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September 2nd

The summit was enveloped in mist till 18 hrs, and clear thereafter till midnight, but the sky remained overcast with Cum. and Cum-s., and fog covered the lower hills around.

September 3rd

At 5^h and 6^h the summit was clear of mist but enveloped for the rest of the day. After 6^h observation, a glory and fog bow were seen. The following are the measurements obtained by Stephenson:-

Glory - Radius of Red $30^{\circ} 44'$ at 6^h of m.

" " Outer Red $40^{\circ} 56'$

" " Inner Red $20^{\circ} 42'$

Order of Colours:- Centre, bright yellowish space, spectrum blue to red and spectrum blue to red again.

Fog bow - Radius = $35^{\circ} 4'$

September 4th

Top cleared after 20^h and some cirrus types were observed on sky, and mist was seen covering surrounding hills.

September 5th

Summit was clear for a short time about noon and five minutes of sunshine were recorded - cumulus and cir-s covered the sky.

September 6th

Showers of rain, hail and sleet

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free during the day, and the wind ² was very squally throughout. At 11 hrs today it was observed that the ~~anemometer~~ Barograph had not been recording since 18^{hrs} yesterday, due to the old cause of stoppage - the Care catching drum.

September 8th - Robinson's anemometer was tied at 2 hrs but was ref. again at 11 hrs. The summit cleared at 4 hrs and remained

clear for the rest of the day, but fog lay on the other hills around and occasionally rose to almost the level of summit, and on this fog during the forenoon glories were observed.

The following measurements of these glories were got:

Height	Radius of red ring.	Order of colours from shadow outwards
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9 ^h 20 ^m	Outer 6° 27', inner 4° 52'	
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11 ^h 20 ^m	Outer 8° 13', middle 6° 18', inner 3° 40'	
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11 ^h 25 ^m	" 8° 13', " 6° 18', " 3° 46'	Bright y. b, g. y. r. v. b, g. y. r. b, g. y. r.
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Immediately after the above	" 8° 13', " 4° 56', -	
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11 ^h 40 ^m	" 5° 34', " {2° 56' / 2° 45'}	- Bright y. r. v. b, g. y. r. b, g. y. r.
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The last observation was made from the East Point; the others from the North Cliff.

At 6^h 41^m a double Solar Corona was observed, and measured. Radius of Outer Red 2° 51' and of inner 1° 40'. A coating of dew was observed on the Black hills at 20 hrs. A faint gray glimmer at N. horizon at 23^{hrs} was probably auroral.

At 6^h 7^m 8^m 9^m and 10^h today the Wet Bulb was not properly moistened - The entries on the Daily and Monthly sheets are therefore interpolations -

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September 9th - At 1^h and 2 hrs a faint aurora was seen low to N^Ws. A Pink Foreglow with streamers was observed a short time before sunrise (6^h 35'), and at 6^h from the shadow of Ben Nevis was seen above the horizon. Fog lay on the surrounding hills all day, ~~and~~ rising and enveloping the summit for short intervals at 11^h and again at 17^h after sunset - the Afterglow with streamers was observed.

September 10th - From 19^h till 23^h the sky was quite cloudless but by midnight it was overcast with cirro-stratus.

September 11. Mist came on at 1^h and enveloped summit all day. Raining almost all day.

September 13th - The mist cleared away after 4^h and except for a little passing fog at times in forenoon the summit was clear for the rest of the day. All forenoon there was fog in valleys all round, and thick haze in afternoon. An aurora was observed at 22 hrs and again at midn. The thermometers were shifted after 17^h - dry, 192671 and wet 192677 were taken in and dry, 192660 and wet 192671 were put out. The foreglow was observed in morning and the afterglow and Earth shadows were seen in evening.

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September 14th — From 2^h till 7^h mist or fog on hill top, but clear for the rest of the day, and except for a little cirrus near the horizon the sky was cloudless, but thick haze filled the valleys all around.

September 15th — Sky cloudless till 3^h and cloudy with cir-c. till 5^h. Thick fog came on at 6^h ~~which~~ changed to mist and rain at 8^h which prevailed for the rest of the day.

The Zodiacal Light — was visible in E^{tn} sky at 3^h and before sunrise a red fore glow was observed.

September 16th — After 4^h summit — cleared and remained clear for rest of day. Fog on ~~the~~ hills around all day, rising about midday to near level of summit but sinking again at night. At 6^h 10^m a 'glory' was seen from the top of Tower on a mass of low cum. to W^{ds} of summit — radius of inner red $2^{\circ} 24'$, of outer $10^{\circ} 7'$ of extra outer $5^{\circ} 14'$. A fog-horn was seen at same time, radius $35^{\circ} 4'$. The order of the colours in the Glory was — from shadow outwards bright y, r, g, y, r, g, y, r, y, r. At 7^h 10^m another Glory was seen in which order of colours was, shadow bright y, r, b, g, y, r, b, g, y, r, — radius of inner red $2^{\circ} 41'$ and of outer red $5^{\circ} 0'$.

September 17th — The Zodiacal light was seen at 3^h and 4^h. The summit was clear till 5^h and

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again from 9^h till 16^h except for a little fog 5
driving past occasionally. During the rest of
the day it was enveloped in fog or mist.

September 18 — Mist cleared away after 22 hrs.

At 22 hrs. a lunar corona was ~~observed~~
observed. At 23 hrs. and midnight fog lay in
the valleys all round. At the ~~23~~²³ hours a
lunar glory was seen. The observer's
shadow was well defined, and about it there
was a bright glow which was bounded
by a faintly marked red ring of radius.
2° 29'. The fog on which the glory was
formed was pretty thin. At the same time
a lunar fogbow was observed.

September 19.

Very fine sunrise. — Just before the sun
rose, long pink streamers were seen diverging
from E^{na} horizon passing overhead and converging
to W^d where a rosey belt topped the Earth shadow.

* The valleys were filled with fog ^{all forenoon} over which after
4^h thick haze crept up from the South. In the
afternoon the fog had disappeared but the
haze continued to in valleys. At 23 hours and

midnight an aurora was seen. It consisted of
a single, well defined but not very bright arch
spanning the Nth sky from W to NE and
rising at 23^h to 15° alt. and at midnight to 8°.

* The shadow of Ben Nevis was well seen in the
Earth shadow, and shortly afterwards in the rosey belt
shortly after sunrise (5.50^m).

September 20th

Aurora visible all morning till 5^h
Single arch, highest to NW and bent down a little
to NE

Upper glow seen at 5^h deep reddish color - Earth shadow
and shadow of Ben Nevis seen as usual at sunrise -

Upper glow seen after sunset at 19^h

Thick haze topped at times by stratus - fog all round
all day, only the higher hill tops showing above it -

September 21st

Upper glow seen at 5^h Sun seen at 6^h 2^m
Thick haze topped by layer of fog or cloud all round
the whole day ~~at~~ to about 3000 feet -

Today Mr Osmond returned to the observatory and
Mr Rankin went down -

September 22nd

Earth shadow & Ben Nevis shadow seen
at sunrise (about 6^h) as usual -

Thick haze & fog in valleys similar to yesterday -
air very dry in forenoon -

Today some of the observations were taken by Mr
C Gray, Mr R. Turnbull being unwell -

September 23rd

Earth shadow and shadow of Ben Nevis
seen at sunrise as usual - seen also at sunset -
Sun last seen at 18^h 20^m

Fog or cloud layer on hills all round at about

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3000 feet all day; dark haze look to E^d above this fog in afternoon -

September 24th

The fog on hills round rose higher and by 3^h was begining to pass across the top of Ben Nevis: ~~the~~ it never cleared off completely for more than a few minutes at a time all day - Solar corona seen in morning, and Glories shortly before 10^h all too fleeting to measure.

Today Mr Mackenzie telegraph lineman came up and examined the earth contact of the cable which was not working well owing to the great dryness.

September 25th

Robinson Anemometer tied up after 1^h. It was set off again after 11^h but tied up after 19^h. Thin wet mist with Moore gleaming till 4^h when it sank lower and continued to be about the level of the hill top till 13^h in the afternoon the air was free of fog but towards evening - after 16^h it gathered again on and under the hill top -

Upper glow seen at 5^h and at 19^h. Earth shadow seen at 6^h. Sun first seen at 6^h 12^m. Solar Corona seen at 6^h 20^m (?) Three sets of coronae = radius of inside of middle red = $2^{\circ} 28'$.

at 7^h portion of fog low seen on upper surface of fog under Ben Nevis. Radius (roughly) to inside $30^{\circ} 48'$ outside $42^{\circ} 57'$

at 7^h fog crystals one inch long on chimney stays -

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Another fog low seen at 9^h Radius inside 32° 14' m
— outside 37° 3'

Sunna Corona seen at night — usually double —

September 26

Fog under hill top till 2^h but passing across and over the top most of the rest of the day — Ice crystals forming freely on all exposed surfaces till Noon. Robinson anemometer set going after 14^h Faint single arch Aurora seen at 21^h and 22^h.

