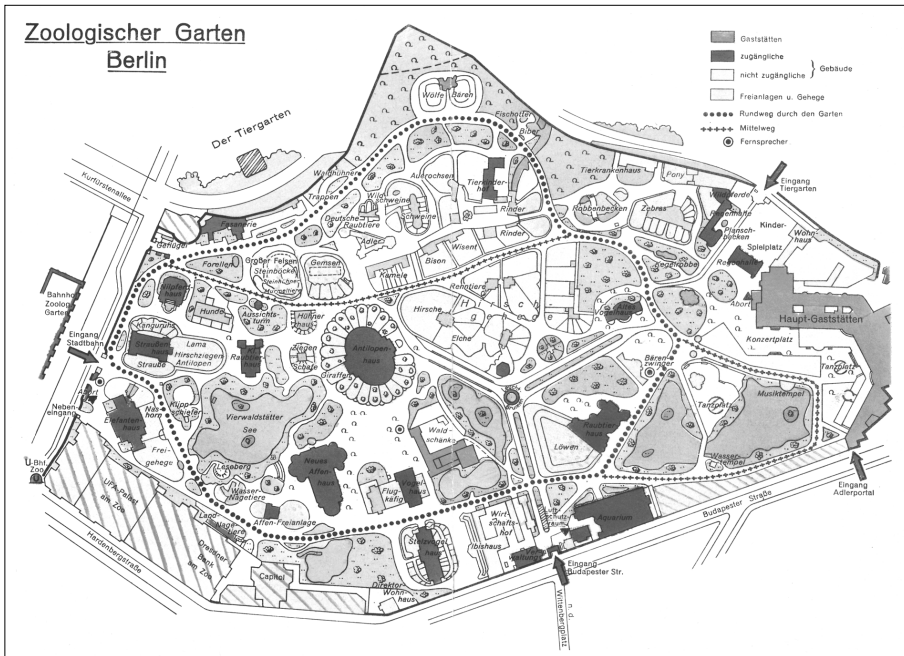


Fig. 1: A map of the Zoologischer Garten circa 1925. The proposed land for the planetarium is visible outside the Zoo's extant boundary in the top left, west of the Fasanerie and facing out to Joachimstalerstraße and Kurfürstenallee. The Ufa-Palast is located at the site's south-western end on Hardenbergstraße. Courtesy Staatsbibliothek zu Berlin – Preussischer Kulturbesitz.

the magnificent Ufa-Palast cinema, which in 1926 was the largest cinema in the country. Past the Ufa-Palast, they could glimpse the spire of the Kaiser Wilhelm Memorial Church rising up over the beginning of the Kurfürstendamm. To the left, the planetarium itself sat at the corner of Kurfürstenallee. The visitors could arrive at the planetarium in one of two ways: they could either walk up the street to the corner, where the planetarium sat nestled in a small copse of trees, or they could pay an additional one Reichsmark admission fee and walk first through the Zoo.

The planetarium sat on its own small plot of land, and charged an admission of one Reichsmark for adults and fifty pfennigs for students and children.<sup>17</sup> It was a small building, comprised mostly of the twenty-five meter wide dome and an entrance hall [Fig. 2]. Richard Ermisch (1885–1960), a *Baurat* in the Berlin municipal construction office, was the chief architect. Planetaria posed a unique challenge for architects of this period; the most pressing concern was the construction of a dome that was large and stable but also perfectly smooth, so as to fade as easily as possible into the background when the projector was turned on. The dome engineered by the Zeiss company, and adopted by Berlin,

<sup>17</sup> The Zoo's admission price in this period was the same, as was the Aquarium's.



was essentially an expandable steel net which was pushed and pulled open by men climbing on the dome as it grew.<sup>18</sup> The images of the dome construction in Berlin are striking and suggestive: an enormous, arching net, with a dozen workers clinging to the underside, “a group of men who move in a technically organized space between Heaven and Earth, producing an image that looks like a stellar constellation.”<sup>19</sup> When the dome was stabilized and soundproofed, the interior was covered entirely in smooth white canvas. The resulting space was cavernous and entirely featureless, its emptiness interrupted only by the looming presence of the projector itself.



Fig. 2: Construction workers cling to the steel network of the Berlin planetarium under construction, early 1927. Courtesy Carl Zeiss Company Archives.

- 18 Joachim Krause, *Architektur aus dem Geist der Projektion. Das Zeiss-Planetarium*, in: *Wissen in Bewegung. 80 Jahre Zeiss-Planetarium Jena*, Jena 2006, pp. 51–78, here 67. It is also worth noting here that Zeiss developed this dome construction nearly twenty years before R. Buckminster Fuller designed his geodesic dome around the same principles. It is unclear to what extent Fuller based his design on Bauersfeld’s Zeiss model, but the basic principles of both are the same: a lattice of triangles made out of steel, which makes the structure nearly perfectly hemispheric, extremely stable, and able to bear a great deal of weight.
- 19 Hans-Christian von Herrmann, “Der bestirnte Himmel über mir...” *Das Projektionsplanetarium in der Wissenskultur der Moderne*, in: Sonja Neef, Henri Sussman and Dietrich Boschung (eds.), *Astroculture. Figurations of Cosmology in Media and Arts*, Munich 2014, pp. 101–117, here p. 110.

