

# **Stargazers, Ax-men and Milkmaids The Men who Surveyed Mason and Dixon's Line**

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## **ABSTRACT**

In 1763, Charles Mason and Jeremiah Dixon were called upon by the colonial proprietors of Pennsylvania and Maryland to demark the long disputed boundary that eventually came to bear their name. During the ensuing four years, Mason and Dixon cleared a line (visto) eight or nine yards wide through the virgin forests of the western frontier, crossed the Allegheny Mountains, and set 500 pound monuments every mile along the way.

While it is true that Mason and Dixon accomplished the task of establishing and marking the complex boundary between the Penn's and Calvert's, it can hardly be said that they did it alone. This tremendous undertaking required the skills and labor of a large work party. During the late summer of 1767, as many as 115 men were employed as ax-men, instrument bearers, cooks, tent keepers, shepherds and even a milkmaid.

The journal of the survey that was kept by Charles Mason contains a wealth of information pertaining to the measurements and astronomical observations taken during the course of the survey. Little is mentioned in his journal about the men who were employed for the work or of the tremendous undertaking necessary to clear the lines for the surveyors to perform their observations.

Moses McLean, a colonial surveyor, was hired as the Steward of the survey and was charged with the management of the work force necessary to accomplish this tremendous undertaking. McLean, who along with his brothers Archibald, Samuel and Alexander had been involved only a few years before with the difficult task of surveying the 12-mile radius northern boundary of the present day state of Delaware. McLean kept detailed ledgers of the names of those employed, their time and wages as well as daily receipts and expenses. From these ledgers, we are able to gain insight into the magnitude and complexity of surveying Mason and Dixon's Line.

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For 80 years, the Calvert and Penn families had argued and negotiated to bring about a resolution to the boundary dispute between them. The controversy between the proprietors was due chiefly to the practice of granting large tracts of land through poorly worded and ambiguous documents.

The territory of Maryland, granted to Cecil Calvert, the Second Lord Baltimore in 1632, was to be bounded on the north by the fortieth parallel of north latitude, on the south by the south bank of the Potomac River and a line of latitude drawn through Watkins Point, which was located on the western bank of Maryland's Eastern Shore. On the east, Maryland was to be bounded by the Atlantic Ocean and on the west by a meridian through the source of the Potomac River. The charter precluded the settlement of territory "hactenus inculta" or that, which was previously settled or cultivated. The Lord Baltimore would later lose the territory of the present day state of Delaware to this clause based on the assertion by the Dutch that they had prior claim to the area.

William Penn II approached the King for a grant of territory in the New World in lieu of the debt's owed to his father and was subsequently granted territory between Maryland and New York. The grant was approved by the King on March 4, 1681 and was to encompass an area bounded on the east by the Delaware River, on the north by the forty-third parallel of north latitude, on the west by a meridian drawn five degrees west of the Delaware River. The southern boundary was more complex and was to extend eastward along the fortieth parallel of north latitude until it intersected a circle drawn at twelve miles distance centered at an unspecified point in the settlement of New Castle (Delaware). The arc of the circle was to be the boundary from the point of intersection to the Delaware River.

The grants for both Penn and Calvert held in common that the east-west boundary was to be the fortieth parallel of north latitude. The problem arises from the fact that the fortieth parallel did not intersect the 12-mile circle around New Castle. Penn argued that the southern boundary should be located no farther north than 12 miles from New Castle.

It was not until 1732 that an agreement was reached which established the boundary between the two colonies. A commission was appointed to execute a boundary survey according to the general terms decided in 1685. This called for an equal division of the Delmarva Peninsula from Cape Henlopen drawn northward. The northern boundary of the Calvert territory was established as a line of latitude located fifteen miles south of the southernmost point of Philadelphia. In 1738 a temporary line was run upon order of the King to end controversy along the border. The King ordered that two lines be run. One was to be 15 ¼ miles south of Philadelphia on the east side of the Susquehanna River and the other was to be 14 ¾ miles south of Philadelphia on the west side of the river. Surveyors from New Jersey were hired to lay down the lines and their work was accepted as the boundary until 1763.