Today Mr Gray left the Observatory —

September 28.

At 6^h sky covered with cir-stratus in streaks lying W. N. to E. S (dark form) and colored with yellow, pink and purple — all moving from W. N. Detached fog among hills rising out of valleys when clear in morning, but thick mist on Ben Nevis all afternoon. Today water had to be carried up from the Red Burn as the stored supply at the Observatory was exhausted.

Today Mr MacLachy plumber came up from Fort William to repair broken lightning conductor

September 29th

Robinson anemometer tied up at 13^h Ground white with freshly fallen snow at night — Mr MacLachy plumber left the observ^y having finished repairing the lightning conductor.

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October 1st

Today the Obay Hotel was closed for the season - Water was again brought up from the Red Burn.

October 2nd

Top cleared shortly after 22^h leaving cloudless sky and no fog in valleys except a few isolated patches, but the air continued saturated - Faint aurora seen at midnight -

October 3rd

Hill top clear at times and no fog below but sky always covered with cumulus quite close above the hill tops all round -

Today J. Miller returned to the observatory -

October 4th

Rain fell in forenoon and coated everything with ice - at 21^h it was found that an air bubble had lodged along the index of the minimum thermometer in use (No 116918) and the index was moving with the column of spirit - It was taken ~~it~~ in the bubble shaken out, & put out and set at 22^h

Today John Duncan left the observatory -

October 5th

Snow falling and drifting all morning - The Turner door had to be used in forenoon - The horses were prevented coming up by the storm - After 15^h a small box was put out in the new ladder stand (No 2) with Py 192671 2W & 192677 in it - Duplicate readings were taken as follows -

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	Large Box		Small Box	
	Dry	Wet	Dry	Wet
16 ^h	24.0	24.0	23.9	23.9
17 ^h	23.8	23.7	23.6	23.7
18 ^h	23.3	23.4	23.5	23.5

after 18^h Dry 194660 and Wet 194672 taken in from large box; and Min 138533 put out in small box. At 17^h and onwards the readings in small box were entered on daily sheet. At 21^h the Min in small box was set and the syne test paper put in it. After 23^h the Max (197293) and Min (116918) were taken in out of large box and the box tied up.

October 6th

Top clear several times for a short while; no fog below, sun shining in patches on hills round. The 23^h observation was ^{not} taken till 23^h 5^m. Today Mr A. Rankin returned to the Observatory.

October 7th

Today Mr Turnbull left the Observatory.

October 8th

Robinson Anemometer started after 12^h

October 9th

Top clear but detached fog on hills all morning. Eclipsing seen at 7^h. The order of colours was — Shadow — Red¹ Green yellow Red² Blue Green yellow Red³. Solar halo seen at 10^h. From 15^h onwards thin mist on hill top but stars seen at night through it. Robinson Anemometer tied up after 5^h.

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October 10th

At 11^h Fog-lin seen occasionally -
 cirrus clouds in morning moving from West rather fast -

October 11th

Sky cloudless in morning but fog on hills
 around - At 5^h & 6^h sky covered with cirro-stratus lying
 NNE to SSW - At 8^h the fog had risen higher and
 at 9^h covered Ben Nevis also - Icey fog crystals forming
 about Noon - after 23^h Robinson Anemometer started.

Today Mr Mackenzie Telegraph-lineman came up
 and put some new cells in telegraph battery -

October 12th

Heavy rain all morning -
 after 14^h Robinson Anemometer tied up -
 The snow which fell at night was hard & dry -

October 15th

Robinson Anemometer started after 8^h
 dense, heavy, small rain fell during almost the entire day -

October 16th

At 21^h the Moon and Stars began to show
 through the fog, and from 22^h till midnight the sky
 was clear, but ~~the~~ loose hazey looking fog covered
 the hills round and occasionally blew across Ben
 Nevis also -

October 17th

At about 3^h-5^h Meteor seen to N^h shooting
 downwards towards the left -

Haze and fog on hills round and sky frequently

covered with cumulus and sand till 7^h but at 8^h cirrus had gathered over the whole sky & continued till hid by the fog which came over the hill top in the afternoon -

at 6^h sunrise columns seen in a clear streak to E^W and at 7^h the shadow of Ben Nevis -

Today Mr A. Dupdale arrived at the Observatory and Mr A. Rankin went down -

October 18th

Top clear for a great part of the day but thick haze & fog covering all the hills round -

October 19th

Fog and haze on hills & sky overcast but air dry till 20^h after this mist began to pass across Ben Nevis also and rain began shortly before 21^h -

October 20th

Sky cleared at 5^h and remained almost cloudless all day - but thick fog lay over all the hills round and from 7^h to 12^h covered Ben Nevis also - During most of the day no hills top except the ridges of the Anach Mòr & Anach Beag (4000 ft) showed above the fog, but at night a few peaks to the Southward became visible - Some glories were seen on this fog but all misty and badly defined - A fog-bow was seen at 13^h The Earth shadow & shadow of Ben Nevis were clearly seen at sunset, and the upper glow

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at about 17^h 20^m No glare at sun or unusual
colours in sky - Dew lay on all wood work &
on dark coloured stones at night, but not on
whitish stones -

During the last few days additional Guide-posts
have been put up between the Observatory and the
Plateau of Storms -

October 21st

Fog on hill tops as yesterday all morning;
in the afternoon however it turned more into haze
towards the SW² and the shore of Loch Linnhe were
visible through it -

The upper glow was seen at 6^h 45^m the Sun rose
above the fog at 7^h 0^m and the Earth shadow &
shadow of Ben Nevis were seen as usual -

Glories were seen on the fog at various times during
the day but no fog-bows either Solar or Lunar -

The following measurements were made of a
glory seen from East End of hill at 13^h 25^m

Four sets of colours = innermost a confused blotch -	
Radius of Second Red = 2° 28'	Second yellow 2° 4'
" " Third Red = 4° 20'	Third " 4° 0'
" " Fourth Red = 6° 7'	

The sun set at 17^h 10^m - The Earth shadow,
Ben Nevis shadow & after glow seen as usual -

October 22nd

The fog on hills gradually passed more completely
into haze which became very thick towards night -

From 8^h onwards the sky was cloudy, mostly small and rather high Cumulus. Between 19^h & 20^h a shower of rain fell though the humidity at neither hour exceeded 50 per cent.

The Wet Bulb reading at 17^h looks "out"; but special note was made of it & it is probably correct.

October 23^d

Thick fog & haze on hills round till 4^h after which mist covered Ben Nevis also for most of the day - Up to 4^h the air was very dry the humidity being under 40 per cent but a little rain fell occasionally -

October 24^d

Very squally South Westly winds for the last few days; the squalls frequently showed a tendency to veer in direction as they passed, beginning with S wind & drifting gradually to W - The rain today mostly fell in heavy showers -

October 25^d

A heavy shower of hail fell at about 16^h - 30^m quite whitening the ground - hail fell again several times later, and sleet at 23^h and Midnight -

A flash of lightning, accompanied by a strong earth-current in telegraph cable, was observed at 18^h - 33^m - The South Westly winds which lasted up to about 17^h had the ^{same} squally character as yesterday -

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October 29^d

Robinson Anemometer tied up after 2^h
 Rather heavy snow showers fell during the day, the snow
 being mostly hard & icy in character, but at night
 in the intervals between the showers the sky was
 sometimes cloudless - The windward (ie N and W)
 corners of thermometer box were choked with ice
 formed out of the mist till 22^h after which
 they were cleared -

A flash of lightning was seen at 19^h 8^m no
 thunder or earth-current.

October 30^d

The snow which fell today was hard & icy
 in texture, almost passing into hail at times - It did
 not melt away but lay covering the ground -

From 7^h to 10^h inclusive the wet bulb read a few tenths,
 never over half a degree, lower than the dry bulb, but as
 this was obviously due to the wet bulb being frozen
 while the dry was between 32° & 33° these readings were
 discarded and the wet bulb entered on daily sheet as
 the same as the dry bulb -

October 31^d

The thick wetting mist today covered
 everything with ice & the corners of the thermometer
 box were a good deal choked up -

A horse was up with stores, probably for the last time
 this year on the 19th

29 Tourists climbed Ben Nevis during October -

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November 1st

The thermometer-box was shifted at 4^h. 20^m. Dry-bulb, 192660, Wetbulb 192672 and minimum 138545 were put out—height above snow not altered.

Today Mr. Rankin returned to the Observatory, and Mr. Omond went down

November 2nd

The hill-top was clear of fog mostly at forenoon and at times in afternoon.

At 12 hrs a weasel was seen at the Cranage Caion. Stewart was up today with a hired man and horse with fresh provisions. At 5^h. 30^m the thermometer-box was shifted. Dry-bulb 192671, wet bulb 192677 and minimum 138533 were put out; but at 21 hrs it was observed that the upper end of spirit-in min. was detached. It was replaced by min 138545.

November 4th

Today and yesterday the fog cleared for a little about midday and a few minutes of sunshine were recorded each day. Both days also snow-crystals were rapidly forming from the fog on all exposed surfaces, though little or no snow was collected in the gauge.