The rest of the building was strikingly simple. Ermisch built a small foyer to house all the operational necessities – the director’s office, a coatroom, toilets, and a ticket kiosk – but hardly any ornamentation. The only decorative elements stood above the entranceway, as noted in a promotional pamphlet on the planetarium’s design:

“The exposed surfaces of the building attained, with a look toward the stone veneers of the surrounding buildings, a cladding of reddish-brown bricks; as the only ornaments, ceramics were affixed to the main facade, which – on the fascia – represent the night sky and – above the entrances – bear the astronomical signs of the days of the week.”<sup>20</sup>

This simplicity calls to mind a debate that was circulating in architectural circles at the time about the proper design for the newly popular planetaria that were appearing across Germany. Walter Dexel (1890–1973), an architect who operated in Bauhaus circles, took a strong stance on the design of the planetarium in the pages of *Reclams Universum*. He felt that the architect ought to draw inspiration from the purpose of the building itself. “Here,” he wrote in an article addressing the problem, “we have not only an artistic and creative work, but also the corresponding form for a brand-new idea – a new type – which leaves no doubt about the purpose of the building.”<sup>21</sup> His vision was of a perfectly smooth, extremely simple dome construction – a stark monolithic design which, in his view, echoed the display within.<sup>22</sup>

Ermisch’s design for the Berlin planetarium, though simple and sparse, was not the streamlined, aggressively modern dome of Dexel’s vision. Nonetheless, the lack of almost all ornamentation indicates that the design of the building is subservient to its function. There is no attempt to produce a feeling of awe in anticipation of the main event; rather, the design is left to “speak for itself.” Visitors to the planetarium would have little cause to linger in the plain entrance hall any longer than it would take to hang their coats, proceeding instead into the darkened space of the dome. Settled in their seats, they were asked to close their eyes in the silence, and imagine themselves on “a starry night, on a peak somewhere in the Alps,” as the houselights dimmed and the projector hummed to life.<sup>23</sup>

20 Das Planetarium der Stadt Berlin, p. 11.

21 Walter Dexel, Planetarium und Planetariumsbauten, in: Reclams Universum 42, May 1926, pp. 853–856, here 856.

22 These comments resonate with the Bauhaus desire for beautiful functionality; Walter Gropius wrote that Bauhaus’s “guiding principle was that artistic design is neither an intellectual nor a material affair, but simply an integral part of the stuff of life.” Walter Gropius, *The New Architecture and the Bauhaus*, trans. P.M. Shand, London 1935, p. 89.

23 Quoted in Alison Griffiths, *Shivers Down Your Spine*. Cinema, Museums, and the Immersive View, New York 2008, p. 129.

### III. Science Education and Enthusiasm in Berlin

The planetarium in Weimar Berlin operated in a space between scientific pedagogy and spectacular entertainment, a balance that had previously been developed in other spaces of education and performance, such as the Urania, as Jana Bruggmann details in this volume. In this respect, it is remarkably similar to its neighbor, the Zoo, which had always been a center of leisure mixed with education. Though it was Prussia's first official zoological garden, it was not the first collection of animals on display in Berlin; it had predecessors in various traveling menageries that would pitch their tents underneath the Brandenburg Gate. However, it was the first to combine the spectacle of exotic animals with a scientific approach to their presentation.

A history of the Zoo published in 1929 argued that the early Zoo guidebooks for visitors, which contained descriptions of the animals and histories of their habitats and lives, provided an “illuminating look into that new science, which at the time was first called natural history.”<sup>24</sup> The Zoo presented the animals in two different ways simultaneously: from one perspective, the animals were objects of scientific consideration, with natural histories and biological facts; on the other, they were objects of spectacular exoticism, displayed in elaborately staged environments. As Oliver Hochadel and others have shown, zoos at the end of the nineteenth century were both sites of entertainment for the lay public and of education and scientific research; the zoo was thus both a social and public space, and an academically oriented research environment.<sup>25</sup>

The Berlin Zoo in this period was one of the first zoos to introduce naturalist environments for the animals, a change that Gary Bruce attributes to an expansion of the Zoo's intended purpose, from a scientific catalog of physiological variety in the animal kingdom, to a more expansive display of animals living, even thriving, in their natural habitats.<sup>26</sup> The European brown bears, for example, were housed in a sunken pit with large leafless trees reaching up to the main level of the zoo, on which the bears could climb and come face to face with the visitors behind the fence. The elephants were housed in the spectacular Elephant House, whose design was loosely based on the architecture of southeast Asian palaces, while the four African ostriches lived in a beautiful pastiche of Egyptian temples, with hieroglyphs so accurate Egyptology students from the Humboldt University would come to study them.<sup>27</sup> The peacocks lived in an elaborate aviary in the northeast corner of the park, next to the planetarium. The habitats drew on fantasies of distant continents: the

24 Adolf Heilborn, *Zoo Berlin 1841–1929. Zur Geschichte des Zoologischen Gartens zu Berlin*, Berlin 1929, p. 8.

25 See Oliver Hochadel, *Watching Animals Next Door. “Scientific” Observations at the Zoo (ca. 1870–1910)*, in: *Science in Context* 24, 2011, pp. 183–214.

26 Gary Bruce, *Through the Lion Gate. A History of the Berlin Zoo*, Oxford 2017.

27 *Ibid.*, p. 100.

orientalist façades speak to an attempt to bring the far-flung exotic corners of the world into Berlin, for observation and consumption.