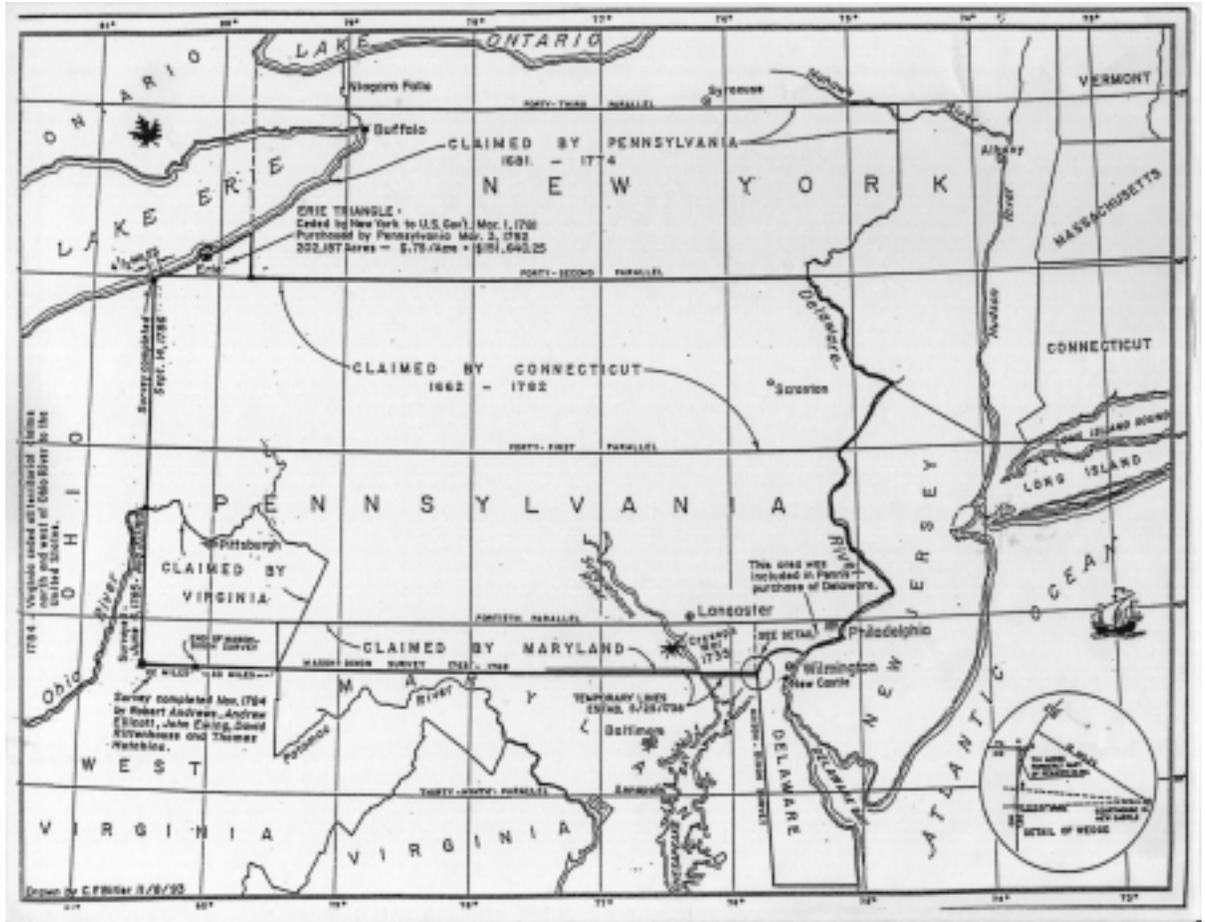


Figure 1 - Courtesy Charles F. Bitler, Jr. PLS

In 1760, Commissioners were appointed to complete an accurate survey of the boundary. Colonial surveyors were employed to establish the lines. After several attempts to establish the lines, it became apparent to the Commissioners that the complexities of the boundaries exceeded the abilities of the colonial surveyors. The Proprietors approached the Astronomer Royal to recommend scientists with the ability to complete the work.

***“November 15, 1763, arrived at Philadelphia” – The journey of Charles Mason and Jeremiah Dixon in America.***

Upon arrival in Philadelphia, Mason and Dixon spent several days meeting with the Commissioners, unloading the equipment and arranging for the construction of a portable observatory. The first order of business was to establish the Latitude of the southernmost point of Philadelphia. From December 16, 1763 through January 4, 1764, Mason and Dixon were occupied taking Astronomical observations to establish the latitude. Upon completion of their calculations, they proceeded west approximately 31 miles to the farm of John Harlan in the forks of the Brandywine River, which placed them near the same latitude as their position in Philadelphia. After completing the Astronomical observations, they were ready to begin the measurement of the 15-mile line that would place them on the parallel of latitude agreed

upon as the dividing line between the Penn and Calvert.