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November 5th

Today the times of change of watch at the Observatory, were made two hours earlier throughout the 24 hrs. than they have been up to this. The hours at which the different watches begin now are: -
3^h, 12^h, 15^h, and 18^h.

Fog crystals forming all day, but 18^h it was observed that they were brown.

November 10th

Since the 4th the weather on the different days has been very much the same, viz; Gales from E, E.S.E. or SE blowing with force varying from 5 to 10, fog on the summit almost continuously from which fog-crystals were forming in abundance on the windward side of obstacles, and little or no real snow falling.

[Note. On the top of "McLean's Steep" and on the slope between that and the ~~First~~ "Second Gorge" holes in the snow crust were observed to leeward of cairns and large stones. The edge of each hole was a thawing rim of ice, with no snow inside among the stones. Water was dropping from the edge of the holes but 2 or 3 inches among the snow

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was quite dry and powdery, and the ¹⁸ temperature of the air was all the time below freezing, and on one day, the 6th was as low as 23° i.e. at the Observatory. Quite different holes were observed on "McLean's Shelf" within 6 ft. of the cliff edge, where spaces 3 ft. in diameter were laid bare and pieces of the crust and small stones strewn about on the surface.]

November 15th

At 2^h the summit cleared, and till 6 hrs. the air was dry. At 2^h 15^m the thermometer box was shifted. Dry 192660 wet 192672 and min 138533 were put out. - height above surface not altered, i.e. the box is still in the first step of ladder stand.

The Robinson Anemometer was let off at 10^h but was tied up again at 12^h. At 21 hrs it was found that the index of minimum had been shaken. Top clear but dull threatening fallow on sky from 22^h till midnt.

November 16th

Very stormy till 10^h. The wind was very squally. The observer was blown down several times. From 5^h till 11^h.

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there was no rain gauge out, the amount of icy drift making its readings useless. At 4^h Robinson's Anemometer was started, but at 8^h it was observed that one of the cups (the rounded one) was gone, and could nowhere be found, and also that the whole pillar on which the instrument is mounted was shaking wildly. At 9^h it was observed that another cup was gone, and the observer attempted to stop the instrument but failed owing to the strength of the wind. The cups broke off with their arms and stays attached to them. One has been found but the other has been blown over the cliff apparently. All round the Observatory stones (thin packing stones) were blown out of the wall and several of these were found on the Kitchen roof. Lightning was seen at 6^h 13^m and again at 23^h 40^m, at the latter hour the flash was accompanied by a click in the telegraph instrument and followed in about 3 secs. by thunder. On the daily sheet the underlined values in the 'Amount of Rain' column are interpolations.

* The flexible shaft of the anemometer gave way at the middle joint; apparently because of the rocking of the pillar.

1868 November 17th

St Elmos Fire was seen at 6^h 5^m as match-head glows on lightning rod vane, Robinson's anemometer and on kitchen chimney. Hissing noise heard. It disappeared in about 3 mins. after it was first observed. Several times during the forenoon the telegraph instrument was disturbed by lightning or earth currents. Conical (and spherical) snow was falling about midday. At 23^h a weasel was seen in the visitor's room, ~~and~~ It was larger (?) than the common weasel and was ~~of~~ almost pure white in colour.

November 19th

Very heavy rain was falling all morning. For the hour ending 12^h, 0.373 inch was measured. There was a sudden drop in the temperature between 12^h and 13^h - these readings at these hours being respectively 37.4 and 31.9. The summit was clear at 22^h and 23^h, but the sky remained heavily overcast, and to N^{do} at 22^h the appearance was very "gloomy".

November 20th Bright flash of lightning seen at 1^h 45^m and another at 18^h 35^m. Former followed by thunder and a heavy squall of wind. St Elmos Fire was seen at 19^h 15^m for 10^m faintly, on kitchen chimney. Hissing noise.

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The lower door had to be used after 15th as the kitchen door had become completely blocked with drift.

November 21st

The lower door was cleared of drift after 15th.

November 22nd

Thermometer box was shifted at 1st 15^m. Dry bulb 192671 wet bulb 192677 and min. 138545 were put out. Height above snow not altered. Very heavy rain was falling till 14th - the amount measured for the hour ending 8th was 0.430 inch.

November 23rd

At 11th today the depth of the snow was measured at Snow gauge and found to be 12 inches.

November 24th

Very heavy rain falling in early morning the amount measured for the hour ending 2 am being 0.373 inch. Snow fell in afternoon and heavy rain again from 20th till midnight. The kitchen roof and the office-entrance leaked badly both in the morning and at night.

November 25th

Thunder was heard at 15th 45^m and two clicks were heard on telegraph instrument - during

1888 The hour, 15^h-16^h, and another at 16^h 20^m. The top 22
was clear at 23^h and at midnight.

November 26th

The top remained clear till 2^h, but thereafter it was covered with fog, except at 11^h and 12^h till 18^h when it cleared again, and till midnight the sky was cloudless or almost so, and (from 19^h) the air was very dry. The thermometer-box was shifted at 19^h 20^m - dry-bulb 192660, wet-bulb 192672 and min. 138533 were put out: height above snow not altered.

November 27th

The top was clear till 4^h. At 0^h 7^m a dark cir-s cloud was observed low to SWth, which gradually spread causing an overcast sky at 1^h 2^h and 3^h, but breaking up before the fog came on. At 4^h a lunar halo was seen. At 14^h the fog crystals of today's formation were 3 to 4 inches long.

November 28th

The top cleared at 1^h and remained clear till 17^h, but was covered after this. A lunar halo was seen at 7^h and a solar halo at 10^h. The Earth-shadow was seen at 8^h and again at 16^h.

November 29th

There was too much drift about at 23^h and midnight for the satisfactory working of the rain-gauge, so no gauge was out ~~then~~ at these hours. It was doubtful whether snow was falling then or not. Fog crystals were forming all day.

November 30th

The top was clear and the sky cloudless

1868 from 18^h till 22^h (inclusive). At 20^h 15^m the thermometer-bow was shifted. Dry-bulb 19267.6 wet-bulb 192677 and min. 138545 were put out: height above snow not altered.

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None visited the Observatory during November

December 2nd

Mist on top till 21^h - cloudless afterwards but sky had rather a misty appearance and the snow horizon looked very dark. The Thermometer bow was shifted at 22^h 15^m: Dry 192660, wet-192672 and minimum 138533 were put out; height above snow not altered.

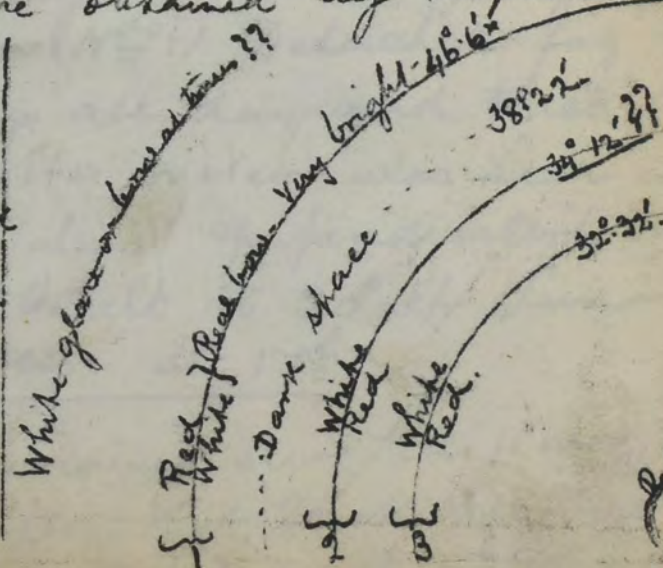
December 3rd

Summit enveloped and heavy rain falling all day.

December 4th

The top was clear at times in afternoon. At 12^h a double fog bow was observed. At 13^h and 14^h the fog bow was triple - each bow being coloured. The arrangement of the colours was as per diagram. The measurements were obtained by stephanorae.

A Glory, was also seen. of only one red ring. The mist on which the fog bow was formed was somewhat thin and distinctly wet. At 15^h everything was dripping. The Earth shadow was seen at 16^h



at 19.3.45
glory

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December 7th

Today the Rainband Spectroscope was let-fall and the prisms got displaced, rendering the instrument useless for observing with, until repaired. A horse got up to the Observatory today - the road being almost clear of snow all the way.

December 8th

St. Elmo's Fire was seen at $23^{\frac{1}{2}}$. Snow was falling at the time - loose and dry, with small round particles among it.

December 10th

Bright meteor seen at $6^h 4^m$ - path, from between Castor and Pollux to between Capella and β Aurigae. Bar Thermometer box was shifted at $6^h 30^m$ - Drybulb 192671, wet-bulb 192677 and minimum 138545 were put out - height above snow not altered. Mist on summit till 5^h but clear for rest of day. Some Cirrus on sky in afternoon. lying NW-SE and moving from (N^{ds}?) Detached fog in some of the valleys all day, and thick haze at night. Another meteor was seen at $24^h 5^m$. It fell almost perpendicularly in NE sky from about 60° alt. to 20° alt. Lunar Corona was seen at 17^h .