This was especially true for the human zoo exhibits, whose popularity had waned in the war years and early tumultuous years of the republic, but which were once again on the rise in the mid-1920s. A wildly popular traveling troupe of Bedouins from Tripoli opened at the Zoo only a few weeks before the planetarium opened, attracting tens of thousands of visitors a day.<sup>28</sup> The planetarium, and its promise to show its audience not just the skies at home, but also skies abroad, was thus in good company in this corner of the Tiergarten. I draw this comparison not just to highlight the similarities in the travel fantasies of the zoo and those promoted in some of the planetarium shows, but also to suggest that the planetarium be understood as a similar kind of space that balanced both entertainment and spectacle, and scientific education for a curious lay public.

The planetarium's other prominent predecessor in the Berlin landscape of pedagogy and entertainment is the Urania, whose technologically flashy, dramatically educational performances have been unpacked by Jana Bruggmann in this issue. Nonetheless, while the Urania's style of theatrical pedagogy influenced the delivery of the planetarium lectures, the Urania never sought to provide an entirely immersive experience. It was still very much a theatrical space, with a clear divide between audience and lecturer. As Arne Hessenbruch has argued, the Urania "embodied in its very structural elements the distance between the scientist as professional expert and the lay audience."<sup>29</sup> While the Urania still had explicit connections to the active scientific community in Berlin, connected physically as it was to the observatory, the planetarium stood oddly separate. While the planetarium was educating the lay public on the basic mechanics of orbits and the challenges of scientific observation, by taking them on dizzying journeys through time and space, the Berlin scientific community was engaged in more complicated problems. The interwar decades saw both the refinement and expansion of a new cosmology based on Einstein's theories of relativity and the development of quantum mechanics, as well as an emerging interest in rocket propulsion technologies at the rocket enthusiast societies that experimented in the north of the city, as Tilmann Siebeneichner has demonstrated. Taken together, these changes formed the early manifestations of outer space enthusiasm that would come to full expression during the Cold War.<sup>30</sup>

28 Ibid, p. 139.

29 Arne Hessenbruch, *Science as Public Sphere. X-Rays between Spiritualism and Physics*, in: Constantin Goschler (ed.), *Wissenschaft und Öffentlichkeit in Berlin, 1870–1930*, Stuttgart 2000, pp. 89–126, here p. 94

30 See Paul Forman, *Weimar Culture, Causality, and Quantum Theory, 1918–1927*. Adaptation by German Physicists and Mathematicians to a Hostile Intellectual Environment, in: *Historical Studies in the Physical Sciences* 3, 1971, pp. 1–115. For more on rocket societies, see Frank Winter, *Prelude to the Space Age. The Rocket Societies, 1924–1940*, Washington,

Siebeneichner and Geppert have explored this rise of space enthusiasm in the introduction to this special issue, and other historians, like Michael Neufeld, have shown that this enthusiasm peaked in 1928–1929. The fad culminated with Fritz Lang's 1929 film *Frau im Mond*, which featured a rocket designed by the experimental rocket engineer Hermann Oberth (1894–1989) and in consultation with Willy Ley (1906–1969), an early public supporter of spaceflight research and, along with Oberth, an early member of the *Verein für Raumschiffahrt* (VfR).<sup>31</sup> *Frau im Mond*, as Alexander Geppert has argued, established an “imagery of outer space” through the productive relationship between Lang's filmic vision and Oberth and Ley's scientific modeling. Neufeld has attributed this cultural interest in space and spaceflight to a potent combination of rising nationalist sentiment, which celebrated advances in rocket technology by Oberth and others as “the latest accomplishments of German technology”; a “widespread faith in technological progress” in the period of stabilization after around 1923; and a modern consumer culture that encouraged “an appetite for spectacles.”<sup>32</sup> These three factors developed and sustained an excitement around spaceflight in this period.

Curiously, however, the planetarium does not appear to have participated in this nascent space enthusiasm movement. No extant records show any visits from the *Verein für Raumschiffahrt* or any of the other rocket enthusiast groups to the Berlin planetarium, though Berlin regularly sent reports of special interest group visits back to Carl Zeiss in Jena.<sup>33</sup> There is no extant documentation of any correspondence between the rocket enthusiasts and the planetarium. The premier of *Frau im Mond*, in October 1929, was held at the Ufa-Palast, directly around the corner from the planetarium, and featured an enormous redressing of the theater's façade in honor of the film. Graphic designer Rudi Feld's façade featured a “sculpted rocket being launched from a three-dimensional skyscraper city that jutted out from the wall of the theater in the lower right side and traveling diagonally up to the moon on the upper

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DC 1983, pp. 35–44; Alexander C.T. Geppert, *Space Personae. Cosmopolitan Networks of Peripheral Knowledge, 1927–1957*, in: *Journal of Modern European History* 6, 2008, pp. 262–286 and Michael J. Neufeld, *The Rocket and the Reich. Peenemünde and the Coming of the Ballistic Missile Era*, New York 1995. There is one notable exception to the general separation of the planetarium from the scientific community, which is that during the early years of the Second World War, the Luftwaffe would often hold stellar navigation lessons in the planetarium. A more in-depth discussion of the peculiar relationship between the planetarium and the Nazi state unfortunately cannot be given in the space allowed here.

