The most certain and true Method of taking the Latitude of the Southmost part of Philadelphia will be in my opinion to observe the Zenith Distance to the Northward of some Star or Stars whose North Declinations are greater than the Latitude of the Southmost Point of Philadelphia and less than the Latitude of Greenwich whose Latitude has been determined by repeated Observations of every kind suitable to the purpose to be 51°, 28', 39", or 40". Capella as being a Star of the said Magnitude very nearly equidistant from the Zenith (at that place) and frequently observed at Greenwich will be the fittest Star to be agreed upon.

Let then the apparent Zenith Distance of Capella be observed one or more Nights on the Meridian with the Face of the Instrument turned to the East and afterwards with its Face turned to the West. Half the sum of these Zenith Distances will be the Stars Exact Apparent Zenith Distance, which is made by Refraction will be the true Zenith Distance; which added to the true Zenith Distance of the same Star taken about the same time at Greenwich, South of the Zenith gives the true Distance of the Parallels of Latitude of the two Places which Distance subtracted from the Latitude of Greenwich leaves the true Latitude of the Southmost point of Philadelphia,

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Exemple.

Suppose that about the Beginning of February 1751 old Style at the Southmost Point of Philadelphia with an Instrument the Plane of whose Limb was placed in the Meridian with its Face inspected the East, the apparent Zenith Distance of Capella Northward was observed to be 5°, 46', 15" and again the next Night or some after with the Face westward the same was found to be 5°, 45', 21" I understand that about the same time the Stars apparent Distance from the Zenith Southward at Greenwich was observed 5°, 45', 40" I desire the Latitude sought thus.

At Philadelphia	The Face Eastward Zenith Distance Northward	5°. 46'. 15"
	The Face Westward Zenith Distance Northward	5°. 45'. 21"
Sum of the Zenith apparent Distances at Philadelphia		11°. 31'. 36"
Half sum or exact apparent Zenith Distance at Philadelphia		5°. 45'. 40"
Refraction Add		6"
Correct n true Zenith Distance Northward at Philadelphia		5°. 45'. 56"
Exact apparent Zenith Distance at Greenwich Southward		5°. 45'. 40"
Refraction Add		6"
Correct n true Zenith Distance Southward at Greenwich		5°. 45'. 46"