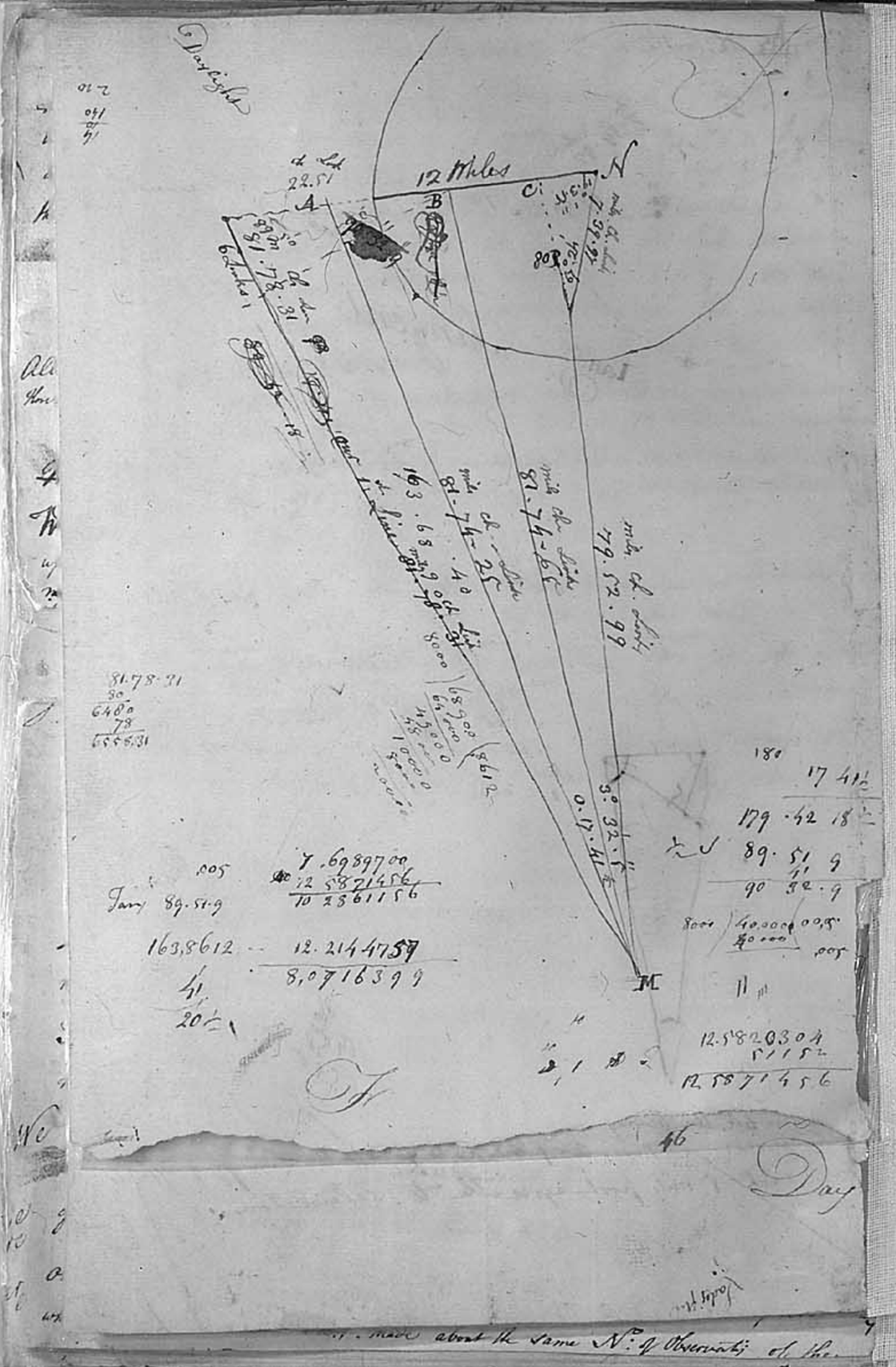


1763

November 8 15th Arrived at Philadelphia.