31 Michael J. Neufeld, *Weimar Culture and Futuristic Technology. The Rocketry and Spaceflight Fad in Germany, 1923–1933*, in: *Technology and Culture* 31, 1990, pp. 725–752, here p. 727

32 Geppert, *Space Personae*, p. 273; Neufeld, *Weimar Culture*, p. 749.

33 Typical visits of note include foreign diplomats, famous businessmen, and several cultural societies from smaller cities.

left and back down to the city again.”<sup>34</sup> The dark blue backdrop to the display was studded with a thousand small electric stars. And yet despite the close geographical and thematic proximity of the film to the planetarium, no mention is made of the film, or of any attempt to capitalize on the space enthusiasm it brought to the area, in any of the extant planetarium documents.

What are we to make of this absence? It would be ill-advised to conclude that participants in this space enthusiast moment were unaware of or uninterested in the planetarium. What we can conclude, however, is that, based on the limited source material available, the planetarium did not seek out these other actors, or actively engage in this enthusiastic moment. In part, this might be due to the type of experience it offered. *Frau im Mond*, the *Verein für Raumschiffahrt*'s journal *Die Rakete*, Ley, and Oberth constructed an “imagery of outer space,” in which outer space emerged as a place to which someone might travel, or which technology might conquer. By contrast, the planetarium's vision of outer space was secondary to its demonstration of its machine, and a desire to amaze its audience.

#### IV. “A Miracle Happens”: Inside the Planetarium

The Berlin projector was a distinctly different machine than the original “Wonder of Jena” that Bauersfeld designed for the Deutsches Museum. The first planetarium projector was comprised of a thick cylinder topped with a 50-cm sphere, which housed a large, 200-watt bulb, whose light was directed outwards through thirty-one projectors that studded the surface of the globe. Each projector produced a small field of stars; the projection fields fitted together to create a luminous mosaic of the night sky, with a total of about 4,500 stars. The globe also had forty-one other projectors, which produced the hazier light of the Milky Way, and could also, when turned on, overlay constellation diagrams on top of the star field.<sup>35</sup> In the cylinder beneath the globe, Bauersfeld and his engineers stacked a series of geared cranks that, when engaged, projected the planets on top of the star field. The projector was adjustable to a certain degree, to account for seasonal shifts and small variations in latitude and longitude, and could move ahead in time or backwards. Nonetheless, it was a limited machine for several reasons. First, the projectors mounted on the surface of the globe were able to reproduce the magnitudes and relative sizes of the stars but lacked the precision necessary to differentiate their colors, and were also unable to reproduce the proper motions of the stars. Some of the larger stars grew blurry at the edges if the lamp was turned on too brightly. In order to fill the entire hemispherical dome of the planetarium with the full star mosaic, the projector had to be mounted almost

34 See this issue's cover illustration and the contribution by Alexander Geppert and Tilmann Siebeneichner. Janet Ward, Weimar Surfaces. *Urban Visual Culture in 1920s Germany*, Berkeley 2001, p. 169.

35 King, *Geared to the Stars*, p. 344.

three meters above the floor, which gave spectators the impression that they were seated below ground level. There was very little range of motion in the latitudinal direction; the projector was thus essentially able only to reproduce the sky above Munich.

The second generation of projectors, of which Berlin's was one of the first, had been completely redesigned. In 1924, after a successful trial run of the Mark I projector in Jena, Walter Villiger (1872–1938), the scientific manager for the Zeiss company's optical instrument department, suggested the addition of a second hemisphere of stars. The Mark II that Villiger designed with Bauersfeld was shaped like a massive dumbbell, divided in the middle. One half of the dumbbell projected objects in the northern hemisphere, and the other reproduced the southern hemisphere. Including the large metal frame, which anchored the projector at its center and acted as a fulcrum around which the machine would rotate, the whole apparatus reached nearly five meters and it weighed a total of 2,500 kilograms. It was, wrote one visitor to the Berlin planetarium, "so unlike anything with which even engineers are familiar that it might be taken for the fantastic creation of some Martian inventor. [...] This cylinder with its two knobs is the brain, heart, soul, and *deus ex machine* of the planetarium."<sup>36</sup>

This new projection apparatus also solved the first model's problems with apparent magnitudes, colors, and proper motions, and its planet projectors were more fine-tuned and adjustable. Although this new model was significantly larger than the original, the fulcrum of the dumbbell was lower to the ground, which removed the peculiar underground sensation the original model's height had produced. The overall effect was far more natural, as one visitor to the Berlin planetarium remarked:

"In [the planetarium], the 'firmament of the heavens' is being reconstructed with a perfect illusion of reality. The sun, the moon, the planets and all the stars that one can see blaze up suddenly out of the darkness with an eerie but awe-inspiring naturalness. The walls seem to have been removed by magic hands and the starry, deep-blue canopy of the heavens is apparently stretched out in infinite space above us."<sup>37</sup>

As the lights dimmed and the dome was plunged into darkness, "you lose," according to another account, "all sense of confinement":

"In some incomprehensible optical way you have been transported out into the open on a marvelously pellucid night ... A miracle happens. A switch has been thrown, and that cerulean vault suddenly becomes a firmament of twinkling stars. Even trained astronomers who know exactly what to expect cannot sup-

36 Walter Kaempffert, "Now America Will Have a Planetarium", in: New York Times, 24 June 1928, p. 5.

37 Otto D. Tolischus, Seeing Stars, in: The World's Work 55, 1927, pp. 96-100, here p. 96.

press a long-drawn “ah-h-h!” of astonishment and pleasure when they behold this dramatically presented counterfeit of the heavens for the first time.<sup>38</sup>