December 11th

Summit remained clear till 11 am, but was enveloped after that. Thick haze in valleys around and fog on the E hills all

1886 forenoon. During the forenoon hours a 25 peculiar type of cloud was observed in sky. It consisted of a thin ^{fibery} sheet of cloud raised in places into waves, and hummocks. At times the top of the cloud was visible, at times the under surface, and at times the edges. At 12^h when the air temp was 23° 7. rain drops were falling.

December 12th

Summit clear from 10^h till 20^h. Thick haze in valleys, and detached Cum-f in the haze. There was no haze above the Cum-f. There were two strata of upper clouds today: the higher, the usual fibery Cir-s. type, and the other, cir-s. also apparently, but detached and hard, with well defined edges, and showed dark against the sky or the upper Cir-s. Near the horizon this lower cir-s looked like Cum-s, with thin detached sheets of stratus here and there. Fleeting Glories were seen at 10^h, 12^h and 13^h.

December 13

The fog was very thick at times today, and the snow crystals deposited ~~on~~ were brown.

December 14th

A lunar corona was seen at 22^h. The top cleared at 22^h. At 23^h 15^m the thermometer was shifted: box 192660, dial 192672 and min 198533 were put out: height above snow not altered. Fog on again at midnight.

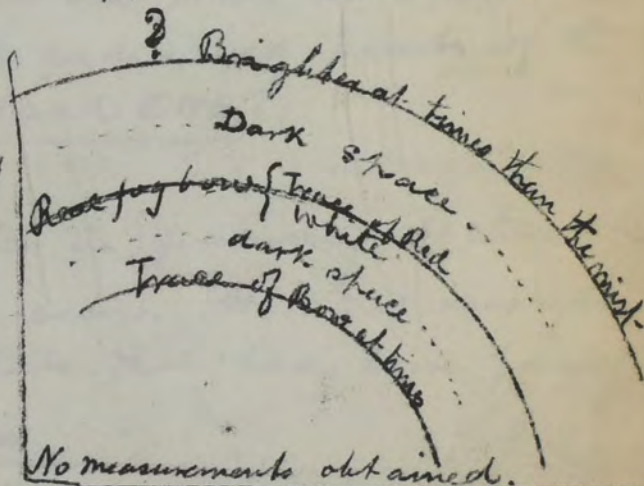
1886 December 15th

At 6^h the ~~star~~ sky above was cloudless but there was stratus at the horizon, and through an opening in this stratus to NW the sky was bright. - the brightness being apparently due to the Aurora. All afternoon a continual drizzle was falling from mist and forming a crust of clear ice on all surfaces.

December 16th

Triple lunar coronas were seen at 1^h and 2^h, and Fagboms at 2^h and 3^h. At 2^h the fagbom ~~was~~ appeared as in diagram.

The mist was very wet all day and formed a thick coat of clear ice on all exposed surfaces.



December 17th

A Solar Corona was seen at 9^h

December 18th

Top clear from 7^h till 2^h. At 7^h a Lunar corona was seen. It was very vivid. Immediately round the Moon was a bright yellow ring of about twice the Moon's diameter. Outside this was the usual yellowish white glare with red to outside, then a vivid spectrum-coloured ring. The yellowish white glare was at times momentarily broken up into one set of spectrum-coloured rings. Though this seemed to be of less diameter than the glare itself. Thin Cirrus was in front of the Moon which had a yellowish ring round it when no fog was passing, but it seemed brighter and

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and more sharply defined when the Corona was visible. The Earth-shadow was seen at 8^h 45^m. The Thermometer box was shifted after 9^h: dry bulb 192671 wet-bulb 192677 and minimum 138545 were put out. Height of box (46 inches above snow) not altered. The Black-bulb was out today - the maximum registered was 80.5. There was thick haze in the valleys all day, and fog on the lower hills to 4000 ft. - continuous till noon, but detached thereafter. The radiating points of the Cirrus in afternoon were SW. & NE. Thick fog on summit after 2^h.

December 20th

The top was clear at times about midday, but Stratus-fog lay on the lower hills, and the sky was overcast. The radiating points of the Cir-s clouds were SSW and ENE.

December 21st

Top clear at times in forenoon. At 2^h a lunar corona was seen. At 16^h it was noted that the fog-crystals that had been forming till then were brown.

December 24th

The top was clear at times in afternoon. At 16^h 5^m the thermometer box was shifted: dry-bulb 192660, wet-bulb 192672 and minimum 138533 were put out. At 22^h the bulbs of dry and wet were 41 inches above the snow.

December 25th

Owing to heavy drift there was no rain-gauge out between 13^h and 19^h. The amounts for these hours on the monthly sheet are interpolations.

December 26th

St. Elmo's Fire was seen on Kitchen chimney at 6^h. Small spherical snow falling at the time.

December 27th

1686
Snow-hail falling in early morning. Drifting heavily from 11^h till 15^h but apparently there was no snow falling. Though not drifting so heavily after 15^h the measurements of amount of snow are yet very unsatisfactory. At 23^h a bright display of St. Elmo's Fire was observed, snow-hail was falling at the time - heavily.

December 28th

At 20^h the summit was clear and the sky cloudless, but only for a short time. At 20^h 26^m the thermometer box was shifted: dry bulb 192676 wet bulb 192677 and minimum 138545 were put out.

December 29th

Fog till 8^h: summit clear for the rest of the day but except at 14^h the air was saturated. At 21^h 23^h and midnit the Aurora was seen as a single badly defined arch low to N^W.

December 30th

The sky was almost cloudless till 11^h but overcast with cir-s till 16^h. Fog came on at 17^h. The Earth shadow and the shadow of the Ben were seen at 9^h. There was stratus fog lying on some of the hills and over the Lochs most of the day. The country all round was white to sea level today - the whiteness of the lowest 100 to 200 ft. being due to hoar-frost.

None visited the Observatory during
December

Barometers—No. 1385 was used throughout; No. 1252 was not used. Both have been during the year, and still are, in good condition: each has, however, a very slight coating of dust or oxide on the surface of the external mercury.

Dry and Wet bulb thermometers, Nos. 192660, 192672, 192671 and 192677 have been used. The other pair Nos. 50850 and 50852 has not been used. All these have been and are in good working order.

Self registering thermometers—Max, No. 117293, and mins. Nos. 116913, 138545 and 138533. have been in use at different times during the year.

Raingauges—Dr. Omund's patterns of 5 inch gauge have been used as on previous years.

Self recording Instruments—The barograph has been in use all the year, and its records have been as satisfactory as on previous years. The Direction anemometer has been in good order all the year, and, except in unfavourable weather, good records have been got from it.

The Robinson anemometer, worked very satisfactorily when the temperature was above 32° , till the 16th Novr. when two of its cups were blown off and its supports, etc, otherwise seriously injured.

The Campbell-Stokes Sunshine Recorder has been used ~~the~~ throughout the year.

On April 13th a set of photographic apparatus (camera lens, plates & chemicals) was added to the instruments at the Observatory. Since that date it has been used in photographing clouds, Halos, Glories, Fog crystal formations, etc,

Till June 21st the thermometers in use were 30 exposed in the small louvered screens, mounted on ladder-stand N°1; and after the 5th/Oct, on ladder stand N°2. Between these dates they were exposed in the ordinary-sized (Stevenson) screen.

The depth of the snow was always measured at Post A.

The Black bulb chiefly used was N°186, but N°64 which has a Crook's Radiometer attached was occasionally used ^{chiefly} in summer.

Hilgers Rainband Spectroscope was in use for observing the Rainband; from Dec 7th till 23rd it was under repair, having had its prisms displaced.

For measuring Halos, Coronas, Glories & fogbows the Strophanome was used.

Snow crystals were observed and sketched by means of a magnifying lens, specially got for that purpose.

Except in very dry weather in summer, and during thunderstorms ~~the telegraph~~ ~~the working of the~~ telegraph was satisfactory. The instrument in use all the year was ~~an~~ a 'Single (acoustic) Needle' instrument. In April and May a set of observations was made on earth currents in the cable. These were measured by means of a Thomson's Mirror Galvanometer. The battery was replenished several times during the year, and on Oct 11th most of the old cells were replaced by new ones (both being Leclanché).

The Sextant was used occasionally.

The following instruments were not in use during the year, viz:—The Thermograph, Hair Hygrometer, the Crystal-Bronze Hygrometer, the Seismograph, the Corns Dust-Collector, and Lark Hygrometer.

The working of the rain-gauge and of the ozon-tests in stormy weather has been as unsatisfactory as on previous years—the rain-gauge indications being rendered useless by drift—and the ozone tests being blown away or bleached. Otherwise the hourly observations of the various instruments and elements have been made without the break of a single hour during the year. On a few occasions, however, the outside part of the hourly observation was ^{made} from 1 to 4 minutes late, chiefly owing to the lamp having been blown out before reaching the thermometer box.

