Dedication of the new DUDLEY OBSERVATORY
Academy Park, Albany, New York, August 28, 1856

Professor Edward Everett

"ON THE USES OF ASTRONOMY"

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

The Dudley Observatory
Academy Park
Albany, New York
1856

DR. BENJAMIN GOULD
"The Scientific Council"
The newly appointed Superintendent of the ADIRONDACK SURVEY
VERPLANCK COLVIN - 1872

The field work was commenced in the neighborhood of Lake Pleasant, Hamilton county, in the latter part of July. It was intended that, starting here, in the south-western portion of those mountain ridges which form the Adirondack chain, the triangulation should be advanced north-easterly, station by station, to Lake Champlain, and a perfect connection thus preserved throughout the survey.

...to that accurate, and well-established survey base to the northeast.
Lake Champlain

was the PLACE!

1872

the ADIRONDACK MOUNTAINS
West – from LAKE CHAMPLAIN

1609

From the North came Samuel De Champlain

July, 1609

Lake Champlain Woodcut
c. 1830

Contact: jims2999@yahoo.com
THE WAR OF 1812
Battle of Plattsburgh Bay 1814

THE AMERICAN REVOLUTION
Ethan Allen & the Green Mountain Boys capture Fort Ticonderoga 1775

THE FRENCH & INDIAN WAR
The "Black Watch" at the siege of Fort Carillon (Fort Ticonderoga) 1758

THE COLONIAL WARS in the CHAMPLAIN VALLEY

LAND GRANT MAP - made for New York Provincial Governor William Tryon - 1779
Early Maps of Lake Champlain

1762 Map of Lake Champlain - for British Major General Jeffery Amherst

CHAMPLAIN CANAL 1825 connecting the Hudson River to Lake Champlain

Commerce on Lake Champlain, mid-1800s

Contact: jims2999@yahoo.com
LAKE CHAMPLAIN LIGHTHOUSES

1825 "The Lighthouse Establishment" - U.S. Treasury Department

1852 "The Lighthouse Board" - U.S. Army Corps of Engineers

CROWN POINT LIGHTHOUSE

SPLIT ROCK MOUNTAIN LIGHTHOUSE

1870 - U.S. COAST SURVEY of LAKE CHAMPLAIN

"For the purpose of starting the Survey of Lake Champlain at the earliest moment ..."

U.S.C.S.

August – October 1870

Contact: jims2999@yahoo.com
"...The reconnaissance was commenced on the 24th of August, and after a careful examination of the Lake shores..." (U.S.C.S.)
It was proposed to make theodolite stations on the summits of two of the prominent mountains on the west shore of Lake Champlain, near Crown Point, and from such to take, as zero, the apex of the government lighthouse on that point; by that means connecting the stations with the United States hydrographical survey of the lake. As the positions of the light-house on the bluffs have been determined with astronomical accuracy, they form an invaluable basis for work of this character.

- V. Colvin, 1872 Report

1872

“About 8 Miles apart in distance”

CROWN POINT LIGHT HOUSE

BARBERS POINT LIGHT HOUSE

DETAIL –
c. 1870 map of Town of Crown Point Essex County, N.Y.
The first Mountain selected was the "BALD MOUNTAIN of MORIAH" (VC)

1872 Bald Mountain of Moriah or, Blueberry Hill

1872 BALD PEAK Sta. No. 5

Bald Mountain of Moriah
a.k.a. -Bald Peak & Blueberry Hill

Meanwhile, procuring a man to carry the theodolite, we ascended the mountain, which was steep and fned with rock ledges and ghastly with crumbling trunks of burned trees. The summit gained, the first labor was to chop down and clear away a growth of young trees that obscured the view in one direction.

Bald Peak Signal Station No. 5
"STATION ON BALD PEAK" - from Colvin’s 1st Report, 1872
Drill Hole in Summit bedrock
( Remnant of Signal Station - Bolt No. 5 )
(Senes from photos - 1988 )  
(Drill Hole: 1998 – Colvin Crew Recovery )

Bald Peak - over ruins of Fort St. Fredrick

Bald Peak - showing the new Bridge over Lake Champlain, and the Champlain Memorial – ensconcing the original Crown Point Lighthouse

Reconnaissance observations taken from Light house walkway

HOSPITAL POINT
SURVEY BASELINE
LINE – of – SIGHT
Impediment

The signal conveyed the unwelcome intelligence that Crown Point light was not visible from the Harbor's Point light-house, a wooded promontory on the Vermont shore intersecting...
New Sub- Stations ("eccentric" points) set; U.S.C.S. points tied into... U.S. COAST SURVEY "CROWN POINT" NORTH & SOUTH BASE STATIONS

[Image of a map showing Crown Point Lighthouse, Sub-stations, and other locations.]