Another writes: “So true to life is the image of this artificial starry heaven, that man has the unshakeable impression of being truly out underneath the star-studded sky itself.”<sup>39</sup> The editor of *Scientific American*, after a survey of German planetaria, reported that when the projection apparatus was switched on, “the confining dome retreats to infinity. [How] perfect is the verisimilitude. The dome seems to vanish by magic.”<sup>40</sup>

The shows played in Berlin were a mixture of hour-long scripts that were circulated among planetarium directors across Germany, and original “special programs” written specifically for Berlin [Fig. 3]. Unfortunately, the transcripts of these special programs were mostly kept in the Berlin planetarium itself, and were lost along with many of the administrative records during the 1943 bombing that destroyed the planetarium and much of the Zoo. Nonetheless, from the surviving correspondence between Berlin and Jena preserved by the Zeiss company, and from the transcripts of the shared scripts, we can begin to



Fig. 3: A lecture for schoolchildren begins in the Berlin planetarium, August 1928. Courtesy Carl Zeiss Company Archives.

38 Kaempffert, “Now America Will Have a Planetarium”.

39 G.M. Morison, *Die Geheimnisse der Sterne*, in: Westermanns Monatshefte, February 1925, p. 580.

40 Marché, *Theaters of Time and Space*, p. 17.



assemble a more precise impression of what visitors saw when they entered what one reviewer called “really, a moving picture of the sky.”<sup>41</sup>

One popular show in 1927, *The Year in a Matter of Minutes*, promised a dizzying display of mechanical dexterity that would nonetheless ultimately be educational. “We would like,” explained the introductory script, “in these artificial heavens, to let time advance wildly, so that we can better study the movements of our neighboring stars.”<sup>42</sup> With this promise, the room was plunged into darkness, and the performance began. First, the lecturer presented a series of photographs, showing the planets of the solar system, while explaining the history of the astronomical study of orbits. As the historical lesson drew to a close, the photographs were removed, the planetarium projector itself slowly came to life, and the main act of the show began.

The projector began lazily rotating, the stars, planets, and a disk representing the Sun slowly moving across the dome. In four minutes, the projector had completed one full rotation, a single day. As the lecturer began to point out recognizable constellations and demonstrates the difference in apparent motion between distant stars and neighboring planets as they track across the sky, the projector started moving slightly more quickly. Just as the speed became noticeably more rapid, the projector stopped abruptly. “We are making,” announced the lecturer, “an intervention into the natural order! Here we are stopping the rotation of the Earth, for just a moment.” The outlines of constellations suddenly appeared over the stars, and the lecturer pointed out Taurus, the bull, and Castor and Pollux, the twins, visible clearly over the meridian. Just as quickly, the constellation overlay disappeared, and the projector began to spin, far more quickly than before. Planets and stars whirled by, and in seven minutes, an entire year had passed. The lecturer speeded up the motor even more, and this time, accomplished the feat in four minutes. The motor turned more quickly, and a year’s worth of rotations took a mere minute and a half. At this point, the noise from the projector’s motor, while not deafening, would echo loudly in the otherwise silent dome, offering a mechanical accompaniment to the dizzying display above. Then the projector was abruptly flipped, and visitors were suddenly presented with the sky of the southern hemisphere, rotating just as quickly. “A trip around the world!” explained the lecturer. At last, the motor began to slow, and the lecturer announced a “return to reality,” as the projector came to a stop, and the house lights slowly came back on.<sup>43</sup> The disorientation of this performance was enhanced by the inclusion of a disk representing the sun moving along the equator; that is, the sky projected on the dome’s surface was not only the sky you might see at night, if all the electric lights were turned off, but also the stellar array you would be able to see during the day, if the sun were extinguished. The experience offered in

41 Tolischus, *Seeing Stars*, p. 96.

42 *Das Jahr in wenigen Minuten*, 1927, p. 1, CZ, ASTRO 0422.

43 *Ibid.*, p. 2.

this show is adjacent to something familiar, but the unbelievable acceleration of time, combined with the revelation of the sky normally obscured by the sun, produced something decidedly unfamiliar.

The dynamism of *The Year in a Matter of Minutes* was balanced by the more sedate but also more popular *The Skies of Home*, (*Der Himmel der Heimat*) which ran on and off alongside it from 1927 into the early 1940s. Whereas *The Year in a Matter of Minutes* used the power of the projector to produce a dizzying spectacle of rotation, *The Skies of Home* was a slower journey through the local night sky. As the projector spins slowly, according to the lecture script, the audience hears about the various planets that might be visible that time of year, the constellations that are closest to the zenith, and the variations in the paths of the sun and moon across the sky. The lecturer gives a brief lesson in apparent motions and retrograde orbits, using an arrow-shaped flashlight beam to illustrate his examples. This show in particular made use of an extra design feature of the planetarium; all along the horizon of the dome was a small silhouette of the Berlin skyline. A similar feature existed in the original planetarium in Munich, though few other planetaria permanently adopted it. In Berlin, however, it stayed. The original goal of the silhouette was to provide a schema of orientation for the audience, so that the startling clarity of the projected sky could be mapped onto familiar landmarks. Visitor numbers of specific shows no longer survive, but from reports the Berlin office sent back to the Carl Zeiss headquarters, *The Year in a Matter of Minutes* appears to have been the second most popular show, running on and off for nearly a decade. *The Skies of Home* ran more often, and for longer stretches than any other show performed in Berlin.<sup>44</sup>

Taken together, these two shows represented the scope of the spectrum that the planetarium experience offered. On one end, as one visitor remarked, “we are bound to neither time nor space. [...] It looks,” he continued, “as if in a jazz age even the heavens were moving in jazz time.”<sup>45</sup> On the other, the planetarium serves as a grounding force, orienting the audience in a disorienting world. “Often,” read the lecturer at the beginning of *The Skies of Home*, “have we all of an evening or night turned our gaze briefly skyward, to catch a glimpse of the unreachably distant glitter of the celestial dome. But only very rarely have any of us been permitted to see the sky as it really appears, without any of the sight-obstructing influences around us.”<sup>46</sup> The fact that this show was by far the most popular suggests that visitors, as much as they

44 This information was collected from several decades’ worth of bi-monthly reports on the various Zeiss planetaria, compiled from each city’s own reports sent back to Jena; see CZ, BACZ 3075.