Until the 5th of Novr the hours of change of watch at the Observatory were the same as on previous years, namely, 5^h, 14^h, 17^h and 20^h but since that date there have been 3^h, 12^h, 15^h and 18^h. The permanent Staff of the Observatory are, as on previous years:—R. J. Grond, Superintendent; Angus Rankin, 1st Asst.; James Miller 2nd Asst. Till the 16th April, Alexander Drysdale was Interim 1st Asst. and again he has been the same since 17th Oct^r. Mr C. E. Gray was telegraphist at the Observatory during the Autumn months. Messrs A. J. Herbertson ~~and~~ R. Turnbull and John Duncan took the places of some of the Staff at various times during the Year.

January 1st

Fog till 6 h. and cloudless sky for the rest of the day, but thin fog was capping summit at several hours in afternoon. The thermometer-bon was shifted at 8^h 30^m — dry bulb 192660, wet 192672 and min 138533 were put out. At 13^h and 14^h double fogbows were seen, at the latter hour the bow was triple at times. At 19^h 20^h and 21^h the Aurora was seen. At 21^h it consisted of a single well defined arch stretching from N.W. to NNE, and ^{at} its highest point was about 7° above horizon. The air was saturated all day.

January 2nd

Till 3^h the sky was cloudless but thin fog was passing the summit. The aurora was seen at 1^h. Thick fog enveloped the top from 4^h till 16^h and mist thereafter. The fog was very white, dry and dense all morning. Though there was a bluish tint overhead ~~at~~ most of the time.

January 3rd

The temperature was about 31° all day, but small drizzling rain was falling which formed an icy crust on all exposed surfaces.

January 4th

At night it was noted that the icy crust on all surfaces was distinctly sonorous, emitting a musical note when struck. This crust consisted of feathery formations like those formed by fog-crystals, but not so delicate in texture as these. And seemed to be a mixture of snow and ice.

January 5th

At 13^h 15^m the thermometer-bon was shifted. Dry bulb 192671, wet 192677 and min 138545 were put out. The bon was raised one step on ladder stand. The sky was clear at 8^h 16^h & 17^h. Fog very thin all day.

1889 January 7th

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The top was clear from 6^h till noon, but enveloped in fog, which was very thick at night - during the rest of the day. Fog lay on the hills to E^h and S^h most of the forenoon. At 12^h a gloomy appearance was observed to W^h and SW^h. After 15^h the Chimney or tower had to be lagged; and the vane had to be tied because it was spinning round and round. At 2^h the observation was ~~to~~ three miles lake.

January 8th

The values for the amount of rain or snow on daily and monthly sheets for the hours from 2 to 9 inclusive today are interpolations. At these hours the drift rendered the working of the rain gauge useless.

January 9th

At 6^h St Elmos Fire was seen on Tower and Kitchen chimney. There were about a dozen different brushes on tower, each about 2 in. long. On Kitchen besides the brushes on top of cowl, there was one on a piece of snow that projected about a foot from chimney two feet from the top. Pizzing sound heard; and on raising the ice axe, the Fire was seen on its upper end and a slight current felt in ^{the} arm holding it. Flakky snow falling at the time. St Elmos Fire was heard on the observers hat, hair and pencil at 13^h but nothing could be seen of it.

January 10th

Thin fog on top till 7^h (except at 4^h) but top clear and sky cloudless thereafter till 23^h. Fog again at midnight. Haze in valleys most of the day and ~~fog~~ ^{str} fog on worn hills in afternoon. A fay bow, glory and solar corona were seen at 9^h. The corona was triple. Measurements of radii of rings as got by stephanome were: -

1889 1st ring 1° 51' } measurements not very good 34
 2nd " 2° 47' and 3° 5' 30"
 3rd " 5° 34'

The thermometer box was shifted after the 10th observation dry bulb 192660, wet 192672 and min 138533 were put out. Box put in same step of ladder stand as the one taken in had been. At 11^h the Black bulb (186) was put out mounted on bracket stand on post A. Maximum recorded by it was 78.5. The Earth and Ben shadows were seen at 16^h. At 19^h a faint milkiness in N^W sky to about 15° altitude was supposed to have been auroral. After 20^h cirrus stripes were seen near W^W and NW^W horizon lying SW-NE.

January 11th

During the last two days a considerable depth of soft, loose snow lay on the summit, and today it drifted heavily - a moderate gale having blown about all day. No fresh snow was falling today apparently. The top was clear for short intervals in afternoon and evening, showing a sky heavily clouded with cumulo-stratus. Christophers anemometer was tied after 1^h because it was turning round and round.

January 12th

Thin fog on top or passing all day. Lunar coronas were seen at 19^h and 21^h, at the latter hour the corona was triple. The 6^h observation was made 3rd late, no correction applied to readings.

January 13th

Thin fog till 3^h at 14^h and 15^h and after 18^h; but fog on the lower hills all day. The thermometer box was shifted after the 5^h observation. Dry bulb 192671, wet 192677 and min 138545 were put out in same step of ladder stand. The wet bulb had not been wetted till 5^h 45^m and at 6^h the reading was unsatisfactory, being higher than that of dry bulb. Extra readings were taken at 6^h 15^m and 6^h 30^m, and the former are those entered at 6^h on daily sheet. A Solar Halo was seen at 11^h and 12^h and lunar coronas at 2^h 3^h 4^h 21^h and 22^h - double at times. The radiating points of the cirrus today were N and SW.

1889 January 14th

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The top was clear for few hours in morning and again about midday. A Lunar Halo was seen at 3^h. The 21st observation was taken at 21^h 4^m. no correction applied to readings.

January 15th

Feathery fog-crystals forming all morning and icy crystals after 10^h. The same was tried all day.

January 16th

Fog crystals, slightly brown, forming all morning. At 19^h the rain-gauge was found half buried in drift. The reading for that hour is probably correct - though doubtful. The low door was blocked all morning. It was dug clear after 15^h but was blocked again at 19^h. The Southern top-story of Kitchen Chimney gave away today, and was temporarily worked.

January 17th

The amounts of snow entered at 12^h, 13^h and 14^h on today's sheet are interpolations. At 12^h and 13^h the rain-gauge was each time completely buried in snow and during the hour 13^h-14^h no gauge was out. Ice forming on surfaces after 18^h. Lower door dug clear after 20^h.

January 18th

Raining heavily all morning - till 13^h - and hail sleet or snow falling in afternoon.

Peculiarly shaped hailstones fell in the first shower after the rain had ceased.



Shape and real size of hail.

Each consisted of a core of dry snow, encased except on top by an icy crust. The top showed the hexagonal shape of an ordinary snow-flake. After 12^h today the Robinson anemometer was dismounted and taken in to undergo repairs. At 22^h and 23^h the Summit was clear.

January 18th

The Summit was clear at 13^h and for short-intervals during the afternoon - Between 2^h and 3^h.

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this morning the observer was down near Buchanan's Well, and both on outward and homeward journey a steady, Westerly wind of force 5 was experienced between the First Gorge and Buchanan's Well, while on the Summit the wind was NW^{ly} to N^{ly} and very variable and squally.

Today, Jas. Miller went down the hill and Wm Stewart came up.

January 20th

Top clear at times in forenoon. The thermometer was shifted at 10^h 30^m - dry bulb 192660, wet- 192672 and min. 138533 were put out. Height not altered. At 1^h and 2^h ~~lunar~~ lunar coronas were observed, at the former hour with four red rings and at the latter with three.

January 21st

Mist or fog till 16^h, but clear thereafter till midnight and sky almost cloudless. Till 18^h there was det. fog over the lower hills but none thereafter. The Zodiacal light was seen in W^{est} sky from 19^h till 22^h; it reached to the border of the Constellation Aries. From 20^h to 22^h the aurora was seen faint and low to N^{or}. At 23^h and midnit cum-cir clouds were observed to E^{ast} which retained their shape and position nearly the whole hour, though the particles of the cloud were in rapid motion from N. to S.^{outh}. At 22^h a dark cloud which covered the moon had its edges coloured. The central part of the cloud was opaque and very irregular in shape. The colours did not appear to belong to a system of rings, but conformed to the following order, namely - opaque, green, red,

After the 17th observation the thermometer box was taken off ladder No. 2. and mounted on ladder No. 1. and a fresh box was put out with dry bulb

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192660, wet 192672 and min. 138533. Readings were taken of the thermometers in both boxes till midnight and the following are the means of these: -

Irish Box in ladder No 2

Box and bulbs in good order.

Dry.

Wet-

27.7

25.0

Box in ladder No 1.

Box encrusted with ice and snow, but bulbs in good order.

Dry.

Wet-

25.9

24.5

The ice-encrusted box was taken in after midnight.

January 22nd

Cloudless till 3^h. - then Scud or Stratus till 5^h on which a lunar corona was seen at 4^h; then mist till 9^h, a little Cirrus in sky till 13^h and top clear and sky cloudless till midnight. Fog on the other hills to 4000 ft all afternoon; sinking a little at night. The Zodiacal light was visible till 22^h, at which hour a faint aurora was seen low to N^d. The low door was dry clear between 12^h & 14^h.