16 Attended a meeting of the Commissioners appointed by the Proprietors of Pensylvania to settle the boundaries of the Province.

17 Wrote to his Excellency Horatio Sharpe Esq: Governour of Maryland, signifying our arrival at Philadelphia.

22 Landed the Instruments.

25 Set up the Sector } and found they had not receiv'd
28 Set up the Transit } any damage.

30 The Commissioners appointed by ~~Lord~~ Baltimore to settle the Boundaries of Maryland came to Philadelphia.

December 1st 1 Attended a meeting of the Commissioners of both Provinces, and set up the compound Instrument of Lord Baltimore's.

2d Attended a meeting of the Commissioners.

3d Attended Do.

5th Attended Do. and directed a Carpenter to build an Observatory near the Point settled by the Commissioners to be the South end of the City of Philadelphia.

6th Set up a Sector brought by the Commissioners from Maryland. and found the Screws would not touch the middle part of the Arch. Was sworn before the Commissioners.

7 Attended the Commissioners.

8 Carried some of our Instruments into the Observatory.

9 Attended the Commissioners, and received our Instructions.

10
11
12
13 } Got the Observatory finish'd. and fixed up our Instruments proper for Observing.

14 Rain & Snow

15 Do

1767
October

♄ — 10 The Indians will us still persisting that they will not go any farther westward with y Line; we sent for the Sector which was left at our Store House at y Forks of Cheat & the Manaungahela.

☉ — 11 Set up the Sector in the Direction of our Line at the distance of 233 Mls. 13 Chains & 68 Link from y last mark'd West in Mr. Bryan's Field, and made the following Observations.

Plane East

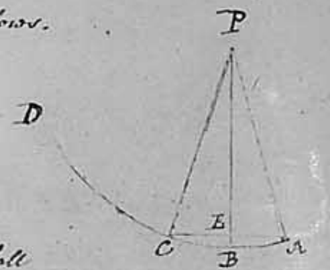
	Capella —	6. 0 +	6. 15 / 5. 22½	0. 44,5	6. 0. 44,5
☽ — 12	α Lyræ —	1. 10 −	8. 17 / 6. 15½	1. 45,5	1. 8. 14,5
Sent the Ax Men to clear a Vista in the true Parallel East of y Manaungahela, while we are making our Observations.	δ Cygni	4. 50 +	5. 50½ / 4. 19½	1. 23,0	4. 51. 23,0
	γ ♑ —	0. 10 +	6. 2 / 7. 44 +	1. 34,3	0. 11. 34,3
	α ♑	4. 45 −	9. 48 + / 10. 22 +	0. 26,8	4. 44. 34,1
	Capella —	6. 0 +	1. 13 − / 0. 23 +	41,4 / +33,4	6. 0. 41,4
♂ — 13	α Lyræ	1. 10 −	8. 51 + / 6. 49½	1. 45,8	1. 8. 14,2
	δ Cygni	4. 50 +	6. 30 − / 4. 49	1. 24,7	4. 51. 24,7
	γ ♑ —	0. 10 +	6. 8½ / 8. 0 −	1. 35,2	0. 11. 35,2
	α ♑ —	4. 45 −	10. 43 / 11. 17	0. 26,0	4. 44. 34,0
	Turn'd the Sector Plane West				