45 Tolischus, *Seeing Stars*, p. 98.

46 *Der Himmel der Heimat*, 1927, p. 1, CZ, ASTRO 0422.

enjoyed the disorienting “jazz age” effects, consistently preferred the grounding effect of seeing their own sky.<sup>47</sup>

The planetarium might be thought of as a kind of heterotopia, to borrow from Michel Foucault. In his essay *Of Other Spaces* he defines the term as “capable of juxtaposing in a single real place several spaces, several sites that are in themselves incompatible.”<sup>48</sup> Foucault cites as examples a theater, a cinema, and an ornamental garden, all of which are built specifically to contain multiple spaces at once – the physical space of the stage, for example, overlaid by the more imaginary space created by the theatrical set pieces. The zoo and the planetarium fit into this constellation of examples. The framework of the heterotopia is particularly fruitful when we consider one of the defining traits of the heterotopia, according to Foucault: that it has “a function in relation to all the space that remains.”<sup>49</sup> On one hand, the heterotopia can create a space of illusion “that exposes every real space [...] as still more illusory,” and on the other hand it can create a space of compensation, “as perfect, as meticulous, as well arranged as ours is messy, ill constructed, and jumbled.”<sup>50</sup> In both cases the space produced in the heterotopia reveals a truth about the space outside that otherwise might be obscured. In the case of the planetarium, with its shows that whet its audience’s appetite for spectacle and promoted an orientation around the *Heimat*, its technological illusions exposed the illusory qualities of the city outside, and offered viewers a calm, well-ordered cosmos away from the disorienting landscape that awaited them outside its doors.

#### V. “Right on Top of Each Other”: The Planetarium in the Electric City

In 1844, when the Zoo first opened, the area in which it stood was a relatively sedate corner of the western part of Berlin. By 1926, it stood in an entirely different-looking city. Beginning in the 1910s, the area along Tauentzienstraße and Kurfürstendamm developed into a vibrant, dazzling commercial center of flashy electric advertisements, variety shows, hotels, and cinemas.<sup>51</sup> In the midst of this spectacular environment, the Zoo train station opened onto a small constellation of landmarks of entertainment. To the south stood the Ufa Palast, which by 1925 was the largest cinema in Germany. Further down, near the Kaiser Wilhelm Memorial Church, stood the Capitol, the Marmorhaus, the Tauentzienpalast, and the Gloria-Palast. Sabine Hake has observed that

47 One cannot take this kind of speculation too far, of course; the lack of documentation and reports from viewers themselves prevents me from saying decisively why they preferred this performance, or why the planetarium put the performance on as much as it did. However, as I hope to show in the following section, *The Skies of Home* spoke to the planetarium’s ability to give viewers a respite from urban life by constructing a fantasy space of calm rural openness.

48 Michel Foucault, *Of Other Spaces*, in: *Diacritics* 16, 1986, pp. 22–27.

49 *Ibid.*, p. 27

50 *Ibid.*

51 Hake, *Topographies of Class*, p. 138.

the Kurfürstendamm area in this period “functioned as a showcase not only for a dazzling array of consumer goods and popular diversions but also for the most advanced architectural styles and designs.”<sup>52</sup> Those who celebrated it called it the “Broadway of Europe;” its detractors hated the sheer scale of its speed, light, and noise.<sup>53</sup> It was aggressively new, relentlessly modern in its renovations and rebuildings which erased the older structures and replaced them with what Peter Fritzsche has termed a “fugitive city,” or what Siegfried Kracauer called a “street without memory.”<sup>54</sup>

The Kurfürstendamm was even more dazzling at night, when the electric lights were turned on, and the street was bathed in a bright neon glow. Increased regulations on the brightness of electric advertisements in the 1920s drove the development of more sophisticated neon displays that were flashy but clear rather than simply blinding.<sup>55</sup> Far more than in other major European cities, Berlin experimented with the integration of these more flexible neon displays into the architecture of the buildings themselves, creating what Janet Ward called an “architecture of light.”<sup>56</sup> This was especially on display during the 1928 festival *Berlin im Licht*, in which the city was completely illuminated; all of the monuments, the major streets, and the large commercial buildings were bathed in electric lights, and on top of the Siegessäule, the Osram electric company mounted a neon sign that read “Light is life.”<sup>57</sup> The illumination of the streets at night created a palimpsestic second city, an electric façade on top of the one that existed during the day. This new neon night sky – completely artificial, and completely modern – stands in stark contrast to the electric sky produced by the planetarium, which was a sky that could only have been seen if all the lights were turned off.

