

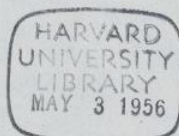
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1850

Friday Evening Nov. 15

Observed Saturn with the great Equatorial; good definition. Saturn looks remarkably fine — its belts are easily seen and the division in the ring is quite conspicuous. Power 140.

Owing to the fine seeing I notice that dark penumbral light on the inside of the interior ring at its greatest apparent elongation from the disc of the planet which I have seen several times before, on good nights.

In color it resembles very much the appearance of the unilluminated disc of the Moon, as it appears just before and after its conjunction with the sun.

It is of the same color and size on either side of the planet.

Its estimated width is about the same or a little less than that of the outer ring.

The greatest width of this dark "ring" is at the same point on each side of planet where the greatest apparent width of the bright rings are situated.

From this point it diminishes as it goes behind the planet, and as it comes out in front, where on the most prominent part of the planet it appears as a dark line on the disc of Saturn close to the inside of the interior ring.

The inside of this dark "ring" is very sharply defined, but I cannot see that it is detached from the inside of the interior bright ring.

Below the rings on the disc of the planet is seen their shadow consisting of quite a dark band of a considerable size.

With a power of 401 it is seen more satisfactorily

Monday Nov 17/18

11 o'clock A.M.

On looking at the meridian marks we were astonished to find the Atmosphere perfectly steady — not the slightest tremor can be perceived — they are as firm as if they were only a few rods distant.

Prompted by this unusual state of the Atmosphere we proceeded to the dome and directed the great Refractor to the Coast Survey Mark, on the Blue Hills — perfectly steady — most beautifully seen.

From this to the old meridian mark — we could distinctly see every stone that was exposed to view in it — Swept along the horizon eastwardly till we came to a church in Dorchester which we conjectured was no less than six miles distant in a straight line — this having a clock we read from the dial plate the time to a single minute — Temp 35° A strong breeze from the west — sky nearly obscured by dark heavy looking clouds.

Friday Nov 22

A 15 minutes past 4 o'clock we reversed the transit circle. This delicate feat was performed without any accident. Measured the meridian marks and applied the level before and after reversal.

A daring rhymster speaks thus —

With slow and cautious hands,
We seized with utmost care;
The meridian transit circle,
And raised it softly in the air.

High above the mazy piers,
The monstrous circle hung;
A heavenly Uranian void of fears,
Touched it — around it swung.
Turning its hollow axle from the west
Which we'd considered for the best.

The pinion turns — the circle now descends
Into its former place — with reverend ends
Now the hollow pivot seeks repose,
In the eastern N.
From whence, the western rose.
Pointing its glassy eye,
Where the morn Aurora glows.

Lay! Capt: Smyth

November 27 AM

Found an error in the American Almanac for 1851 on page 43 in the left hand column where hours and minutes are marked minutes and seconds

July 30 900 Transit etc.

1851

Eclipse of the Sun July 28, 1851

beginning
4. 10. 55-4

Perhaps? late

No 2964

Comet Leakes

h m
4. 2. 9

37

Curp of the Sun appears rounded on paper
This rounded appearance is not seen in the Tel.
Light on the edge of the Sun is considerably
fainter than near the center as at b b b



Where it borders on the moon it is very bright as at a a a.
Edge of Moon well defined - projections distinctly seen

No appearance of any illumination on the moon's side
Moon's limb steady all the while

There appears no color bordering on

the edge of the moon's disc



4. 12. 03. 19

8. 19. 03. 45

19. 52. 59. 74

18. 56. 53. 24

51. 51. 48

58. 84

19. 49. 44. 36

Looked for Venus Sirius and Capella
during the greatest obscuration, but was
not able to see either of them

4. 10. 53. 0

1. 09. 97

4. 12. 02. 97

8. 19. 03. 45

19. 52. 59. 52

18. 56. 53. 24

51. 51. 48

58. 84

. 52

19. 49. 44. 08

1851

August 5th

This day, took the 37 Chronometers (which were brought here on the 23^{ult.} from Liverpool Observatory) in two carriages and proceeded to 26 Congress Street, where we R. F. B. & C. W. J. compared 12 of them with the clock. We then returned them to ^{the} carriages and set off for East Boston, where the steamer Norfolk lay to take the passengers and baggage, etc., to the Steamer American which lay anchored near Clinch Light.