January 23rd

Thin mist passing at times in forenoon. A fog bow was seen at 6^h and another at 12^h and lunar coronas were seen at 6 and 7^h. Cirrus in sky (ci, ci-c, or ci-s) after 9^h. At 9^h the radiating points of Cirrus were NE-SW and at 13^h N-E-W. Mist on summit after 13^h, from when till midnight ice was forming on surfaces.

January 24th

The top was clear at 11^h and 12^h but mist on the other hills. and ci-s and ci-c in sky. These clouds were in bands lying NW-SE. Drizzling rain falling from the mist mostly all day; and ice forming rapidly on surfaces all afternoon.

January 25th

James Miller returned to Observatory and Wm Stewart went down -

1889 January 27th

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Thermometer box shifted at 1^h 15^m, Dry 192660
Wet 192672 were, after being thawed and dried, put out
again at 1^h 35^m; Min 138525 put out; Height above snow
not altered. Top clear, except for a little passing
fog in early morning, till 14^h, and fog on ~~at~~ ^{after} that
except at 16^h, till midn't. Cir. and Cir-c on sky, ~~till~~
from 7^h till 14^h: radiating points were at 13^h WNW
and ESE. After 13^h hours the ~~W~~ sky began to thicken
and at 14^h Str. or Cum-s was advancing rapidly from
that direction and fog was forming over ~~the~~ hills.
This morning there was hard frost to sea level. The
harsh shadows and Forebrow were seen at 8^h. The
Black-bull was put out at 10^h: maximum for
day 89°3.

January 28th

After the 16^h observation the thermometer
box was shifted - the hinges having fouled - Dry
192671 Wet 192677 and Min 138533 were put out -
Height above the snow not altered.

January 29th

Clearing for short intervals about midday.
The Outside part of the 5^h observation was
about 10^m late, the lamp having been blown
out several times. Vane recording today.

January 31st

Ice forming on surface in early morning.
Heavy rain falling most of the day. Wind
somewhat squally.

No visitors during January

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February 1st

Top clear from 3h to 5h but sky nearly or quite overcast with cir-s or Str-cir which was lying WSW-ESE. Rain fell in forenoon and heavy snow at night.

February 2nd

Summit clearing at times till 13^h but sky remaining overcast. St. Elmo's Fire was seen at 6^h and heard but not seen at 9^h. Snowfall was falling on both occasions. Drifting heavily most of the afternoon which makes the entries of amount of snow on daily ^{sheet} somewhat doubtful. Sheet lightning seen at 7^h.

February 3rd

At 1h the entry of amount of snow in daily sheet is an interpolation, the gauge having been found lying on its side half full of snow. There are no entries after 19^h it being too stormy to work the rain gauge; but 0.080 has been allowed for these hours and is included in total fall for the day. The wind was very squally at night; and the barometer was pumping wildly ~~in consequence~~. The following readings of the barometer were taken:—

Time	Corrected reading	Remarks.
About 19 ^h 59 ^m 38 ^s	25.116 inches.	squall.
At 20 ^h	25.176 "	lull.
" 20 ^h 33 ^m	25.211 "	lull.
" 20 ^h 35 ^m	25.218 "	lull.
" 20 ^h 36 ^m	25.147 "	squall
" 20 ^h 42 ^m	25.152 "	squall
Immediately before 21 ^h	25.061 "	squall
At 21 ^h	25.202 "	lull.

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February 4th

Wind very squally, and barometer pumping heavily all forenoon. Top clear at times in forenoon and from 14^h to 19^h. There was no gauge out till 6^h today, but apparently no snow fell till then. Thermometer-box shifted after the 15^h observation - dry bulb 192660, wet 192672 and minimum 138545 were put out, - height not altered.

February 5th

From 2^h till 5^h the fog, though the temperature was 23° to 26°, had a misty feel, and icy drizzle was falling. After 5^h and till 9^h it was distinctly mist. Summit clear at times in afternoon and at night, but sky overcast with low Stratus that was almost touching the Ben. The 21^h ozone test was not put out till midnight.

February 6th

Top clear from 17^h till 21^h but sky overcast with Cum-cir. at 17^h, which passed into Str-cir and was lowering gradually till at 20^h and 21^h it formed a uniform peltium (of cum-s?) almost touching the Ben. The air was dry from 19^h till 21^h - the lowest humidity observed was 41, at 20^h. The thermometer box was shifted at 18^h 15^m. dry bulb 192671 wet 192672 and min. 138533 were put out. - height not altered. At 18^h the radiating points of clouds were NW-SE

February 7th

Top clear but sky overcast from 8^h till 12^h and at 15^h. Snow to sea-level today.

1889 February 8th

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Wind very squally, and barometer pumping all day. Amount of snow very unsatisfactory all forenoon, owing to the drift and squally winds. There was no gauge out from 11^h till 23^h. but it was snowing slightly most of the time. There are no entries on daily sheet from 6^h till 23^h, but 0.310 inch has been allowed for that time and included in total for day. St Elmo's fire was seen at 4^h - snow-hail falling then. (The Hotel chimney was blown down today; and the Observatory - Kitchen chimney was badly shaken)

February 9th

At 2^h the thermometers were shifted dry 192660 and wet 192672 were put out. Box not shifted. Clear at times in afternoon but cloudy or overcast. Snow to Sea level.

February 10th

Top clear, ~~morning~~ except in early morning. Sky cloudy or overcast with Cir-s. or Cir-c. most of the day. Solar Halo seen from 10^h to 13^h. Thermometer box shifted after 7^h: the same dry- and wet- were left out but minimum 138545 was put out. Air dry from 8^h till 14^h. At 8^h and 9^h the temperature was lower than the range of Glaisher's tables: In calculating the dew-point etc. it was assumed that the factor for temperatures below 10° is the same as that for 10°. Lunar coronae seen in

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early morning and again at night. Earth shadow and Shadow of Ben seen at 8^h. Radiating points of Cirrus ~~were~~ were, at 14^h WNW and ESE, at 15^h, the same, and at 19^h W & N and E & S. A Snow-Bunting was seen at the observatory most of the afternoon.

February 11th

Top clear at times - chiefly in afternoon. Lunar Coronae were seen at 1^h and again at night. A few hail stones (soft) falling at 23^h.

February 12th

At 10^h, 11^h, 12^h and 16^h it was difficult to say whether it was mist or fog that was on the top. At 10^h the fog-crystals forming were slightly icy, and at 11^h there was a dull icy skin on rain gauge. The air temps. at 10^h and 11^h were respectively 20° 8 and 21° 6.

February 15th

Thermometer box shifted at 11^h 25^m. Dry 192671, wet 192677 and mm 138533 were put out. Height above snow not altered. After 23^h the above dry and Wet were taken in, and dry 192660 and Wet 192672 put out instead. Top clear, at times during the day, and from 20^h till midnight. A Lunar halo was seen at 21, 22, and 23^h. The Radiating points of cirrus were NNW and SSE. to NW and SE. after 20^h. The air was dry at midnight - humidity 38 %.

February 16th

After 1^h today Bar 1385 was found to have been slightly out of the vertical. It was readjusted vertically before

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2^h. The air was dry at 1^h and 2^h and the top was clear except at 3^h till 5^h. A Lunar Corona was seen at 3^h. From 5^h till 11^h the snow was drifting heavily: and the amounts of snow entered on daily sheet are in consequence doubtful.

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February 17th

The thermometer box was shifted after 3^h. Dry, 192671, wet-192677 and min. 138545 were put out. The low ~~mean~~ temperature reading at 3^h is probably due to the dry bulb having been acting as a wet bulb then. The top was clear from 3^h till 6^h, with haze and detached fog on the lower hills. The mean temp today was 33°9 - maximum 36°3.

February 18th

Raining somewhat heavily most of the day, changing to sleet and icy hail at night. The mean temp. today was 33°7 and the max 36°3.

February 20th

In the forenoon the cloud-cap was mist, and the snow-crystals forming were icy. Maximum temp 27°7.

February 21st

The top cleared after 3^h and remained clear, except for a little passing fog at times in forenoon, ~~then~~ for the rest of the day. The thermometer box was shifted at 4^h 30^m - Dry 192660, wet 192672 and min 138533 were put out. The air was dry at 16^h and for the rest of the afternoon. Det. fog on lower hills most of the day. The radiating points of the cirri clouds today were N x W + S x E. During the afternoon there was a very thin stratum of str-cir below large Cum-cir. It was moving quickly from N^o. A Lunar Corona was seen at 5^h.

February 22nd

Sky overcast till 4^h. Mist thereafter. Ice forming on surfaces till 7^h. Box dripper at 8^h. Drizzling the rest of the day.

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February 23rd

Top cleared after 2^h and was clear except for short intervals of thin fog for the rest of the day. During breaks in the mist at 2^h the northern sky was seen to be brighter than the rest of the sky apparently due to Aurora. The air was dry from 6^h till 9^h but saturated during the rest of the day.

