data; but that its excellence when established is in the number of observations which it explains. The multiplicity of observations which are explained by astronomy, and which are made because astronomy explains them, is immense, as I have noted in the text. And the multitude of observations thus made is employed for the purpose of correcting the first adopted elements of the theory. I have mentioned some of the examples of this process: I might mention many others in order to continue the history of this part of Astronomy up to the present time. But I will notice only those which seem to me the most remarkable.

In 1812, Burckhardt's *Tables de la Lune* were published by the French Bureau des Longitudes. A comparison of these and Burg's with a considerable number of observations, gave 9-100ths of a second as the mean error of the former in the Moon's longitude, while the mean error of Burg's was 18-100ths. The preference was therefore accorded to Burckhardt's.

Yet the Lunar Tables were still as much as thirty seconds wrong in single observations. This circumstance, and Laplace's expressed wish, induced the French Academy to offer a prize for a complete and purely theoretical determination of the Lunar path, instead of determinations resting, as hitherto, partly upon theory and partly upon observations. In 1820, two prize essays appeared, the one by Damoiseau, the other by Plana and Carlini. And some years afterwards (in 1824, and again in 1828), Damoiseau published *Tables de la Lune formées sur la seule Théorie d'Attraction.* These agree very closely with observation. That we may form some notion of the complexity of the problem, I may state that the longitude of the Moon is in these Tables affected by no fewer than forty-seven *equations;* and the other quantities which determine her place are subject to inequalities not much less in number.

Still I had to state in the second Edition, published in 1847, that there remained an unexplained discordance between theory and observation in the motions of the Moon; an inequality of long period as it seemed, which the theory did not give.

A careful examination of a long series of the best observations of the Moon, compared throughout with the theory in its most perfect form, would afford the means both of correcting the numerical elements of the theory, and of detecting the nature, and perhaps the law, of any still remaining discrepancies. Such a work, however, required vast labor, as well as great skill and profound mathematical knowledge.