After we had removed the chronometers on board the Norfolk, and carefully stowed them away, we set ourselves down to take a fine sail. At ten min. before 12 the steamer left the wharf, and glided swiftly down the harbor. — For some reason or other, unknown to us, the American came back as far as point Alderston to meet the Norfolk. After the American had rounded about, and directed her head to sea, we came alongside, and made fast.

The deck of the Norfolk being considerably lower than the American, while the sea tossed our boat about to a considerable, rendered it somewhat difficult to board her; but we finally succeeded in depositing the chronometers safely on board.

We bid Mr. Hornum adieu, and had scarcely got upon the Norfolk, when the two steamers detached themselves.

A few shrill puffs of the American's steam, and its mighty wheels began to turn; while the passengers on either, stood on their respective decks, and waved their handkerchiefs till they no longer recognised each other. I doubt much whether there is anything that can produce on the mind such a

1851

August 10

Watched for meteors from 8 P.M. till 10 when
the clouds become so dense, as to entirely obscure the brightest
stars

Whole No. of meteors seen between 8 and 10 - was 5

At half past one the clouds broke up a little - watched till
half past 3 when they again united and become very dense
Whole number of meteors seen during this time 11 total 16
All of these meteors were very bright and

August 22 ^{h on} 5.38

This afternoon about 5.30^{h on} my attention was called by Mrs. Bond, who was accidentally looking out of the north window in the computing room, to a most singular looking object just emerging from behind the prime vertical window.

Hastening to the window I was astonished to see what appeared to be a dense column of smoke rising from the forest on the sloping side of yonder hill and inclining itself toward the east at an angle of about 15 or 20 degrees, while its summit was buried in a dense black cloud above.

— fig. No 1 below is not unlike its appearance when I first saw it —



I had not gazed upon it a single minute before I was convinced that it was not smoke, but a whirlwind of the most violent kind.

I hastened to the dome and closed the iron window shutters, the dome itself I had previously fastened.

The train ^{aa} left behind in fig. No. 1 was a little elevated above the tops of the trees, and was, probably, the subsiding dust which the whirlwind had occasioned.

This singular looking object continued moving towards the north east passing this side of the two white church steeples in West Cambridge which were lost sight of when it was in a line joining us and them describing an arc of 90° or thereabouts in 20^m.



No 2 represents it at the time it was north of us. Pieces were seen to fall down on either side of the column at this time as is represented in the annexed diagram. They did not appear to be thrown laterally from the column, but came directly from the cloud above.

This column varied in size and density frequently in its passage. When it was smallest it was

also blackest and seemed to operate most violently. This would continue for a while and then the column would enlarge ^{and} become less dense as if breaking up. These however did not extend to any great limits. It was seen to revolve with great rapidity several times particularly in the vicinity of Bedford. That which was seen to indicate its rotation, was small detached collections of smoke or dust, which ascended upward in a spiral line, and this at the time when it appeared to be breaking up as I have above described. It appeared to revolve from east to west. This is however, a very uncertain point, for it is difficult to determine in what direction it revolved the observer being at a distance.



The cloud (as I shall call it) ascended upward from a in the annexed fig. to b. Now it is uncertain whether a or b is nearest the observer; in case that a is nearest, then it revolves east to west as I thought it appeared to. On the other hand, if b is nearest, then it revolves in an opposite direction.

But by far the most striking feature of this column was its last definite form.

This took place at 5^h 35^m P.M. Solar Time at this Observatory. Its direction was then from us, east of north about 6° — It then resembled a huge black cone whose base was buried in the dense cloud which had hurried over it, from the time we first saw it — while the vertex just touched the earth below; its axis being nearly, if not quite, perpendicular to the earth's surface. Nothing could be more perfect in resemblance to an inverted cone than this. Miss S. C. Bond and myself were at this moment standing at the north window of the computing room both rerehking this wonderful appearance.



How long this continued so I am unable to say with much precision — should not think it exceeded three minutes — probably much less.