Detached fog on hills around all day.

The Black Bull (106) was out today - max 96° 2.

A Triple Corona was seen at 15^h.

The foglow and earth shadow were seen at 7^h.

A "tunnel" was dug to lower door today.

February 24th

Fog on top till 10^h: clear thereafter till midnight.

Det. Curr. fog on hills around till 19^h.

Cirrus and cirro-cumulus on sky all afternoon - radiating points NE and SW - motion from NE.

The Black Bull was out today after 12^h - max 107° 3.

At 21^h today the humidity was 13.

The zodiacal Light was visible at 20^h and 22^h.

February 25th

Summit clear till 5^h but sky overcast. Clear again at midnight. Mist on top in forenoon and at 14^h and 15^h, and needle shaped snow-crystals falling then at times icy in texture. Maximum temp. 26° 3. A tarpaulined porch was made over entrance to tunnel today.

February 26th

Top Clear at 1^h and 2^h and from 10^h till 20^h - sky mostly overcast.

At 8^h it was noted the fog crystals were brown.

Thermometer box shipped at 14^h 15^h - Dry 192671

Wet 192677 and min. 138545 were put out.

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February 27th

Fog till 3^h and at 19^h 20^h and midnight. Summit clear during the rest of the day: and from 10^h till 15^h the air was dry. Cum-cir and cir on sky: radiating points at 11^h and 12^h were NNE and SSW and at 22^h NE and SW.

Part of a solar Halo was seen at 12^h and an aurora at 21^h.

Cum-f on hills most of the day.

Noar frost to sea-level at 8^h.

February 28th

Note at 13^h - white fog crystals forming.

None visited the Observatory during February.

March 1st

Fog till 19^h: Sky overcast and fog passing till 22^h: Summit clear and sky cloudless at 23^h and midn. Fog crystals forming in morning.

Faint Aurora seen at 23^h and midn.

The thermometer box was shifted after 23^h -

Dry bulb 192660, Wet-192672, and min 138583 were put out. Box was put one step higher (the highest) on ladder stand.

March 2nd

Sky overcast with thin cirri types till 4^h throughout which several of the brightest stars could be seen. Thereafter the sky was cloudless till 11^h except at 6^h 7^h and 8^h when there was a little cirrus, whose radiating points were SE and NW. After 11^h there was fog on the summit except at 15^h and 16^h.

An aurora was seen at 1^h and 2^h.

March 4th

Top clear for several hours today. Thick haze and Cum-f all round below. Radiating points of cirrus at 8^h SE & NW.

Today and yesterday a snow blunting was seen about the Observatory.

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March 5th

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Thick fog on summit all day: Brown fog crystals forming, sooty in haste.

March 6th

At ~~the~~ the rain gauge was found buried almost to the rim in a drift, but with no more inside than might have fallen during the storm.

March 8th

Dep clear several times today. At these times in the forenoon, the sky was cloudless, and there was fog all round below; and in the afternoon there was stratus or str. cum. above and passing showers seen in the distance.

Needle shaped snow crystals falling at 14^h.
The thermometer box was shifted after 7^h - Dry bulb 192671, Wet 192677 and min 138545 were put out.

March 11th

Summit clear till 15^h: fog thereafter till 22^h and mist till midnight.

Radiating points of Cir-c at 12^h were N and S. The thermometer box was shifted at 2^h 15^m. Dry bulb 192660, Wet 192672 and min 138533 were put out.

March 12th

Mist all day. Drizzling rain was falling till 18^h and heavy rain after that.

March 13th

Mist or fog ~~alternating~~ except at 17^h and midnit. Lunar Coronae were seen at 22^h and midnit ~~and~~ - an aurora was also seen at midnight.

March 14th

Dep clear at 1^h, 2^h and 4^h: mist during the rest of the day. Lunar Coronae were seen at 2^h and 22^h.

March 15th

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Not drizzling mist on summit till 18^h.
Up clear, with thin mist passing at times, till 22^h
but enveloped again at 23^h and midn. At
19^h the sky was cloudless but from 20^h till 22^h
it was covered with cirro-cumulus, on which
at 21^h a faintly marked halo was seen.

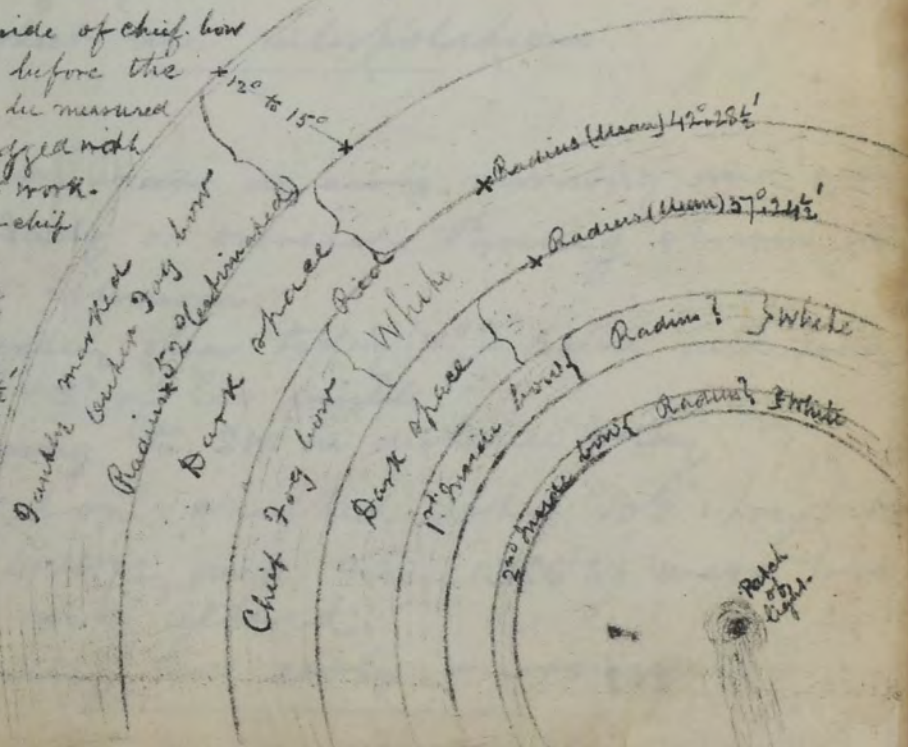
Double and triple fog bows were seen, and
also coronae on passing mist, from 20^h to 22^h.
At 20^h the fog bow appeared as in diagram
below. The chief bow was well defined, and much
brighter than lunar fog bows usually are. The
greater part of it was white — the only coloured
part being a red fringe on outside. Both inside
bows were white and showed no trace of
colour. On each side of the chief bow there was a
distinct dark space. Outside the outer dark space
and when the chief bow was at its brightest another
bow was seen. It was from 12° to 15° broad, but very
faintly marked. Two sets of measurements of the radii

of outside and inside of chief bow
were obtained, but before the
inner bows could be measured
the stephane clogged with
ice and refused to work.

The measurements of chief
bow were:—

	outside	inside
1 st	42° 57'	37° 3'
2 nd	42° 0'	37° 46'
Mean	42° 28½'	37° 24½'

At the time the fog
bow was measured the
mist was thin and
very wet, and formed
a coat of ice on
all exposed surfaces.
Air temp at time
28° 4' — the min. for
the day — the max
being 31° 9'.



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March 18th

Today the new barograph papers were begun.
(i.e. those beginning with Monday).

The top was clear at 17^h and 18^h - fog the rest of day.
At 18^h 20^m the thermometer box was shifted - dry
bulb 192671, wet 192677 and min 138545 were
put out - height not altered.

March 19th

Brown fog crystals forming all
forenoon: At 19^h there was about half an inch
of white fog crystals over the brown ones of the
morning.

March 20th

Squally, northerly winds all day, which
made working of rain gauge useless. A little
snow was falling in afternoon and at night
for which 0.070 inch has been allowed on daily
sheet. The rainfall values underlined today on
monthly sheet are interpolations.

March 21st

Top clear except in early morning and after
22^h. Sky cloudy or overcast. Passing showers in
distance in afternoon.

Air moderately clear today (0°) - Barra and Isles
beyond to N.^o & S.^o of lig visible.

Heather burning to SW.^o in distance today.

Thermometer box shifted after 10^h dry bulb
192660, wet 192672 and min 138533 were put
out - height not altered.

Rather squally in early morning.

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March 23rd

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Snow and sleet falling in forenoon and rain in afternoon.

Thermometer box shifted after 12^h. Dry bulb 192671 wet bulb 192677, and min. 138545 were put out - height not altered.

March 24th

A great discordancy in the rainfall amounts for yesterday from the time the fog changed to mist, due to the discovery of a leak in one of the gauges at 2^h today. It was calculated from duplicate rain gauge readings taken till 12^h today and from the results obtained yesterday that only 0.45 of what the rain gauge indicated could be taken as the actual fall; and on the daily sheets ~~for yesterday~~ from 10^h yesterday till 2^h today, inclusive, the values opposite the even hours and which are underlined represent 0.45 of what had been measured in the gauge. [The gauge has been sorted again].