1767
October

♃ — 14.	Cloudy.				
♃ — 15	α Lyræ —	1. 10 −	6. 2½ / 8. 8 −	1. 49,2	1. 8. 10,8
	γ Cygni —	4. 50 +	4. 48 / 3. 8½	1. 31,5	0. 11. 31,5
	α ♑ —	4. 45 −	3. 44 / 3. 18 −	0. 26,3	4. 44. 33,7
	Capella	6. 0 +	14. 38 / 15. 35½	0. 49,5	6. 0. 49,5
♀ — 16	α Lyræ	1. 10 −	7. 6 − / 9. 9 −	1. 47,0	1. 8. 13,0
	δ Cygni —	4. 50 +	9. 8½ / 10. 44 +	1. 27,8	4. 51. 27,8
	γ ♑ —	0. 10 +	9. 15½ / 7. 27½	1. 32,0	0. 11. 32,0
	α ♑	4. 45 −	5. 31 − / 5. 5 −	0. 26,0	4. 44. 34,0
	Capella —	6. 0 +	3. 38 − / 4. 35½	0. 49,8	6. 0. 49,8
♄ — 17	α Lyræ —	1. 10 −	5. 40 − / 7. 45 +	1. 49,6	1. 8. 10,4
	δ Cygni	4. 50 +	7. 35 / 9. 18	1. 27,0	4. 51. 27,0
	γ ♑ —	0. 10 +	8. 22½ / 6. 35½	1. 31,0	0. 11. 31,0
	α ♑.	4. 45 −	6. 15 − / 5. 42	0. 24,7	4. 44. 35,3
☉ — 18	Computing our Observations as follows.				
	Sent for the Ax Men from y East side of the River Manaungahela.				

1765 March ♀ 1st

Began to prepare for running the Western Line: the method of proceeding as follows.

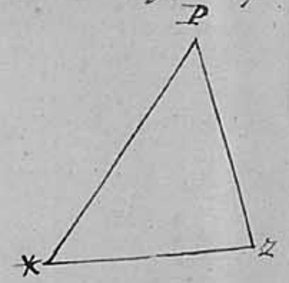


Let P. the Pole. ABCD the Parallel of Latitude to be drawn.

AC the arch of a great Circle at pleasure suppose = 10′ (which we shall set out with on the first station. and in order to find the direction AC. there is given in the Right angled Sphe. Triangle EPA.

AP = Comp: Lat: = 50°.16′.42″.6 } Hence ∠ PAE = 89°.55′.51″ =
AE = ½ AC = 5′ . . .

the angle from the North, Westward: and to lay off this angle with the Transit Instrument by the Stars; Let P be ye Pole, Z ye Zenith & ✱ the place of ye ✱, then in the Oblique angled Spherical Triangle ✱PZ. there is given



✱P = the ✱'s distance from ye Pole
ZP = the Comp: of the Latitude
∠ ✱ZP = 89°.55′.51″ = the ✱'s Azimuth from the North when it will be on the direction AEC above: To find the angle ✱PZ or angle at the Pole when the ✱ is on the said Azimuth. — — —

The ∠ ✱PZ being added to the ✱'s Right ascen: if to the Westward of ye Mid or Subtracted if the Star is to the Eastward; gives the Right ascension of the Mid-Heaven, when the star is upon the Azimuth Required.

In this manner the Right Asc: of the Mid-Heaven for different ✱'s are as follows. ——— Next to find ye Clock when the ✱ will be on the said Azimuth, two Equal altitudes of some ✱'s before the time; are observed, whence the time is gain'd; At this instant of time the Middle Wire is brought to bisect the ✱, and in that position (The Axis of ye Telescope, ye being Horizontal) the vertical axis is made fast: Then the Telescope is brought parallel to the Horizon, and a Mark set by the help of a Candle (at the distance of ½ or ¾ of a mile) that the middle wire bisects it. ———

In this manner we proceed with 3 or 4 different ✱'s. and find that at the distance of ½ a mile the extremes of the distances of the Marks made by the different ✱'s will not in general exceed 5 or 6 Inches. ———

The line AC being run with the Transit Instrument, at C. we set up the Sector to prove or correct the work, by Observing the Zenith Distances of the same stars that was observed at the point A.

At C. we find a new direction as before &c &c ———

The greatest distance EB to be laid off from the right Line AEC when AE = 5′ is 17,14 feet.

