

HIDDEN CORNERS: EINSTEIN & ENGLAND

This year marks the centenary of the confirmation of Albert Einstein's general theory of relativity by English astronomers. [Andrew Robinson](#) explores the Library's collection of titles on the scientist.

We generally picture Albert Einstein in relation to Germany, where he was born in 1879, Switzerland, where he first became a physicist around the turn of the century, the United States, where he settled in Princeton during his last two decades until his death in 1955, or Israel, to which he willed his massive archives, kept at the Hebrew University of Jerusalem. Less often considered is Britain. Yet it would be no exaggeration to say that Britain is the country that made Einstein into the worldwide phenomenon he is today. My new book, *Einstein on the Run: How Britain Saved the World's Greatest Scientist*, is the first to be devoted to his relationship with Britain.

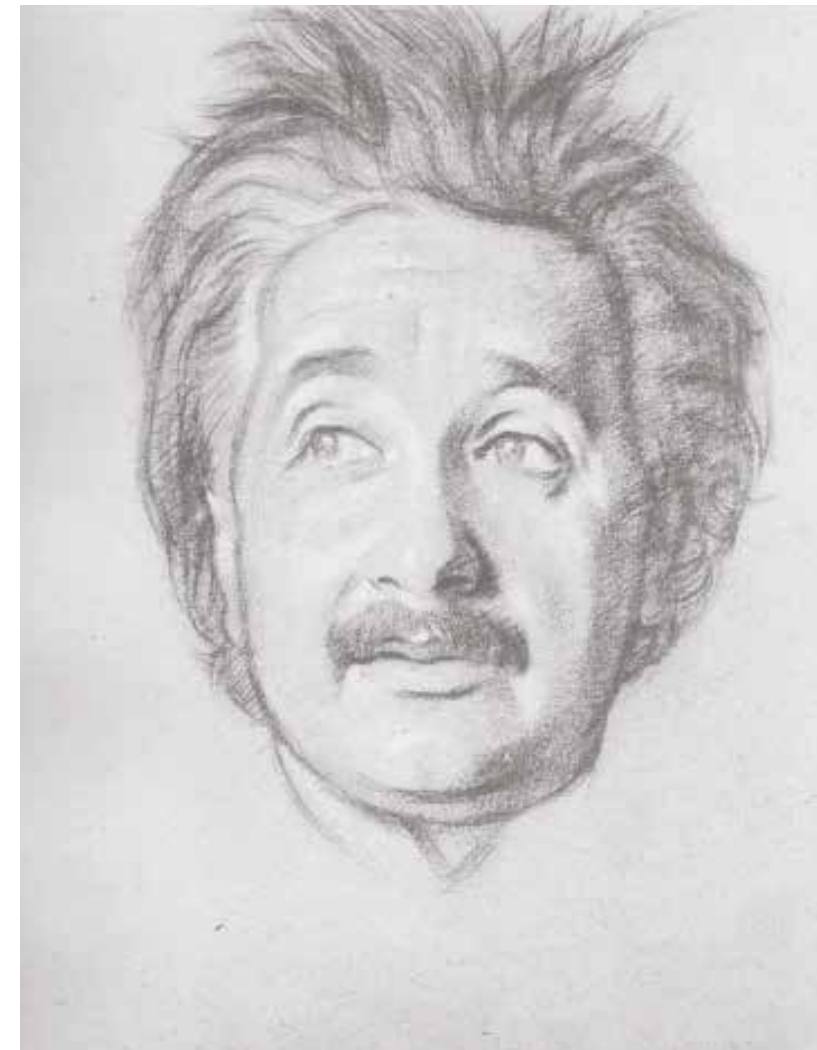
Naturally, I began my research at The London Library. Its extensive collection of titles by and about Einstein ranges from the Biography and Physics shelf marks to History, Philosophy and Religion – and even in Fiction we find the physicist Alan Lightman's novel *Einstein's Dreams* (1992). Inevitably, the collection forms only a fraction of what has been published – more than 1,700 individual books on Einstein at the latest count – although most of the really significant publications are included, some of which are highly technical. Top of the list for importance – if not always for readability – is *The Collected Papers of Albert Einstein*, a monumental project launched in the United States in the 1980s by Princeton University Press, which in 2018 published volume 15, *The Berlin Years: Writings and Correspondence, June 1925–May 1927*, leaving nearly three decades of Einstein's papers still to appear in print (and online).

