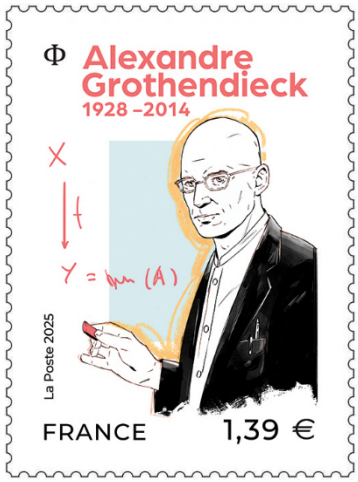
ALEXANDRE GROTHENDIECK (March 28, 1928 – November 13, 2014)

by HEINZ KLAUS STRICK , Germany



© La Poste 2025
© création Faunesque

In June 2025, the French postal service issued a stamp to commemorate an extraordinary person, the mathematician ALEXANDRE GROTHENDIECK.

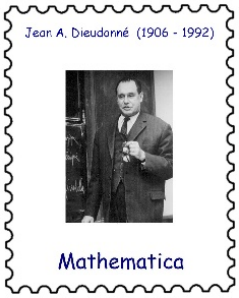
He was born in Hamburg to journalist HANKA GROTHENDIECK and photographer ALEXANDER SCHAPIRO – initially named ALEXANDER RADDATZ, as his mother was still married to ALFRED RADDATZ at the time of his birth. After divorcing her husband in 1929, the boy received his mother's surname.

The father, a Russian Jew, had joined the insurgents as a teenager during the 1905 Revolution and, after the uprising's failure, was sentenced to life imprisonment. During the October Revolution of 1917, he escaped from prison (losing an arm in the process), joined an anarchist group, was recaptured, and escaped again. As an exile, he then lived under the name ALEXANDER TANAROFF , first in Paris, then in Berlin; it was there that he met HANKA .

The couple continued to live in Berlin with their son ALEXANDER and his half-sister MAIDI until HITLER's rise to power. Although TARANOFF's Jewish heritage was not apparent from his name, he was aware of the danger he faced and fled into exile in Paris in early April 1933. HANKA GROTHENDIECK followed at the end of 1933; she placed her son ALEXANDER in the care of the pastor and his wife HEYDORN in Hamburg, and her daughter MAIDI (from her marriage to RADDATZ) in an institution in Berlin. In 1936, the parents joined the Republicans in the Spanish Civil War; after FRANCO's victory, they returned to France in early 1939.

Meanwhile, the situation in Germany had also become dangerous for ALEXANDER, as the HEYDORNS' resistance activities had not escaped the Gestapo's notice. After contacting his parents, they put the 11-year-old boy on a train to France; ALEXANDER then lived with his mother in Nîmes until the outbreak of war. Mother and son, along with other Germans, were interned as undesirable aliens in a camp near Pau (Pyrenees); the father, who was initially sent to a different camp, was handed over to the German occupiers by the Vichy regime in 1942 and murdered in Auschwitz-Birkenau.

Despite his internment, the boy (now ALEXANDRE) was able to attend a school outside the camp. Somehow, he managed to escape and reach Chambon-sur-Lignon (Haute-Loire department). There, in 1938, priests of the Reformed Church had founded the secluded *Collège Cévenol* to provide refugee children from Spain and Germany with a home and a higher education. During school inspections, the children of Jewish origin hid in the surrounding woods. (The founders of the Collège were later honoured as *Righteous Among the Nations*.)



ALEXANDRE GROTHENDIECK completed his *Baccalauréat* and subsequently lived with his mother in Montpellier. There he began studying mathematics, but found it unsatisfying, as, for example, measure theory only taught the calculus itself, without explaining why it occurred. Through his own reasoning, he arrived at concepts corresponding to the general LEBESGUE integral. After completing his undergraduate studies, he transferred in 1948 to the *École Normale Supérieure* in Paris, where the world's leading mathematicians, HENRI CARTAN and ANDRÉ WEIL, were teaching at the time. Their research focused on *algebraic topology* (the study of topological spaces using algebraic invariants). Since GROTHENDIECK

preferred to work on *functional analysis* (the study of mappings between infinite-dimensional vector spaces), the two advised him to continue his studies at the *Université Henri Poincaré* in Nancy under JEAN DIEUDONNÉ and LAURENT SCHWARTZ (winner OF the FIELDS Medal in 1950). In their Saturday seminar for professors and selected students, a list of 14 open questions emerged, the resolution of which seemed essential for the further development of the theory. Solving just *one* of these problems would certainly have sufficed as the basis for a doctorate – but GROTHENDIECK misunderstood this and solved all 14 problems within a year using methods he had developed himself. In 1953, he received his doctorate for a dissertation on a topic in functional analysis. GROTHENDIECK received his doctorate from SCHWARTZ and DIEUDONNÉ (title: *Produits tensoriels topologiques et espaces nucléaires*). Afterwards, he lost interest in this specialized field: "*There's nothing more to do, the topic is dead*."