From the foregoing observations the Zenith distance of Cappella at the Obs: ... 6°.0'.26",6 N°, and of α Lyrx ... 1°.8'.47",0 S°

in the Forks of Brandiwine their Zenith distances were ... 5.47.32,3 ... α Lyrx ... 1.21.44,2 N°

12.54.3 ... 12.57,2

Difference ... 57,2

Mean ... 12.55,8 This corresponds to 1176,17 chains Links

= the distance on a Horizontal measure between the points where the Sector stood. Hence then the Real quantity corresponding to the 10",5 that the Sector stood South in the Forks of Brandiwine, we have thus

As 12'.55",8 : 1176,17 ch. L. :: 10",5 : 15,92 ch. L.

But in our measurement we allow'd 16.23 ch. L. for 10",5 ... 16.23

Hence the true point is ... 0.31 South of the Point 7.60 ch. Links. that is 7.91 ch. L. S° of the Sector in the Observatory. And the angle correspond: to this will be As 1176,17 ch : 12'.55",8 :: 7.91 ch. L : 5",2 to be apply'd to the Stars Zen: Distances, allready done in the page before.

As 12'.55",8 : 1176,17 chains :: 60' : 5457,865 chains = 68,223 miles =

∴ hence 33,35 Yards = one Second. ∴ 100,05 feet = 1": This determination by two Stars Obs: at Brandiwine and at the End 15 Miles S°: The following by three ✱'s Observ'd at the said End, and at Philadelphia.

Note.

The Point 15 Miles South of the Southernmost Point of the city of Philadelphia is Situated in Millercek Hundred in the County of Newcastle, in a Plantation belonging to Mr. Alexander Bryan.

The Middle of the Front of Mr. Bryans House, bears from the Point 37°.52' North westerly distant 23.38 Chains (each chain 22 Yards).

It is close by the East Side of a small Run, the Head of which is due North distant 5,00 Chains.

From the Point to the Middle of a Rivelet call'd Muddy Run, on a due South Course is 7,15 Chains.

For the Latitude at the End of ✱ 15 Miles South of Philadelphia.

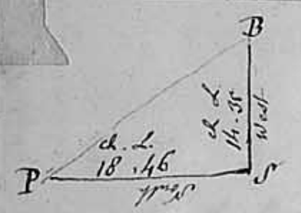
	Capella	α Lyre	α Cygni
True Zen: Dist: 1st Jan: 1764	6°.0'.31,8	1°.8'.41,8	4.43.31.2
Decl: 1st Jan: 1764	45.43.53.0	38.34.34.0	44.26.48.9
Lat:	39.43.21,2	43.15,8	43.17,7
	15,8		
	17,7		

Mean ... 39.43.18,2 = Lat: North.

The Lat: South Point of Philadelphia ... 39.56.29,1

Difference ... 13.10,9 Corresponding Horizontal Statute Miles. Then

As 13'.10",9 : 15 :: 60' : 68,277



B. Mr. Bryans

P. The Point 15 Miles S° of Philadelphia

S. a Station North of the point P, and B due west from S.

As PS 1846	3.2662317
: Rad:	10.
:: SB 1435	3.1568519
: Tang < P 37°.52'	9.8906202

Thus Mr. Bryans House bears 37°.52' N° westerly.

As Sine B 52°.8	9.8973199
: PS 1846	3.2662317
:: Rad	10.
: PB 23,38	3.3689118

Hence the distance of Mr. Bryans House from the Point is 23,38 Chains.

32

32-A

...et out for ...d Chesepeak

...aily) to go

...ght.

...oke; pitch'd our Tents on its Banks.

... The whole company including Steward, Tent ...&c. amounting to 39. Two Waggons, Eight

...oke in Conoos and went to the Middle ... Instrument and began to produce an Arch of ...on last run.

... the 1st 2d & 3d Miles Posts.

32 B