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Using the Library collections, one gradually comes to appreciate why Einstein is one of the most widely quoted people of all time, and probably the most quoted figure from the twentieth century. Beyond science, Einstein was an avid commentator on education, marriage, money, the nature of genius, music-making, politics and more. ‘To punish me for my contempt of authority, Fate has made me an authority myself’, he joked in an aphorism written for a friend in Germany in 1930. That same year, at a speech in Einstein's honour in London, George Bernard Shaw (who knew Einstein personally) memorably remarked of him: ‘I rejoice at the new universe to which he has introduced us. I rejoice in the fact that he has destroyed all the old sermons, all the old absolutes, all the old cut and dried conceptions, even of time and space, which were so discouraging.’ To which a humble Einstein humorously responded (in German): ‘I, personally, thank you for the unforgettable words which you have

addressed to my mythical namesake, who has made my life so burdensome,’ yet who, ‘in spite of his awkwardness and respectable dimension, is, after all, a very harmless fellow’.

Einstein's personal relationship with Britain began in 1919, exactly a century ago. Until then, his name was known only to a handful of British physicists chiefly in Cambridge and Oxford, almost all of whom discreetly or openly distrusted Einstein's theory of relativity – not least because it was in conflict with the physics of Isaac Newton, which had been generally accepted since the seventeenth century. Einstein's ‘special’ theory, published in 1905, introduced a new understanding of space and time, including the equation that linked energy, mass and the speed of light: $E = mc^2$. It was followed 10 years later by the ‘general’ theory, in which Einstein extended the concept to include accelerated motion and gravity, based on a highly sophisticated mathematical conception of ‘space-time’. According to Newton's theory of gravity, light rays are attracted by gravitational forces because light is made of tiny particles that Newton called ‘corpuscles’. On their journey from a distant star to our eyes on Earth, the trajectory of these particles would be very slightly curved or ‘deflected’ by the gravity of the sun. Einstein agreed with Newton's idea, but in 1915–16 he used his general theory of relativity to recalculate the deflection of light and found that it would actually be twice the amount predicted by Newton. If the magnitude of the actual deflection could be measured, it would



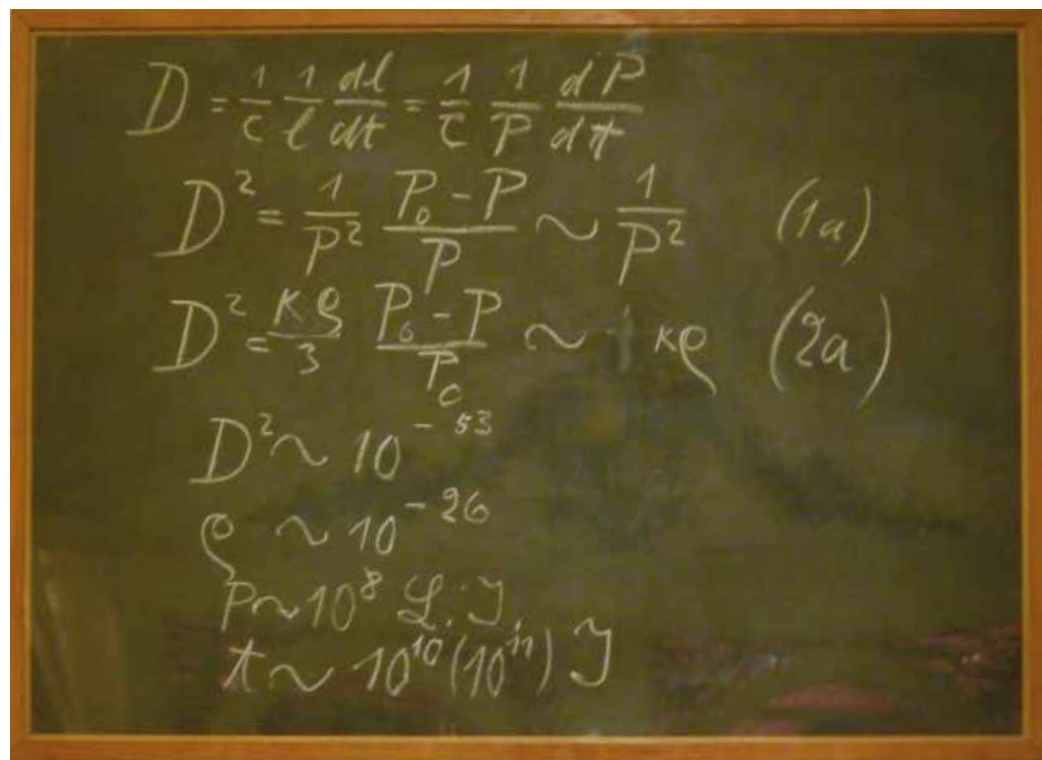
Left Drawing of Einstein by William Rothenstein in 1927, made in Einstein's study in Berlin.