(U.S.C.S. Crown Point NORTH BASE & SOUTH BASE BASELINE (Colvin sketch)

CROWN POINT NORTH BASE (Bolt in top center - chiseled stone monument) Inscribed: "U.S.C.S." , "1872 ", "BASELINE"

Colvin Sketch 1872

[Image of a map showing Barber’s Point Lighthouse, Sub-station b, and other locations.]
Here we were surprised to find that some malicious persons had nearly destroyed the fine largest station-halo signal. Some of the tin was gone, the remainder scratched, defaced and riddled with rifle balls.

V. COLVIN - 1873 Report
“Perspective and sectional plan”

Primary Triangle No. 1 - 1872

Bald Peak
Barbers Point - Crown Point

Primary Triangle No. 1*

* Sub - Stations ("Eccentric Points")
also used at Lighthouse locations

1872 - 1873

DETAILS from
Verplanck Colvin's
Adirondack Survey
FIELD MAPS
1872 - 1873

Primary Triangle No. 1
Triangulation
from Bald Peak
Triangulation west – from Bald Peak Station No. 5 1872 – 1873 (Colvin Triangulation Map 1874)

Adirondack Wilderness - west of Bald Peak

BARBERS POINT LIGHT HOUSE

1876

“HOSPITAL POINT” Vermont

Line of Sight

impediment through forest

Crown Point Lighthouse to Barber’s Point Lighthouse

8 mile projected Line of Sight

( views – as seen today )

Line of Sight

Point north of “Chittens Point”

Line of Sight

a sight line run through the woods; the axmen clearing the brush from the way.

the correction angle was computed in the field, and laid off by linear measurement with steel tape on the ground, and stakes set for the line of chopping.

Contact: jims2999@yahoo.com
coming out directly upon our northern terminus, I was about to order the chopping to be commenced, when I was struck by the remarkable height of the ground in the woods.

from a Colvin sketch of men clearing a "Line of Sight" 

Lake Champlain

Intervening, and obstructing Point of Land, from North

"Error due to Curvature of the Earth, and Refraction of Light"

It is rare that a better example is obtained, illustrating an character of the earth's atmosphere, and the importance of its refraction; which so few realize. Here was a demonstration that objects at which we look, are not where we see them. In other words, they are not in the direct line in which we seem to see them.
Contact: jims2999@yahoo.com
JUNIPER ISLAND LIGHTHOUSE
SPLIT ROCK MOUNTAIN LIGHT HOUSE
1872
"11 Miles apart in distance"

JUNIPER ISLAND LIGHTHOUSE
SPLIT ROCK MOUNTAIN LIGHT HOUSE
1872
MT. DISCOVERY
RAVEN HILL
COBBLE HILL
SPLT ROCK MNTN. LIGHTHOUSE

COBBLE HILL SIGNAL TOWER STA. No. 175
(from Colvin Report, 1873)
but none of these three Mountains proved acceptable...
COLVIN EXCLAIMED:

We had found the station! No better or more appropriate one, than this mountain top, could have been selected.

from Hurricane Mountain - 1873

Remnants of Survey Station Bolt No. 8 (today)
ADIRONDACKS FROM TOP OF MT. HURRICANE

Colvin's Sketch:
ADORNDACK SURVEY
1873
"Primary Triangle of MOUNT HURRICANE"
(Primary Triangle #2)

"Perspective and sectional plan"

LIGHTHOUSE DETAIL
Primary Triangle of MOUNT HURRICANE
1873
(Colvin sketch)
Primary Triangle No. 2
1872 – 1873

* Sub - Stations ("Eccentric" Points) also used at Lighthouse locations

Colvin Survey Party
Summit of Mt. Hurricane
1876

Note large wooden Theodolite carrying case - doubling as "Tripod"