Several days of clouds, snow and rain prevented Mason and Dixon from establishing the meridian to begin the measurement of the 15-mile line through southern Chester County. On March 17, 1764 they employed one man to begin clearing the vido in the Meridian southward. On the 19<sup>th</sup> four men were employed and on the 26<sup>th</sup> of March the number had grown to five. The men employed during this time were engaged in clearing the line, transporting the observatory and instruments and measuring the line. The line was measured twice and marks were placed at four points throughout the measure to provide intermediate checkpoints. During the re-measurement of the line back to the Harlan farm, discrepancies were found along two sections of the line between the first and second measurements giving an overall difference of 444.84 feet. The dubious sections of the line were measured again and adjustments were made for small inclinations not accounted for by measurement with levels. In all, 37.12 miles of line were measured during 11 days of work.

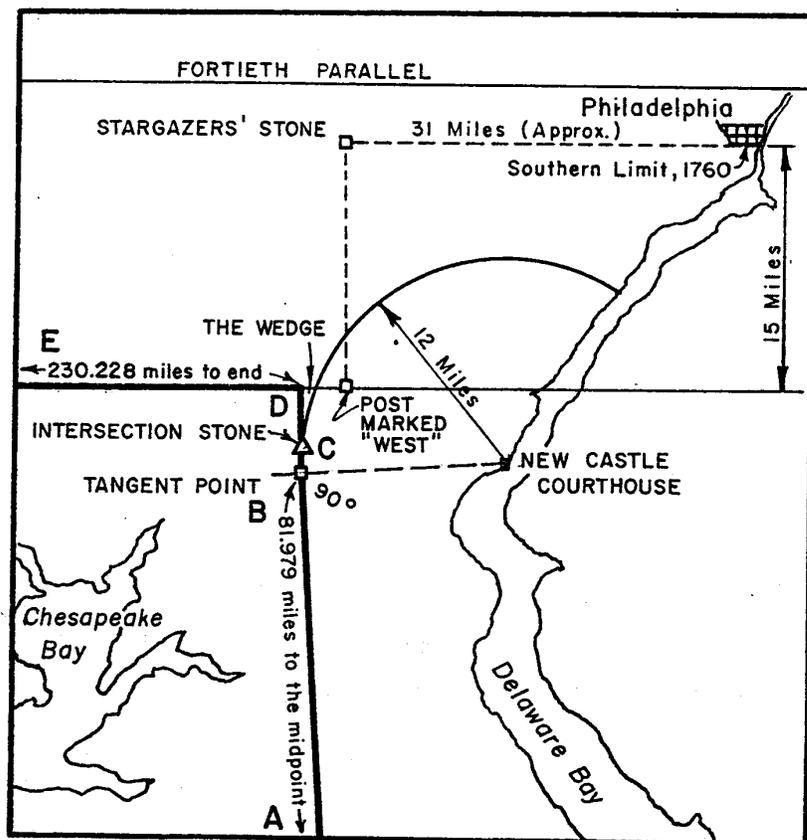


Figure 2 - Courtesy Charles F. Bitler, Jr., PLS

Upon completion of the 15-mile line, several weeks of astronomical observations and calculations were performed to determine their latitude of the position of the observatory that was located “in Mill Creek Hundred in the County of Newcastle, in a plantation belonging to Mr. Alexander Bryan”. The instruments were packed on June 13<sup>th</sup> and on June 18<sup>th</sup> the surveyors set out from New Castle toward the Middle Point. By the 22<sup>nd</sup>, they had reached the Nanticoke River and pitched their tents on its banks. The next day, Mason records in his journal “Engaged Ax-men, etc. The whole company including Steward, Tent keepers, Cooks, Chain carriers, etc. amounting to 39. Two Waggons, Eight Horses, etc.” Throughout

July and August, the surveyors cleared a trial line north, crossing rivers, creeks and swamps, setting posts at one-mile intervals and averaging 1 ½ to 2 miles per day. The chain carriers made the linear measurements, but on occasion Mason and Dixon saw fit to check their work. Upon reaching the Tangent Point of the 12-mile circle around New Castle, a measurement was made between the points of intersection of their trial line with the 12-mile circle to the position esteemed to be the actual Tangent Point. The measurement was found to be 22.51 chains, but Mason notes *“To prove that the Chain carriers had made no error in the measurement of this 22.51 chains; I took a man with me, a few days after, and measured it myself; and made it within a link of the same”*.

From September through November, the party was engaged in performing calculations to determine the offset distance from the trial line to the actual Tangent Line. The hands cut wood posts that were set to temporarily mark the line until the arrival of the stone monuments. On November 26, 1764, the hands were discharged and Mason and Dixon returned to the Harland’s farm.