The *Berlin im Licht* festival was only a particularly all-encompassing articulation of the more general integration of technology into the fabric of the city. For Kracauer and many of his contemporaries, this was profoundly disorienting; it required a constant reorientation on the part of those walking through those streets. The city itself became a spectacle in which, as Peter Fritzsche has put it, “the rapid alteration of images reduced dazzled spectators to the level of appearances and to the immediacy of *Erlebnis*.”<sup>58</sup> This feeling could be liberating and titillating – one feuilleton writer wrote that this fast-paced spectacle confounded “tourists seeking pleasure” but rewarded those

52 Ibid, p. 137.

53 Ward, *Weimar Surfaces*, p. 137, 181.

54 Fritzsche, *Reading Berlin*, p. 189; Siegfried Kracauer, *Straßen in Berlin und anderswo*, Frankfurt a.M. 1964, p. 23.

55 Frances Guerin, *A Culture of Light. Cinema and Technology in 1920s Germany*, Minneapolis 2005, p. 5.

56 Ward, *Weimar Surfaces*, p. 110.

57 Ibid., p. 107. Ward also notes that the number of lights on the Leipziger Straße inspired people to begin calling it the “Milky Way.”

58 Fritzsche, *Reading Berlin*, p. 131.

with a taste for adventure and exploration, willing to tour the depths of Berlin, “a metropolis of pleasure, equally dazzling whether by light or dark.”<sup>59</sup> Another wrote that “in the night air, which makes even the spires of the Gedächtniskirche flicker with excitement, there is a throbbing sense of expectancy. Everyone knows that every night Berlin wakes to a new adventure.”<sup>60</sup>

At the same time, however, a distrust of this technological adventure was articulated as a desire to get out of town and return to the countryside. Ludwig Finckh, fervid conservationist and, later, an equally enthusiastic member of the National Socialists, wrote in 1919, as this cultural landscape was establishing itself, that Berlin, “once a symbol of power and splendor,” is now “one of decay. Everything is topsy-turvy there; guns go off on their own, wolves have been turned into deer.”<sup>61</sup> “To the spirit of Berlin,” he concluded, “another must be opposed: *the spirit of Germany!*”<sup>62</sup> Finckh’s conservationism was informed and supported by his fascist distrust of the liberal wasteland of Berlin and his subsequent reverence for the provincial countryside.<sup>63</sup>

In her account of the concept of *Heimat* in the Weimar Republic, Celia Applegate has argued that “the language of *Heimat* helped people to ‘remember’ the lost Eden of their prewar lives” because *Heimat* “suggested stability, changelessness, harmony and purpose.”<sup>64</sup> The romanticism inherent in this attitude is clearly visible in something like Martin Heidegger’s 1933 radio broadcast *Schöpferische Landschaft: Warum bleiben wir in der Provinz?* in which he paints a lush picture of his “authentic” life among peasants in the country, where “the gravity of the mountains and the hardness of their primeval rock, the slow and deliberate growth of the fir tree, the brilliant, simple splendor of the meadows in bloom [...] moves and flows through and penetrates daily existence.”<sup>65</sup> At the end of the piece he recalls being offered a position at the University of Berlin, but declining after he consults his mute octogenarian farmer friend in the Black Forest.

*Heimat* in this period is often explicitly positioned against urban life – the spirit of Germany against the spirit of Berlin, or the spirit of communal life in the country against the atomization of the city.<sup>66</sup> There was a pervasive sense that city life necessitated a loss of some kind – a loss of heritage, of commu-

59 Curt Moreck, Wir zeigen Ihnen Berlin, in: Führer durch das “lasterhafte” Berlin, Leipzig 1930, p. 6.

60 Harold Nicolson, The Charm of Berlin, in: Der Querschnitt 9, 1932, p. 346.

61 Finckh, Der Geist von Berlin, p. 414.

62 Ibid, p. 415.

63 Frank Uekötter, The Green and the Brown. A History of Conservation in Nazi Germany, Cambridge 2006, p. 10.

64 Applegate, Question of *Heimat*, p. 68.

65 Martin Heidegger, Schöpferische Landschaft. Warum bleiben wir in der Provinz? in: Der Alemanne 1, 7 March 1934, 4.

66 See Lekan, Imagining the Nation in Nature, pp. 99–152.

nity, of togetherness – that a return to the *Heimat* could salvage.<sup>67</sup> There is a distinct echo of this sentiment in the planetarium literature of this period – by this I mean both the extant lecture notes, as well as the propaganda material and feuilleton articles about the planetarium. Specifically, much of the praise for the planetarium in this period is about its ability to respond to the atomization of modern man. There is a sense of urgency in this literature, a belief that the planetarium offers something that is not only enjoyable, but crucial, that it fills a dangerous hole created by a modern distancing of man from nature, and from one another. As one visitor to Berlin wrote, “Among the many drawbacks from which the modern city man suffers unbeknown to himself is his gradual loss of understanding and appreciation of the grandeur and fascination of nature, of which the most common and yet the most beautiful and overpowering spectacle is the starry sky above us.”<sup>68</sup> In the opening of the Berlin planetarium propaganda pamphlet, the authors write that “Many men live in large cities right on top of one another; their lifestyles make it so that they see very little of the sky at night as it truly is.”<sup>69</sup> A New York visitor touring all the German planetaria wrote that “the crowding of hundreds of thousands into large industrial centers is chiefly responsible for the decline of popular interest in the noblest of sciences.”<sup>70</sup> Overcrowding – men right on top of each other, underfoot, everywhere – is, in these formulations, directly responsible for the loss of a healthy appreciation for nature. The planetarium, by logical extension, is the place to reclaim it.