No. 3 represents it at this time

After this it appeared to be nearly broken up

ed

enA

in
look

u

r

1
Amount of var. of Magnetic Needle at Cambridge in 1831 $9^{\circ} 38'$ West

Circular

So eben erhalte ich von Herrn Hind die Nachricht, dass er in der Nacht vom 19^{ten} und 20^{sten} d. Mts. um 12^h 50^m mittl. Zeit wieder einen neuen Planeten entdeckt habe, der an Helligkeit einem Sterne der 9^{ten} Grösse gleicht. Die in derselben Nacht angestellten Beobachtungen ergaben folgende Positionen des Planeten:

	Greenw. m. 21.	R.	Decl.
1851 Mai 19	12 ^h 52 ^m 36 ^s	16 04 10.41	-13° 23' 34.9"
	13 26 36	16 04 8.81	-13 23 37.6

Hiernach ist die scheinbare täglich rückgängige Bewegung 1^m 8.2

Altona 1851 Mai 23.

A. C. Petersen

Circular

Herr Brorsen hat auf der Jenftenberger Sternwarte am 1^{sten} August des Abends um 11^h 45^m in dem Sternbilde der jaghunde, einen telescopischen Cometen entdeckt, den er zwar klein, aber recht hell nennt. Aus 7 Vergleichen mit dem Bessel'schen Sterne ster Grösse Zone 413 $13^{\circ} 53' 57''.12$ $+31^{\circ} 31' 40''.2$ folgte:

	M. Jenft. Zt.	R. S.	Decl. S.
1851 August 1	$13^{\circ} 09' 21''.4$	$13^{\circ} 54' 58''.43$	$+31^{\circ} 27' 07''.3$
Tägliche Aenderung		$+ 1^{\circ} 32'.9$	$+ 23'.25$

Der tiefe Stand des Cometen und wechselnde Bewölkung erschwerte sehr die Beobachtungen.

Circular

Herr Gouzon Astronom auf der Pariser Sternwarte, hat dort am 15^{ten} April um 9 Uhr im Sternbilde des Beckers einen telesopischen Cometen entdeckt. Er stand westlich von der Linie die ϵ mit β verbindet, aber dem letzten Sterne bedeutend näher. Sein Kern hat einen ziemlich hellen Glanz und ist von einem grossen kreisförmigen Nebel umgeben, ohne Anzeige eines Schweifes. Wolken verhinderten Herrn Gouzon ihn vor 10 $\frac{1}{4}$ ^h zu beobachten. Er ward mit einem Sterne 7^{ter} Grösse verglichen dessen genäherte Position

$R\ 11^{\text{h}}\ 05^{\text{m}}\ 55^{\text{s}}$ Dec. $-25^{\circ}\ 39'$

ist. Aus einer grossen Anzahl von Vergleichen ergab sich für April 15. $10^{\text{h}}\ 54^{\text{m}}\ 52^{\text{s}}$ M. Par. Zeit.

$R_p = R^* + 2^{\text{m}}\ 35^{\text{s}}\ 78$ Stündliche Beweg. gegen Westen $= 4.5$

Decl. $p = \text{Decl.} + 7^{\text{m}}\ 33^{\text{s}}\ 70$ Stündliche Beweg. gegen Norden $7^{\text{m}}\ 17^{\text{s}}\ 6$

Der Unterschied der Refractionen ist diesen Angaben berücksichtigt

Altona 1849 April 19

H. C. Schumacher

light

White Mountains in New Hampshire

Mt. Washington North Lat. $44^{\circ}17'10''$ } Coast Survey
West of Green. $71^{\circ}17'10''$ }

When the mountain (Mt. Washington) is ascended, its uppermost or bald portion, 1800 feet in height, is found to consist wholly of a loose, irregular, disconnected heap of rocks, of all shapes and dimensions, from one to thirty feet in diameter, lying confusedly one above another, but all resting firmly in their places, having found situations where they can resist the torrents, that roll over them, in descending the sides of the mountain at certain seasons of the year. These rocks are of gneiss and micaceous schistus, or rather of an intermediate substance between the two, approaching sometimes the one and sometimes the other. The mica is abundant and brilliant, but its stratification is uneven and irregular, and often interrupted by thin strata of quartz. Owing to the irregular position of the rocks, their strata are found resting in every possible direction.