Western Pennsylvania and Maryland in 1764 remained a rugged and often dangerous place. The French and Indian War, known in Europe as the Seven Year’s War, had only recently ended with the Treaty of Paris. The Proclamation of 1763, signed by King George III, prohibited any English settlement west of the Allegheny Mountains. Those already settled west of the mountains were required to return to the east in order to ease tensions with the Native Americans. Governor John Penn had issued a declaration of “death without benefit of Clergy” for anyone settled west of the mountains. Chief Pontiac began all out warfare against the British and had destroyed several British forts in what became known as “Pontiac’s War”. Fort Pitt was among those attacked, and for several months was held under close siege. Colonel Henry Bouquet, Commander of Fort Pitt was ordered to distribute smallpox infested blankets to the western nations, which created a lethal epidemic in 1763 and 1764.

During the summer of 1763, attacks upon settlers intensified west of the Alleghenies. Frustrated by the Penn’s reluctance to raise an army to engage the Indians, a group of Scots-Irish men from Paxton Township, Pennsylvania decided to take matters into their own hands. In December of 1763, a group of men, who became known as the “Paxton Boys”, attacked a group of peaceable Susquehannock Indians who had remained in Lancaster County. This small tribe of Indians had been converted to the Christian faith and had become known as the Conestoga Mission Indians. A mob of about 75 men attacked the village and murdered two old men, three women and a child. The people of Lancaster County offered refuge to the remaining 14 members of the tribe and housed them in the County jail for protection. On December 27, 1763 the vigilante Paxton Boy’s broke into the jail and massacred all fourteen Indians, including a few children.

On January 10, 1765, Charles Mason, growing restless at the Harlan farm, decided to travel and see the place where this atrocity occurred. He wrote in his journal that he *“Left Brandywine and proceeded to Lancaster (distance about 35 miles) a town in Pennsylvania distant from Philadelphia 75 miles, bearing nearly duly west. What brought me here was my curiosity to see the place where was perpetrated last winter the horrid and inhuman murder of 26 Indians, Men, Women and children, leaving none alive to tell. These poor unhappy*

*creatures had always lived under the protection of the Pennsylvania Government and had lands allotted them a few miles from Lancaster by the late celebrated William Penn, Esquire, Proprietor. They had received notice of the intention of some of the back inhabitants and fled to the Goal (jail) to save themselves. The keeper made the door fast, but it was broken open; and two men went in and executed the bloody scene; while about 50 of their party sat on horse back without; armed with guns, etc. Strange it was that the town as large as most market towns in England, never offered to oppose them, though its more probable they on request might have been assisted by a company of his Majesties Troops who were in the town... no honor to them! What was laid to the Indians charge was that they held a private correspondence with the enemy Indians. But this could never be proved against the men and the women and children (some in their mothers wombs that never saw light) could not be guilty.”*

Along the trail on the return trip to the Harlan Farm at Brandywine, Mason met Mr. Samuel Smith, and noted *“who in the year 1736 was Sheriff of Lancaster County, now three counties, Lancaster, York and Cumberland, who informed me that the people near the supposed boundary line were then at open war. About ten miles from Lancaster on the River Susquehanna one Mr. Crisep defended his house as being in Maryland with 14 men, which he surrounded with about 55. They would not surrender (but kept firing out) till the house was set on fire, and one man in the house lost his life coming out”*. Thomas Cresap was a Maryland settler who had established a ferry on the Susquehanna River near the 40<sup>th</sup> parallel in 1730. In the years leading up to his altercation with Sheriff Smith, Cresap caused trouble on the frontier by confiscating the land of Pennsylvania settlers and claiming the land as Maryland territory in what was to become known a Cresap’s War. After capture by Sheriff Smith, Cresap was subsequently taken to Philadelphia in order to give the civilized Pennsylvanians a glimpse of the “Maryland Madman”. Cresap, in his typical fashion exclaimed upon seeing Philadelphia, *“Damn it, this is one of the prettiest towns in Maryland”*

Surely upon arrival back at the Harlan Farm in mid-February, Charles Mason must have discussed with Jeremiah Dixon what he had learned from his visit to the site of the massacre that had occurred only 13 months prior. Sitting by the fire in the Harlan homestead, the surveyors must have discussed their plans for the coming year. As another log was added to the fire, they would also have shared their concerns about the trials and dangers they were sure to face as they cleared the visto westward into the heart of a troubled land.