We find an ironic reworking of this sentiment in Walter Benjamin’s fragmentary impressions of Berlin, published in 1928 as *Einbahnstraße*. In the final section, titled *Zum Planetarium*, he writes that:

“nothing so distinguishes ancient from modern man as the former’s submission to a cosmic experience of which the latter is scarcely aware. [...] Classical dealings with the cosmos took a different form: intoxication [*Rausch*]. [...] Communicating ecstatically with the cosmos is something man can only do communally. Modern man is in danger of mistakenly dismissing such an experience as trivial, dispensable, and leaving it to the individual – a rush of enthusiasm on fine starry nights.”<sup>71</sup>

In Benjamin’s formulation, the planetarium’s artificial, technological cosmos might allow for a communal intoxication under the manufactured heavens.<sup>72</sup>

67 For a thorough overview of this sentiment, see Walter Lacqueur, *Young Germany. A History of the German Youth Movement*, New York 1962.

68 Otto D. Tolischus, “Seeing Stars”, in: *The World’s Work* 55, 1927, pp. 96–97.

69 *Das Planetarium der Stadt Berlin*, p. 13.

70 Kaempffert, *Now America Will Have a Planetarium*.

71 Walter Benjamin, *Einbahnstraße*, trans. J.A. Underwood, New York 2009, p. 113.

72 For a more in-depth analysis of this text in the context of Benjamin’s oeuvre, as well as contemporary conservative thought that Benjamin was ironically reworking, see von Hermann, “Der bestirnte Himmel über mir...”.



Fig. 4: The entrance to the planetarium, 1927. Courtesy Carl Zeiss Company Archives.

The desire for a reintoxication of man's relationship to the cosmos is addressed explicitly in the Berlin planetarium's promotional material:

"The view of the starry heavens offers because of its beauty an intense pleasure, and the philosopher Kant himself once said that his observation of the heavens filled his soul with an ever new and increasing admiration (*Bewunderung*) and reverence (*Ehrfurcht*). Doesn't the night sky, with its thousands of brilliant stars and the twinkling Milky Way, make a gorgeous picture? No beginning, no end in sight, everything in glorious disarray..."<sup>73</sup>

This paragraph is directly referencing Kant's *Critique of Practical Reason*, in which he wrote that what fills him again and again with this *Bewunderung und Ehrfurcht* is "the starry heavens above me, and the moral law within me."<sup>74</sup> In referencing the sublime heavens of Kant, the planetarium brochure offered the same experience of *Bewunderung und Ehrfurcht* to the visitors of the planetarium. The Berlin planetarium, we are meant to assume, was capable of these feats of enchantment, could produce the feeling of sublime, infinite nature that has somehow been lost in the bewildering overstimulation of the city.

73 Das Planetarium der Stadt Berlin, p. 11.

74 The former, he continues, begins from outside himself and enlarges "my connection to an unbounded extent with worlds upon worlds, and systems upon systems," whereas the latter "begins from my invisible self, my personality, and exhibits in me a world which has true infinity." Immanuel Kant, *Kritik der praktischen Vernunft*, in: Werkausgabe Bd. VII, Frankfurt a.M. 1974, p. 300 (Absatz 289).

## VI. Conclusion: To the Planetarium

When the planetarium lecturer speaks to the crowd, during *Der Himmel der Heimat*, he tells them that “only very rarely have any of us been permitted to see the sky as it really appears,” the implication is that the planetarium can offer that to its attendees – not a simulacrum, but the sky “as it really appears.” The starry firmament that the planetarium’s projection technology produces, of course, one that could never exist in the modern city. The stars are too clear, too numerous; the closest natural approximation to the planetarium sky would be, perhaps, an isolated mountaintop. A sky as clear as that produced by the Zeiss machine could never exist in a city polluted by light and smoke. Nonetheless, as has been shown here, visitors routinely praised the planetarium’s sky for its verisimilitude, its ability to recreate the real starry sky “as if by magic.”

This sky, the sky of the *Heimat*, is a sky unimpeded by the distractions of modern urban life; it is a sky “of the ancients,” as one visitor phrased it. The stars were “the world’s first motion picture theater... [the ancients] had no broad, smooth highways upon which to speed in automobiles. They had no cinema. They had no brightly lighted concert halls. The heavens at night were their theater.”<sup>75</sup> Thus the planetarium is celebrated for its ability to bring that ancient sky to modern city inhabitants, to give them the same intoxication that ancients would have felt. The planetarium is a space for people to come and, even for a brief moment, get out of town and immerse themselves in a darker, clearer, older sky.

Jeffrey Herf’s formulation of reactionary modernism is useful here for understanding the peculiar balance in the planetarium of both being a “jazz age” technology, able to spin and twirl and dance in jazz time, and fulfilling a desire to feel very far away from the overstimulation of the city. The reactionary desire to escape coexists in the planetarium with the thrill of technological prowess. This in-depth look at the Berlin planetarium is by no means the last word on reactionary modernism in this period, but I hope it can serve as an enrichment of the spatial dimension of this concept. Finally, the heterotopic experience that the planetarium offered, in its distortion of time and space, resonated with the dizzying culture of spectacle and distraction that characterized the city in this period. The planetarium, as both a *lieu de mémoire* and a *lieu de l’avenir*, offers a fuller understanding of Berlin and outer space in the Weimar Republic.

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75 Quoted in Griffiths, *Shivers Down Your Spine*, p. 137.