The vegetation of the White Hills has been divided with propriety, into three zones. 1. That of the common forest trees; 2. that of dwarf evergreens; and 3. that of Alpine plants. The woods which extend from the base up the sides to the height of about 4000 feet from the sea, consist of the Rock-maple which is the most abundant tree, the Red-maple, the Silver-fir, the Hemlock, the Black and White-spruce, the White-pine, the Beech, the Black, Yellow and White-birch. The undergrowth was principally of the *Viburnum lantanoides*, the *Acer montanum* and *striatum*, and *Cornus Americana*. Under our feet was the *Oxalis acetosella* beyond every other species of plant, *Dracena borealis*, *Cornus Canadensis*, *Gaultheria hispidula*.

When the common forest trees terminate, the second zone of the mountain immediately commences, the line between them being distinctly drawn. This region of a belt of black-spruce and silver-fir, rising to the height of seven or eight feet, and putting out, firm, horizontal, or depending branches, so that each tree covers a considerable extent of ground. This mode of growth may be ascribed to two causes: 1. The great length of time that the snow rests upon them, weighing down their branches, and confining them in an horizontal direction. 2. The extreme cold which prevails here in winter, and which is destructive to all vegetation, that is not secured by being hoisted under the snow. Upon the ground under these evergreen trees, there were but few other vegetables. The only plants which I recollect in flower ^{July 2, 1866} were the *Houstonia coerulescens* uncommonly large, and *Cornus Canadensis*.

Above the zone of firs, which terminates as abruptly as it began, is a third bald region wholly destitute of any growth of wood. The predominance of rocks on this portion, leaves but a scanty surface covered with soil capable of giving root

to vegetation; yet to the botanist this is the most interesting portion of the mountain. Many of the plants of this region are rare, and not to be found in the region below. They are for the most part natives of cold climates and situations, such as are found in ~~cold climates and situations~~ high latitudes, or ^{at} cold great elevations. Among them are natives of Siberia, of Lapland, of Greenland and Labrador. Vegetables of this race, usually known by the name of Alpine plants, have always been found difficult of cultivation. They are impatient of drought, and of both the extremes of heat and cold. During the severity of the winter, in their native situations, they are preserved from injury by the great depth of snow under which they are covered, which secures them from the ⁱⁿ element of the air, while they partake of the temperature of the earth below them. When the snow leaves them, which frequently does not happen till the middle of summer, they instantly ~~they~~ shoot up with a vigor proportionate to the length of time they have been dormant; rapidly unfold their flowers, and mature their fruits; and having run through the whole course of vegetation in a few weeks, are again ready to be entombed, for the rest of the year, under their accustomed covering of snow. ~~They~~ These plants, notwithstanding the high and barren elevations at which they ^{frequently} grow, do not suffer for the want of moisture, being constantly irrigated by the clouds which embrace them, and by the trickling of water over their roots from the eminences ~~below~~ above.

The unsettled state of the country for some distance around these mountains, the many recesses and solitudes which they possess, that are rarely visited by man, has rendered them still a resort for many of the original animals of the continent, whose species have nearly disappeared from the more inhabited parts. The moose (*Cervus alces*) still resides here, and we were told, that upon the Pliny mountains, about 20 miles to the N.W. some of these animals are killed in the course of every winter. The bear (*Ursus Americanus*) inhabits the woods about the base and sides of the mountain, where he is not unfrequently met with. The wolves (*Canis lupus*) being gregarious, move in troops, and are said to visit this part of the country once in three or four years. Several of them were killed last winter in Eaton, a town adjoining the mountains. The wolverine, (*Ursus luscus*) raccoon (*Ursus lotor*) porcupine, (*Erethrix dorsata*) and sable, the two latter in considerable numbers, are found in various parts of the forests; the wild cat (*Felis montana*?) is occasionally killed here; the catamount (*Felis concolor* s. *concolor*) is at the present day seldom heard of.