Since there was no position available for him as a stateless person at French universities (he only applied for French citizenship in 1971), GROTHENDIECK took on teaching assignments at the universities in São Paulo and Kansas, then returned to the *Centre National de la Recherche Scientifique* in 1956 and became an active member of the BOURBAKI group around WEIL, CARTAN and DIEUDONNÉ.

In 1958, he was invited to give one of the keynote addresses at the International Congress of Mathematicians (ICM) in Edinburgh; after that, he finally received an offer commensurate with his qualifications: a research position at the private *Institut des Hautes Études Scientifiques* (IHÉS) in Bures-sur-Yvette (30 km south of Paris). In addition to tenured professors (*chercheur*), 200 "visitors" are still invited each year for a three-month research stay.

During the following twelve years, his seminar became the worldwide center of research on topics of so-called *algebraic geometry* (investigation of the zero structures of arbitrary algebraic equations).

The French stamp depicts a typical situation from the academic daily life of the charismatic teacher ALEXANDRE GROTHENDIECK: shaved head (like his father, whom he greatly admired) and usually barefoot, he stood highly focused before the blackboard, lecturing or engaging in dialogue with his audience. He was always full of energy, constantly developing new approaches to thinking, inventing new structures through which he connected subfields of mathematics that had previously had no links; he could work for 12-16 hours without a break. GROTHENDIECK also regularly gave guest lectures at *Harvard University*; in 1965 he was elected a member of the *American Academy of Arts and Sciences* .

He was awarded a FIELDS Medal at the ICM Congress in Moscow – but as a committed pacifist, he declined the trip to the Soviet capital (the head of the IHÉS accepted the prize in his place). In 1967, he travelled to Hanoi to give lectures in protest against the American bombing of North Vietnam.

When he learned in 1969 that the IHÉS was partly funded by the French army, GROTHENDIECK resigned his position in protest. His appeal to his colleagues to do the same went unanswered. After twelve years of intensive work at the IHÉS, he felt burned out. The fact that the students did not consider him one of their own during the 1968 student protests had deeply affected him. He had also begun to doubt himself—regarding his work as a mathematician and as a scientist in general, since this work was being done "in a gilded cage" and offered no benefit to the public. He left his wife and their three children, with whom he had lived for the past few years, and founded the group *Survivre et vivre* with friends to campaign against the arms race, nuclear power, and environmental pollution.

In the following years, although he accepted offers for guest lectures at the *Collège de France* and the *Université de Paris* , he primarily used these opportunities to advocate for peace and environmental protection. He behaved similarly at the 1970 ICM Congress in Nice – much to the annoyance of his former patron DIEUDONNÉ, who chaired the congress and had invited him to speak.

GROTHENDIECK moved to a small village on the southern edge of the Cévennes mountains and took over introductory lectures at the University of Montpellier (until 1984) – surprisingly, he was able to adapt to the students' level. In the following years, he wrote hundreds of pages, which he sent to individuals – a mixture of autobiographical notes, new professional concepts, and esoteric meditations influenced by Buddhism and Christian mysticism.

When he was to be awarded the CRAFOORD Prize of the *Royal Swedish Academy of Sciences in 1988* (together with his student PIERRE DELIGNE), he declined it, partly because of the “moral decay” of his colleagues.

In 1992, GROTHENDIECK , one of the most important mathematicians of the 20th century, broke off all contact with his former colleagues and friends and retreated to a primitive dwelling at the foot of the Pyrenees, where he lived as a hermit from then on. When he died in 2014, many thousands of manuscript pages were discovered, the analysis of which is far from complete.

Published in January 2026 by Heinz Klaus Strick

https://mathematik-ist-schoen.jimdoweb.com/

Translated by John O'Connor, University of St Andrews

Here is an important hint for philatelists who also like individual (not officially issued) stamps. Inquiries at europablocks@web.de with the note: "Mathstamps".