MARTIN Schwarzschild told us Princeton graduate students, that in Italy his job was to drive in his jeep to the various US artillery units, and compute trajectories for them...

Schwarzschild discovered this solution to the EFE while fighting for Germany on the Russian front during World War I. After volunteering for service, he had been "commissioned as a lieutenant and attached to the headquarters staff of an artillery unit, serving first in France and later on the Eastern front. His assignment was to calculate trajectories for long-range missiles ..." (DSB). His artillery work "does not seem to have taken up all his time, for as soon as he had received Einstein's reports to the Prussian Academy [i.e., the tetralogy of papers in which Einstein had estimated the perihelion precession and then restated the EFE in its final form] he managed to provide the first complete solution of the field equations in the case of a large mass with a spherical gravitational field. On behalf of the absent Schwarzschild, Einstein submitted his calculations to the [Prussian Royal] academy on January 13, 1916. Schwarzschild's precise calculations made no difference to the result [for Mercury’s perihelion precession] found by Einstein’s approximations." (Albrecht Fölsing, Albert Einstein, 1997.)

Schwarzschild transmitted the solution to Einstein in a letter dated December 22, 1915. Addressing his correspondent as "Verehrter Herr Einstein!" ("Esteemed Mr. Einstein!"), he said that "[i]n order to become versed in your gravitational theory, I have been occupying myself more closely with the problem you posed in the paper on Mercury’s perihelion and solved to the 1st-order approximation. ... Thereupon, I took my chances and made an attempt at a complete solution. A not-overly lengthy calculation yielded the following result [which he proceeded to describe]. ... It is a wonderful thing that the explanation for the Mercury anomaly emerges so convincingly from such an abstract idea. As you see, the war is kindly disposed toward me, allowing me, despite fierce gunfire at decidedly terrestrial distance, to take this walk into your land of ideas." (Einstein Papers, vol. 8A, Doc. 169).

Einstein received this letter — sent from the front, during a war, in the middle of a holiday season — in time to respond to it by December 29 (a fact that forces one to reflect that the postal system, at least, hasn’t improved in the last century). Addressing Schwarzschild as "Hoch geehrter Herr Kollege!" ("Highly esteemed Colleague!"). Einstein said that Schwarzschild's calculation was "extremely interesting. I hope you publish it soon! I would not have thought that the strict treatment of the [mass-point] problem was so simple." He also noted that he was "very satisfied with the theory [of general relativity]. It is not self-evident that it already yields Newton’s approximation; it is all the more gratifying that it also provides the perihelion motion and line shift, although it is not yet sufficiently secure. Now the question of light deflection is of most importance." (Id., Document 176).

Schwarzschild sent Einstein his complete paper, and Einstein responded at length on January 9, stating that “[t]he mathematical treatment of the subject appeals to me exceedingly. Next Thursday I am going to deliver the paper before the Academy with a few words of explanation.” (Id., Document 181). This last letter is also interesting since in it, Einstein steps back from his theory to consider its implications for the ontology of space, which he describes in Machian terms, stating that “[u]ltimately, according to my theory, inertia is simply an interaction between masses, not an effect in which ‘space’ of itself were involved, separate from the observed mass. The essence of my theory is precisely that no independent properties are attributed to space on its own.”