In February, Mason again became restless and decided to travel to New York. On the second day of his journey he crossed the Schuylkill River and lodged at the home of Moses McClain, Commissary for the survey of the lines. The next day he crossed the Delaware River on the ice and nearly lost his horse when it fell through the ice. Mason spent several days traveling through Princeton, New Jersey, New York, Staten Island and Long Island. In the Inns and gathering places of the day he likely took part in the discussions surrounding the conflicts between the Colonials and the English Crown. Mason was likely drawn to New York by the news of the violence that had erupted between British Soldiers and armed colonists in August of the preceding year and by the recent suspension of the New York Legislature by the British Crown for their refusal once again to comply with the Stamp Act. The seeds of Revolution were being planted in the colonies and the Sons of Liberty and many Colonists

were busily engaged opposing British rule. While surveying on the line, Mason and Dixon would only receive occasional reports of news from civilization through the messengers sent by the Commissioners. Trips to the cities must have been a welcome indulgence for a man who would be spending several months living in a tent on the frontier.

On the trip back from New York, Mason had another serious accident with his horse through a chance meeting with a group of Quaker boys and recorded *“Met some boys just coming out of a Quaker Meeting House as if the De(vi)l had been with them. I could by no means get by them with my horse. I gave the horse a light blow on the head with my whip which brought him to the ground as if shot dead. I over his head, my hat one way wig another and whip another, fine sport for the boys. However I got up as did my horse after some time and I led him by the Meeting House, (the Friends pouring out) very serene, as if all had been well. But.”* The next day rested, his hip having been hurt very much by the fall.

On March 11, 1765, the focus returned once again to the project that had taken them so far from home. They proceeded to the “Post Marked West” to begin the observations for the direction of the West line. On the 21<sup>st</sup> of March it began to snow and continued for the next four days. On the 27<sup>th</sup>, Mason notes that *“at 9 in the morning the snow was two feet nine or ten inches deep in general where the wind had not the least effect to heap it”*. During the next week the depth of the snow and cloudy weather prohibited the continuation of the work. On the 30<sup>th</sup>, Jonathan Cope and William Darby, who would continue to work as Chain carriers throughout the survey, joined them. Both men came from the Lower Counties (Delaware). Finally, on April 5<sup>th</sup> they began to run the west line.

Work on the West line continued at a steady pace with the surveyors stopping at 12 miles 25 chains and on the east side of the Susquehanna River at 25 miles 75 chains to take astronomical observations. The results of these observations would show how far north or south of the intended parallel of latitude they were. The offsets from the trial line to the curving line of latitude were then calculated at one-mile intervals.

Before crossing the Susquehanna River, The survey party returned to the east to establish the lines from the Tangent Point to the intersection with the “West line” they had just established. On the return trip east, they measured the offsets from the trial line to the true parallel and set post to mark the line. Upon determination of the lines from the Tangent Point, stones were set in the presence of the Commissioners to permanently mark the line. The Commissioners then gave instructions to *“continue the parallel if Latitude (in the same manner we have run it to the river Susquehanna) as far as the country is settled”*.

After meeting with the Commissioners, the survey party returned to the Susquehanna River to continue the extension of the west line. The size of the party had been relatively small due to the limited need for Ax-men in the settled areas on the east end of the line. As the survey progressed westward, the need for additional hands grew as the terrain became more difficult and the survey party soon came to understand why Penn had decided to call this his “Sylvania” or Penn’s Woods.

The Steward or “Commissary” for the survey was Moses McClain who kept a detailed set of

ledgers for the survey. In the three ledgers kept by McClain, he recorded disbursements, receipts and the time and wages of the men employed during the survey. The ledgers for 1765 and 1767 were held by Benjamin Chew, a Commissioner for the Penn's and were subsequently donated by the Chew family to the Pennsylvania Historical Society in Philadelphia. It is uncertain whether ledgers were maintained for the survey sessions of 1766 and 1768, although it is almost certain there were. The location of these ledgers, if they exist, is not known. They may have been passed down through a family collection or discarded. Hopefully, someday they will be discovered and shed additional light on the incredible logistics that were required to maintain a survey party in the wilderness of Colonial America. As Steward, McClain's job was to employ the hands and to track the number of days worked by each man. Early in the survey, each man was required to sign the ledger to acknowledge the number of days worked and that he had been paid. McClain also purchased supplies and handled most of the finances associated with the survey party. Moses McClain had six brothers, five of them also Surveyors. He was engaged with his brothers Archibald, Samuel and Alexander in 1761 with the running of the 12-mile New Castle Circle, prior to the arrival of Mason and Dixon.