- from photographs in Colvin Reports

* Survey Party leaving Summit of Mt. Hurricane, the Guides carrying the Grand Theodolite, and Telescope

DETAILS from Verplanck Colvin's Adirondack Survey
FIELD MAPS
1872 – 1873

PRIMARY TRIANGLE No. 2

HURRICANE MTN. TRIANGULATION - angles turned to Raven Hill, Cobble Hill, and the Elizabethtown Signal Station - Azimuth Sta. & Meridian Line Point.
Between Willsborough, Essex county, and head-waters of the Boquet river, measured travers, transit stations...  340

Boquet River Survey
BASELINE

Triangulation carried west from Hurricane Mountain Signal Station No. 8
1872 – 1873

Adirondack High Peaks west - from Hurricane Mountain
Adirondack Survey
Triangulation Map
1874
The triangulation of this survey is based upon the United States Coast Survey leveling in the valley of Lake Champlain. The first base selected was the distance between the lighthouses at Crown Point and Bar’s Point on Lake Champlain, which with the latitudes and longitudes of those stations, had been determined by the Coast Survey.

A second base was the distance between the lighthouses at Bell Rock and Juniper, further south.

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It was found impossible to occupy the center of any of these light-house stations with the theodolite, and eccentric stations were necessarily used, the observations being carefully reduced to center before computation.

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Contact: jims2999@yahoo.com
Under the new system of survey, adopted in 1876, it was found practicable to determine a great number of new stations and triangles over the whole of northern New York.

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Lake Champlain – east –

(Trigonometry) carried from one base line back over the wilderness, and then outward again to the lake shore, at some distant point.

V. COLVIN 1878

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(to another accurately determined side, serving as the base of verification.

V. Colvin, 1878
Cover Letter from:
U.S. Coast Survey Office
Washington, D.C.
August 12, 1878

"Descriptions and Sketches of Trigonometrical Stations of the Coast & Geodetic Survey of the United States — Vicinity of Lake Champlain, and of Lake George - N.Y. + Vt."

for the ADIRONDACK SURVEY

The survey, in computation from the base terminates at Cumberland Head, and is designated:

Cumberland — Head — La Motte.
Cumberland, and La Motte
ADIRONDACK SURVEY
TRIANGULATION
Signals at Base line

V. Colvin 1878

The signals at the termini of our new base line at Cumberland and La Motte are of the form shown in the annexed illustration.
Contact: jims2999@yahoo.com
SECONDARY LAKE CHAMPLAIN BASELINE TRIANGULATION
1878

( Details from Colvin Triangulation map )

Secondary Lake Champlain Baseline Triangulation

Colchester Reef Lighthouse

( 1874 Adirondack Survey Triangulation map )

1878

U. S. Coast Survey of Lake Champlain
Coordinate data, and distances for
Plattsburgh & Crown Point
North & South Base Stations,
& Lighthouses
1878

“Logarithmic multiplier to convert metres into
feet is ...”
Patent Map – used by Colvin – showing the Saranac River, the Plattsburgh North & South Base Stations ...

River Baseline tied into Mountain top Triangulation Stations

Contact: jims2999@yahoo.com
SARANAC RIVER SURVEY 1878

Between Plattsburgh, Clinton county, and Saranac lake, Franklin county, measured traverse along Saranac valley, number of transit stations 563

(Table from the Adirondack Survey Report for 1886)

THE THREE PRIMARY TRIANGLES
(using the Coordinated Baselines between the Lighthouses, or B.L. Pts.)

Primary Triangle No. 1
1878

Primary Triangle No. 2
1872 - 1873, 1876

Primary Triangle No. 3
1872 - 1873, 1876

Colvin Crew Recovery No. 34
May 11, 2019
Crown Point State Historic Site
Lake Champlain
With this view over Lake Champlain, from Isle La Motte – towards the northern Adirondack foothills, this segment on Verplanck Colvin’s Adirondack Survey, and it’s beginnings – draws to a close.

It’s 1878, with 22 more years left of Adirondack surveys & wilderness explorations for Supt. Colvin.

Contact: jims2999@yahoo.com
Color Portrait of Verplanck Colvin
by Art Devy
(courtesy of the Kelly Adirondack Research Center
Niskayuna, N.Y.)

~Thanks! - J.S.~