Below Einstein with astronomer Arthur Eddington at the Cambridge Observatory, 1930, photographed by Eddington's sister, Winifred.



show whose theory of gravity was correct, Newton's or Einstein's. ‘The examination of the correctness or otherwise of this deduction is a problem of the greatest importance, the early solution of which is to be expected of astronomers,’ wrote the relatively obscure Einstein in wartime Berlin.

Then, in November 1919, Einstein suddenly became world famous when his general theory was confirmed in London by British astronomical observations of a May solar eclipse. These observations were led by Arthur Eddington, a Cambridge astronomer, whose life and work are described in fellow-astronomer Allie Vibert Douglas's accessible biography, *The Life of Arthur Stanley Eddington* (1956), and more recently in Matthew Stanley's up-to-date but academically oriented *Practical Mystic: Religion, Science, and A.S. Eddington* (2007). Eddington's first study, *Report on the Relativity Theory of Gravitation*, published in 1918 prior to the eclipse, and intended for the mathematically trained, is in the Library's Physics section of Science & Miscellaneous. So, too, is the first book in English about relativity for the non-scientific reader, the Oxford physicist Henry Brose's *The Theory of Relativity: An Introductory Sketch Based on Einstein's Original Writings including a Biographical Note* (1919). Though the book is long forgotten, its imprint page shows that Basil Blackwell published the book in Oxford in December 1919 and promptly reprinted it four times in four months, such was the sudden British public interest aroused by Einstein and relativity. Readable as it



Blackboard used by Einstein at Rhodes House, Oxford, in 1931. His calculations describe the density, size and age of the expanding cosmos, and contain a mathematical error. Preserved by Oxford dons against the wishes of Einstein, the blackboard is today the History of Science Museum in Oxford's most famous object.

is, Brose's book was soon overtaken by Einstein's own account (also in Physics), *Relativity: The Special and General Theory* (1920), written in collaboration with a physicist (and gifted populariser), Robert W. Lawson. This book was an immediate bestseller, and remains in print.

Einstein's entanglement with Britain was both intellectual and emotional. On the walls of his apartment in 1920s Berlin, and later in his Princeton house, Einstein hung portraits of three British physicists: Isaac Newton, Michael Faraday and James Clerk Maxwell – and no other scientists. In 1927, he wrote from Germany to a British physicist in Oxford, Frederick Lindemann (later Lord Cherwell): 'in England ... my work has received greater recognition than anywhere else in the world.' He escaped from Europe and the Nazis to the United States in 1933. In 1937, he told Max Born – a Nobel laureate like Einstein, and a fellow refugee now settled in Edinburgh – that Britain was 'the most civilised country of the day'. The comment appears in *The Born-Einstein Letters*, a classic work in Biog. Einstein. The book first appeared in 1971 just after Born's death, with a

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foreword by Bertrand Russell and an introduction by Werner Heisenberg, both of whom had known Einstein personally, if from very different angles: Russell as a philosopher and pacifist, Heisenberg as a physicist who attempted to build an atomic bomb for the Nazis.

A relatively unfamiliar fact, even to some Einstein biographers, is that in autumn 1933, before he settled in America, Einstein took refuge in England. The key text about the subject is probably *The Brown Book of the Hitler Terror* (1933), a pioneering if now seldom mentioned

volume, in H. German Republic. Compiled anonymously by a Stalinist secret agent, Otto Katz, using anonymous eye-witness accounts from Germany, and illustrated with horrendous photographs of victims of Nazi terror, it was officially published by the World Committee for the Victims of German Fascism on 1 August in German, and appeared a month later in an English edition published in London by the Communist sympathiser Victor Gollancz, with an endorsement by Einstein. Although he had nothing at all to do with the book's writing, Einstein's praise convinced the Nazi regime that he was in fact the book's author – as openly declared by the Nazi newspaper, *Völkischer Beobachter*, in late 1933. It commented furiously: 'In this book, in the foulest way, [Einstein] incites people against Germany, appeals for a preventive war and demands that this country, from whom the whole world has received only benefits, be manured with the blood of its people.'