October 1816 New-England Journal of Medicine and Surgery vol. v No. IV

White Mountains in New Hampshire

The Indians gave them the name of Agiochohook: They had a very ancient tradition that their country was once drowned, with all its inhabitants, except one Powaw and his wife, who, perceiving the flood, fled to these mountains, where they were preserved, and that from thence the country was re-peopled. They had a superstitious veneration for the summit, as the habitation of invisible beings; they never ventured to ascend it, and always endeavoured to dissuade every one from the attempt. From them, and the captives, whom they sometimes led to Canada, through the passes of these mountains, many fictions have been propagated which have given rise to marvellous and incredible stories; and particularly, it has been reported, that at that immense and inaccessible height, there have been seen castles, which are supposed to appear luminous in the night.

Belknap's History of New Hampshire vol. III

1642 One Darby Field, an Irishman, living about Piscataway, being accompanied by two Indians, went to the top of the White Hill. He made his journey in 18 days. His relation ^{at his} ~~was~~ return was, that it was about 160 miles from the Saco, that after 40 miles, he died for the most part ^{ascending} ~~return~~; and within 12 miles of the top, was neither tree nor grass, but low savins, which they went upon sometimes, but a continual ascent upon rocks, on a ridge between two vallies filled with snow, out of which came two branches of the Saco river, which met at the foot of the hill where was an Indian town of some 200 people. Some of them accompanied him within 8 miles of the top, but durst go no further, telling him no Indian ever dared to go higher, and that he would die if he went. So they staid there till his return, and his two Indians took courage by his example and went with him.

Winthrop's Journal

White Mountains in New Hampshire

The foundation, or mass of this mountain, as it is seen in the deep gorges cut by the slides in the western side, is granite; and the top has been stated, by those who have and by others who have not ascended it, to be granite; and Alpine travellers, who have visited Mont Blanc, have thought they saw in the vast ruins surrounding the summit; the remains of lofty aiguilles, that towered above the present peak; but let the observer stand at the most elevated point; near the rude antifeical monument, as in the centre of a decapitated, and let him critically examine the rocks in the whole circle about him, and he will soon discover the incorrectness of these opinions. He will find the rocks stratified, layer upon layer, and symmetrically arranged around the center he occupies. The rock is mica slate, consisting of coarse mica and fine quartz, occasionally with fine grained veins of the two minerals, with a little feldspar, and considerable veins of white quartz. The uniformity of this surface, in level and appearance, is such, that a passage to the top is marked out by no ravines and eminences, but the path leads directly over the ruins, and the guide himself is directed by masses of white quartz, or collections of stones raised at proper distances. Near the top are small black tourmalines, and also a small spring of water.

The case is clear. The mountain of granite was raised from the deep, bearing up on its Atlantean shoulders this huge covering of mica slate, that extends a quarter of a mile below the summit, and by disruptive agencies has been pressed in every direction, and reduced to ruins. The granite, instead of rupturing the mica slate, and protruding at the center of elevation, itself forming the peak, has broken it at some distance from the center, and we ought to find the long line of disruption of the mica slate, if the rocks remain and are covered, very far down the mountain; if not, in the low grounds of the valleys.

Prof. O. P. Hubbard Journal of Science vol. 34 No. 1
page 121

White Mountains in New Hampshire

For science there is little to survey. The piles we trod on were the ruins of the stupendous granite mountains, elevated in ancient time, lashed by the storms, cracked by the frost and mutilated for untold ages by the same, although slow agencies of nature. The very peak of the mountain is mica slate supported by granite. There could be no doubt; that the immense masses of loose rocks, of every size, which we saw around us, were once united in a connected summit; and that these ruins are only evidence of the mighty work of demolition, which is always going on with a real although imperceptible progress. As to organic remains, it were ~~vain~~ ^{vain} to look for them in this primitive region, and almost equally vain is it to expect to find any living animal in these wild and barren solitudes. It is, however, a satisfaction to have trod on the highest peak of New England, the most elevated of the United States, and of North America, until we reach the Rocky Mountains and the table land of Mexico.

Prof. B. Gilliman Jour. of Science vol 34 No. 1
pages 798, 80

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