The Proprietors had employed Archibald McClain for three years prior to the arrival of Mason and Dixon. Together with John Lukens for the Penn's and Thomas Garnett, Jonathan Hall, John Frederick and Augustus Priggs representing the Calvert's, he helped establish the "Middle Point", the 12-mile arc of the circle around New Castle, and attempted to establish the Tangent Line from the Middle Point to the Tangent Point with the 12-mile circle. Owing to the slowness with which Archibald McClain and the other colonial surveyors were completing the work, and the complexity of the task, the proprietors decided to call upon the Astronomer Royal to provide assistance with the establishment of the boundaries. Mason and Dixon were appointed the task and in turn took full advantage of the skills and knowledge of the McClain brothers throughout the survey.

As work on the line progressed through the summer of 1765, the size of the work party increased as more Ax-men were required to clear the visto. Alexander McClain was employed through the survey season as the Tent Keeper. This certainly would have been a full time job for a large work party that was continually progressing westward. Moses Barnes was appointed as the Overseer until June 15<sup>th</sup> when he became one of the five men employed as an Instrument Bearer. Matthew Marine who had been an Instrument Bearer took over as the Overseer. William Darby and Jonathan Cope stretched the chain daily through the eight to nine yard wide "visto" cleared by the Ax-men. The largest number employed during the 1765 season was 43 men during the last week of August. Throughout most of the year there were five men employed as Instrument Bearers whose job would have been to transport the delicate precision equipment and to provide direction for the men clearing the line. There were two cooks to provide the daily meals for the men. The number of Ax-men fluctuated throughout the summer from a high of 30 to a low of 6 in early September when the survey paused to allow Mason and Dixon to set up the observatory to take astronomical observations to determine the direction of the line.

On October 7, 1765, Mason and Dixon set up the Sector at a distance of 117 miles 12 chains 97 links from the "Post Marked West in Mr. Bryan's field". Each night they would recline

beneath the six-foot brass telescope of John's Bird's Sector looking into the heaven's calling upon the stars Alpha Cygni, Capella and Alpha Lyrae to provide their position relative to the true parallel. After computing their position and finding they were 847.4 feet north of the true parallel, the surveyors calculated the offsets to the line and prepared for the trip back east.

The instruments were packed and taken to Captain Evan Shelby's where they were left in safe keeping for the winter. The remainder of October, November and December were occupied measuring offsets and setting the stones that had arrived from England on the Tangent Line run in 1764. On January 1, 1766, they left off for the winter season and returned to the Harlan Farm at Brandywine.

Mason, ever the one to seek knowledge in the world around him, struck out in mid-February and "*proceeded for curiosity to the southward to see the country*". Through much of his journal, Mason records observations about the natural world around him. While crossing the Susquehanna on his trip southward, Mason's curiosity is roused, perhaps by a comment by the Ferry operator that the river in this location has no bottom. He records that "*the ferry is about 100 yards wide, the river being pent in by two lofty hills. At 15 or 20 yards from the east shore, 170 fathoms (1020 feet) of line with a heavy weight, has been let down; but no bottom could ever be found*". Upon reaching the Rappahannock River, he notes on March 2<sup>nd</sup> that he "*saw green peas in the field five or six inches high*". After visiting the city of Williamsburg, the "*Metropolis of Virginia*", he notes that "*at 3h 29m P.M., the sun shining in my face, I saw a streak of lightning from 10° altitude down to the horizon*". There are many such recordings of his personal observation contained in the journal. On one occasion, in the middle of a hailstorm, he recorded the breadth and width of a large hailstone for posterity. Charles Mason was truly a man whose eyes were open to the living world around him.

In March of 1766, the surveyors returned to Captain Shelby's to gather the equipment. On March 31<sup>st</sup> William Darby and Jonathan Cope joined them with some of the other hands. Work was delayed for seven continuous days by snow and rain. Moses McLain had been delayed by the weather and arrived on April 14<sup>th</sup> with the Wagons and tents. McLain would certainly have continued his meticulous recording of the expenses and disbursement for 1766. Unfortunately, the information for 1766 is not contained in the Chew collection.

Work continued as in the previous year with the westward progression stopping only on Sundays and for periods of astronomical observations. Mason notes that at 134 miles 54 chains they had reached the foot of Sidling Hill (Sidelong Hill in the Journal) and they could proceed not farther with the wagons. The Sector was set up at 140.197 miles and 165.686 miles "*from the post marked west in Mr. Bryan's field*" to determine the offset from the true parallel. On June 18<sup>th</sup> the westward progression of the survey was halted. The surveyors had reached the Allegheny Mountains, the boundary established in 1763 by Royal Proclamation of the King as the limit for English settlement. Mason noted in his journal "*At the present the Allegheny Mountains is the boundary between the Natives and the Strangers; in these parts of his Britanic Majesties Colonies. From the solitary tops of these mountains, the eye gazes round with pleasure, filling the mind with adoration to that pervading spirit that made them*".