Immediately, Einstein became public enemy number one of the Nazi regime, as arrestingly described by the Einsteins'



Der Hausmacht der Deutschen Wehrmacht in Belgien wurde beauftragt, einen dort herumlungelnden Juden von der Wehrmacht vorzuführen, er sei ein Spion, zu heilen.

Nazi view of Einstein, published in the *Deutsche Tageszeitung* on 1 April 1933, Germany's first national day boycotting its Jews. It shows Einstein being booted out of the German embassy in Brussels. Soon after, he applied for release from German citizenship, having relocated his residence from Germany to Belgium.

'Whether the story is true or not we do not know,' warned the *Sunday Times* on 10 September, but if it were, 'the Nazi hotheads' should 'take fair warning and think twice of this folly before it is too late. If they should commit this crime against humanity the conscience of the whole civilised world will rise against them, and the German Government will find itself execrated and isolated as no German Government has been before or since the war.'

By the time this comment appeared, Einstein was in England. As discussed in Ronald W. Clark's biography, *Einstein: The Life and Times* (1971) – a deeply researched study including many interviews with people personally involved with Einstein – on 9 September, at his wife's insistence, Einstein had packed a few bags with vital books and papers, and caught a boat and train from Belgium to London. He settled in England – but not in Oxford, whose university had welcomed him in 1931 and 1932, then sheltered him as a refugee in May and June 1933, as vividly recalled by the Oxford economist Roy Harrod in *The Prof: A Personal Memoir of Lord Cherwell* (1959). Instead he stayed in a secret holiday hut on a remote heath in Norfolk. There, under the armed protection of Commander Oliver Locker-Lampson, a Conservative MP and First World War veteran, he could supposedly concentrate on theoretical physics, away from prying eyes.

Yet although Einstein felt deep gratitude to, and admiration for, England – for inspiring his love of physics as a teenager in the 1890s; for confirming his immortal theory of relativity in 1919; and for saving his life in 1933 – he did not settle in England and instead went to America, never to return to Europe, even after the Second World War. There, attached to the newly founded Institute for Advanced Study in Princeton, Einstein enjoyed – exactly as he chose – both perfect solitude in his study at home and also interaction with the world's leading physicists at the Institute. For Einstein, throughout his life, personal freedom and scientific research always took precedence over human relationships. In *Einstein Lived Here* (1994), the physicist Abraham Pais, who knew Einstein well at Princeton, wrote: 'If I had to characterise Einstein by one single word, I would choose *apartness*.' ●

Polish friend, Antonina Vallentin, who was present in their exiled home in Le Coq on the coast of Belgium at the time. Her book *Einstein: A Biography* (1954) is an eyewitness account that has been somewhat neglected by later Einstein biographers. 'Belgium was dangerously near Germany,' recalled Vallentin after a visit to the Einstein house in August 1933. 'There was a rumour that [Hermann] Göring's brother had come to Le Coq. Men with foreign accents asked too many questions about Einstein. Suspicious individuals roamed around the house.' One such approach started with a letter from an unknown man urgently requesting an interview with Einstein: an incident related by Einstein's wife, Elsa, to an Austrian physicist, Philipp Frank, who also visited the Einsteins in Belgium, and described the story in *Einstein: His Life and Times* (1948). Elsa refused the man for fear of trouble, but when he repeatedly insisted, she agreed to see him alone without her husband. The man informed her that he was a former Nazi storm trooper who had fallen out with the Brown Shirts and was now opposed to them. He

was willing to sell Einstein all the secrets of the paramilitary organisation for 50,000 francs. 'Why do you assume that Professor Einstein is interested in the secrets of your former party?' asked Mrs Einstein. 'Oh, we all know very well that Professor Einstein is the leader of the opposing party throughout the entire world, and that such a purchase would therefore be very important to him,' the stranger ingenuously replied, as a deeply worried Elsa reported to Frank.

Belgian policemen, on instructions from the Belgian king, protected Einstein night and day. But he was plainly at risk, especially after the murder by Nazi agents in Czechoslovakia on 30 August of an Einstein associate, the Jewish philosopher Theodor Lessing (much of whose work appears in German in the collections). On 8 September came international press announcements that a secret Nazi terror organisation, the Fehme (associated with the murder of Germany's foreign minister, Walther Rathenau, in 1922), had placed a price on Einstein's head: £1,000 according to the London *Daily Herald*; 20,000 marks, said the *New York Times*.