The instruments were packed and sent to again Captain Shelby's for safekeeping. The work party began to clear a vido on the true parallel or the line between Pennsylvania and Maryland by running through offsets measured from the trial line every 10 chains (660 feet). The sounds of the ax resonated through the woods as the ax-men worked to clear the vido through the virgin timber. Stopping only on Sundays and an occasional rain day, the men moved steadily east, averaging two miles per day. Mason and Dixon recorded their observations of a solar eclipse on August 5<sup>th</sup> and on August 20<sup>th</sup> they observed a lunar eclipse. Finally, after three months, the party had cleared 165 miles of line and had reached the northeast corner of Maryland. Mason notes in his journal "*From any eminence in the line where 15 or 20 miles of the Visto can be seen (of which there are many): The said line or vido, very apparently shows itself to form a parallel of Northern latitude. The line is measured horizontal; the hills and mountains measured with a 16 ½ foot level and besides the mile posts we have set posts in the true line, marked W on the west side all along the line where the Sector and Transit Instrument stood. The posts stand in the middle of the vido; which in general is about Eight yards wide. The number of posts in the west line is 303.*"

The hands were discharged on September 30<sup>th</sup>, but Mason and Dixon were not finished for the year. Recognizing the opportunity to advance the understanding of the size and shape of the Earth, Mason and Dixon had recommended to the Royal Society that the length of a degree of Latitude be measured using the lines that had been cleared. Their proposal was accepted and the approval to use the Sector and other instruments was granted by the proprietors. The remainder of 1766 and early 1767 was occupied in the measurement for the Royal Society.

In April 1767, Mason and Dixon met with the Commissioners and learned that the negotiations with the Six Nations to continue the line beyond the Allegheny Mountains had not been completed. Sir William Johnson the Agent and Superintendent for Indian Affairs for the King had been negotiating with the Six Nations for the continuation of work beyond the limits of the 1763 Royal Proclamation. Finally, on June 2<sup>nd</sup>, an express was received from Johnson advising the Commissioners that an agreement had been reached.

Mason and Dixon received a letter from the Commissioners dated June 18, 1767 with directions to continue the line. They were also advised that "*A number of the Indians have been deputed by the Six Nations (whose consent hath been obtained to our extending the West Line to the Western Limits of the province of Pennsylvania) to be present at and to attend you in running the said line, an orders have been given for them to meet you at York town in Pennsylvania: As the public peace and your own security may greatly depend on the good Usage and treatment of these deputies, we commit them to your particular care, and recommend it to you in the most earnest manner not only to use them well yourselves but to be careful that they receive no abuse or ill treatment from the men you may employ in carrying on the said work, and to do your utmost to protect them from the insults of all other persons whatsoever*". An added note recommends to "*Messrs Mason and Dixon that the spirituous liquors to be given to the Indians attending them, be in small quantities mixed with water and delivered to them not more than three times every day*".

Seven men were sent west with the Sector and telescope and on July 7<sup>th</sup>, the wagons arrived

at Fort Cumberland with the tents and instruments. This same night, Mason and Dixon lodged with Colonel Thomas Cresap, the “Maryland Madman” who 40 years earlier had called Philadelphia one of the “prettiest towns in Maryland”. It must have been an enjoyable evening discussing the circumstances that had brought these three men together on the frontier of Colonial America.

On July 16, 1767 eleven Mohawks and three Onondagas sent by the Six Nations, together with Hugh Crawford, an interpreter, joined them to conduct them through the country. The size of the survey party in 1767 was significantly larger than that of the 1765 season. Since the logistics of transporting supplies became increasingly more difficult as they progressed westward, it was necessary to establish a system to feed a work party that grew to 115 men. A storehouse, operated by Daniel Campbel was established to organize and distribute supplies. Seven cooks were employed to feed the men with provision brought from the storehouse. Their diet would also have included meat from the herd that was maintained by James Reid, the Shepherd. John Harper, Richard Adam and John Menan who alternated as Ax-men and butchers butchered the animals. John Powel was given the title “Milkmaid” and spent his days milking and herding the small herd of cows that followed the westward progression.

The largest numbers of men were employed as Ax-men and Pack-horse drivers. The number of Ax-men averaged 42 during most of the summer. On August 25<sup>th</sup> the work party was divided with one party clearing the line on the true vistro east from mile 198. The second party was working toward the west clearing the line for the survey party.

The number of Ax-men jumped to 53 on October 20<sup>th</sup> when the entire party was working together to open the true parallel to the east. The number of pack-horse drivers reached as many as 38 in September. These men would have been kept busy clearing the lines of the felled trees and brush. On September 17<sup>th</sup> tragedy struck when the fell of a tree killed William Baker and John Carpenter, both pack-horse drivers. No account of this tragic event appears in Mason’s Journal and it is uncertain which of the two work parties the men were working with. His entry for the day of the accident notes only that the Sector was brought from the last station.

Signs of complications were beginning to show as the men continued west. On September 12<sup>th</sup> as the party reached the Cheat River, two of the Mohawks raised an objection to crossing the River. Mason notes that a Council of the representatives for the Six Nations was held and the Chiefs Decided that they should pass. With the deaths of Baker and Carpenter and the reluctance of the Chiefs to continue westward, there was growing concern among the men about their own safety. Having completed their Astronomical observations, the party was ready to cross the Monongahela River but many of the men refused to continue. Mason describes the account in his Journal “*Twenty-six of our men left us; they would not pass the River for fear of the Shawnees and Delaware Indians. But we prevailed upon 15 of the Ax-men to proceed with us, and with them we continued the line westward in a direction found as on July 10 and the 26<sup>th</sup> of August thus*”. On October 2<sup>nd</sup>, Mason sent a man to set stones on the line and to visit Fort Cumberland to have additional hands sent. By October 7<sup>th</sup>, Mason notes that they now have the usual complement of hands.

On October 9<sup>th</sup> at 231 miles 20 chains from the Post Marked West in Mr. Bryans field, the survey party crossed “a War Path. The Catawba War Path that Mason refers to in his journal was one of the most important trails in North America. It ran south from New York though western Pennsylvania and continued to South Carolina. The trail was used for many years by Seneca War parties who traveled to South Carolina to attack the Catawba’s. While Mason and Dixon were busy creating a boundary between the Penn’s and Calvert’s, the Chief of the Indians informed Mason and Dixon that they had reached a boundary of their own. This War path, the Chief informed Mason and Dixon, “*was the extent of his commission from the Chief of the Six Nations that he should go with us, with the line; and that he would not proceed one step farther westward*”. On October 10, 1767, after attempts to persuade the Chiefs to continue had failed, they sent for the Sector, which had been left at the Storehouse at the Forks of the Cheat and Monongahela Rivers. The Sector was set up at 233 miles 13 chains 68 links from the Post Marked West and after six nights of observations and a day of calculations they found themselves 233 feet south of the true parallel.

After measuring the offset to the true parallel, the line was extended an additional 250.8 feet west to place the point on the top of a ridge. Mason notes “*we set up a post marked W on the west side and heaped around it earth and stone three yards and a half diameter at the bottom and five feet high. The figure nearly conical*”. At 233 miles 17 chains 48 links from the Post Marked West in Mr. Bryan’s field, Mason and Dixon’s line ends.

The remainder of 1767 found the surveyors busy setting monuments to mark the line. Before returning home, the project to measure a degree of latitude still needed to be completed and much of 1768 was spent performing this task. Mason and Dixon were also instructed to draw a map or plan of the lines to be presented to the Commissioners. The map was completed in August of 1768 and 200 copies of the print were run off. On the 11<sup>th</sup> of September 1768, after having been discharged by the Commissioners, Mason notes in his journal “*At 11h 30m A.M. went on board the Halifax packet boat for Falmouth. Thus ends my restless progress in America*”.

Little is known of what became of the ax-men, pack-horse drivers and others who had cleared the line and established the most famous boundary in the Americas. Charles Mason and Jeremiah Dixon had spent nearly five years in America living in tents through 100° summers and -20° winters, surveying and marking the line, which still bears their names. After completing their work in America, both returned to England. Mason continued his work for the Royal Society and Dixon returned to his surveying practice in Durham County. There, Dixon died on January 22, 1779 and is buried near his home in Cockfield, County Durham. Charles Mason returned to America in 1786 with his wife and eight children. In a letter to Benjamin Franklin written in September of that year, he stated "that he was ill and confined to his bed." On October 25, 1786, Charles Mason passed away and was buried in an unmarked grave in the Christ Church Burial Ground in Philadelphia, PA.

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## BIOGRAPHICAL NOTES

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