March 25th

Snowing heavily and drifting from 10^h till midnight - measurements of amounts of snow doubtful owing to drift.

The ozone test at 9^h was bleached.

March 26th

The sky was cloudless at 21^h, 22^h and midnight but thin fog kept passing at intervals till 23^h. At midnight a faint aurora was observed near the horizon.

March 27th

The thermometer box was shifted at 0^h 25^m. Dry bulb 192660, wet 192672 and

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niv. 138533 were put out - height. not altered

The summit was clear all day. No lower clouds all day but various amount of cir. types on sky from 5^h onwards. These radiated at 6^h from NNWYSSE at 13^h from N & S and at 17^h from NNWYSSE again. and were moving at 8^h and 10^h from NNW.

The air was saturated at 1^h and midnight. but very dry during the rest of day - mean humidity for day 27. maximum for time air was dry 31. and minimum 9. The dry and wet readings entered at 12^h were taken at 12^h ^{7³⁰} _{am} the wet bulb not having immediately cooled down ^{at 12^h} _{after} ^{it} _{had} been wetted a few minutes previously. (Black bulb out today - max 123.6)

The ^{dry & wet} readings at 21^h were carefully checked at the time of observation.

An aurora was seen at 1^h 3^h and 23^h.

A solar halo was seen at 12^h and 13^h.

The depth of the snow wreath between the "Wreath Post" and edge of cliff was today found to be 148 inches at its highest point.

In the evening a snow bunting was seen about the doot. [It has been seen several times since last noted above on the 4th inst.]

March 28th

The top was clear only at 7^h and 17^h and at both hours there was str. fog all round below. At 7^h a corona and glory were seen.

Snow thawing quickly about the observatory today.

The snow bunting was seen about 17^h.

March 29th - The snow bunting was seen at 16-45^h.

1 Visitor during March.

The telegraph worked unsatisfactorily during the month owing to there being an faulty instrument at the S.W. end.

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April 1st

The snow hunting was seen between 17th and 18th.
 [On Saturday March 30th and Sunday April 1st from here, ament the unsatisfactory
 state of wire during March, and advising that wire
 should be put in working and reliable order. Today (Monday)
 this has been done: and it is now all right.]

April 3rd

The top cleared at 23^h last night and remained clear
 till 6^h today. the sky being all the time overcast.

The thermometer box was shifted at 2^h 15^m - dry ^{bulb}
 192671, wet bulb 192677 and min 138545 were put out.

White fog crystals forming about 12^h but at 14^h
 those forming were brown.

Thick fog all afternoon.

April 9th

Since the 4th the wind has blown a moderate
 breeze from E or ESE. and there have been only few
 breaks in the fog, and no sunshine till today.

Top clear several times in forenoon, and most of the
 afternoon: sky except at 13^h overcast.

The thermometer box was shifted after 12^h: dry bulb
 192660, wet bulb 192672 and min. 138543 were put
 out.

Weather turning going on to W^d today.

April 10th

Top clear in early morning and at times in afternoon.
 From 13^h to 16^h the thermometers (both in good order) indicated
 the air to be dry; but during this time there was a little
 snow falling continuously and there was thin fog in the top
 (owing to the falling snow, the general glare of light, and the fog
 being all round below, it was difficult to say whether or not
 there was fog on the hill top at these hours).

At midnight there was a depth of 3 or 4 inches of
 loose dry snow on surface. which consisted of
 small starry crystals.

About midday (12^h) the crystals were falling

1889 singly and in flakes. As soon as the flakes 52
touched anything they broke up, and left the individual
crystals detached and separate. The crystals falling
then were white (having the ordinary appearance of snow), but
at and after 18^h they were glassy and transparent-
-glistening and reflecting light.

Calm or almost so all afternoon.

April 11th

Except from 2^h to 4^h the summit was clear all fore-
noon. Variable amounts of Cirri types on sky; radiating
from NNE and SSW.

Fog all afternoon.. Max. Black bulb 129.7.

The snow-bunting has been seen daily about the
observatory, for hours at a time, since 1st of month.

Today it was photographed.

April 12

Fog crystals brown in morning and sooty in taste.
Clearing overhead at times today showing Cir. and
Cir-c above lying E and W.; and heavy Cum-s
masses all around.

April 13th

Fog clear in early morning, and at times
throughout the day; but air dry only from 2^h till 4^h.
At 1^h Radiating points of Cir. were WxN and ExS.
and at 2^h NWxW and ESE. A Lunar corona seen
at 23^h.

April 14th

Summit clear for greater part of day. Some
Cir. types on sky in forenoon and heavy cum in
afternoon. At 7^h and 8^h an irregular broken corona
was seen of cir. clouds: order of colors-Sun, Glare, Red,
Bluish, Red. at 7^h, and at 8^h: Sun, ~~Red~~, Glare, Blue, Green
Red.

At 12^h it was noted that there was no glare or

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brown colour in sky about the sun; the sky 53
being uniformly blue almost up to the sun
all round.

The Black bull was out today; max, $130^{\circ}3$.

The snow-lieas was low on South Eastern hills today
and above it they were very white, white to SW³
and W^d there was little or no snow on the
hills.

April 15th

Top clear for greater part of day: Fog
all round below till noon, when it rose above
level of summit and formed cum. clouds.
Heather burning in various directions today, which
caused a good deal of haze all round.
Black bull, max today. $135^{\circ}8$.

Top ladder was put on ladder stand N^o 2
after 13^h. today.

April 16th

Mr. R. C. Mossman arrived at the
observatory today.

April 17th

A Halo was seen at 9^h; except at this
hour there was mist on the top till 11^h but
clear for the rest of the day; and after 14^h cloudless
as well; but thick mist on surrounding hills all
day.

Air dry all afternoon.

At 13^h. Radiating points of Cir. SSW and NNE
Max. Black bull today $136^{\circ}5$.

Mr. A. Drysdale left the observatory today.

1889 April 18th

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Top clear till 10^h. Clouds till 6^h. but fog on lower hills all morning which rose and enveloped summit also from 11^h onwards. From 16^h yesterday till 8^h today the wet bulb had to be moistened about 10 minutes before each observation.

White icy fog-crystals forming all afternoon.

April 22nd

Summit clear at 6^h, at times about midday and from 17^h till 23^h: Sky cloudy or overcast but no fog on hills. At 21^h and 22^h the Radiating points of Airs were NW. & SE. The air was dry at 17^h, 22^h, and 23^h. Max. Black-bulk 99° 0.

The thermometer box was shifted after 13^h. Dry bulb 192671, wet bulb 192677 and minimum 138545 were put out.

Mr. Onond returned to observatory today.
(To date this month, the snow-bunting has been seen daily.)

April 23rd

Today the record went off the Sunshine Recorder paper when the sun came out in the afternoon. The Recorder was therefore put 1^h 5^m slow to bring the Mark back again - A few minutes of Sunshine may not have been recorded.

April 24th Barometer pumping heavily - once a tenth - in the strong Northerly squalls -

The Rain gauge was useless today owing to the drift: most of the loose snow lying on the top was blown away. Today Mr Rankin left the Observatory.

April 25 Fog over the lower hills in forenoon: about noon it rose and covered Ben Nevis also with fog and snow. Thermometer Box shifted at $12^h 20^m$ Dry 192660, Wet 192672 and Min 138533 put out. Height above snow not altered. Solar Corona seen about 13^h . The outside part of the 22^h observation was about 2 minutes late owing to lamp going out.

April 27 Thermometer Box shifted at $13^h 20^m$ Dry 192671: Wet 192677 and Min 138545 put out. Height above snow not altered.

Air clear all round in afternoon: no fog in valleys nor on hills.

Today Mrs Ashton and Gibson Superintending Telegraph Engineers accompanied by Mr Mackenzie Simeon & Wm visited the Observatory and inspected the telegraph cable.

April 29 This morning the Barograph was dismounted and one of the levers sent to Adie & Widdelburn Edinburgh to be shortened in order to ~~more~~ improve the scale of the instrument.

Thermometer Box shifted at $13^h 20^m$ Dry 192660, Wet 192672 and Min 138533 put out. Height above snow not altered.

Short showers of hardish snow during the day.

May 2

Thermometer box shifted at 10^h - 20^m by 192671
~~and~~ Wet 1992677 and Min 1385 45 put out - Height
 above snow not altered.

May 5th Top clear of mist after 7^h but occasional
 fog blowing over till 14^h after which the air was
 dry and the sky cleared - Rather hazy ~~and~~ and
 fog forming on the sides of the ^{forest} hills, especially to
 SE, in the evening -

May 6th

Fog over the hills and on the shore of Rannoch
 all morning till about 11^h when it cleared off - For
 some time about sunrise it lay low in the valleys
 to E and N - Hazy all day - Towards evening
 the sky became overcast & shortly after 19^h fog
 began to blow across the hill top -

A little before 2^h the last part of the roof of
 the snow porch fell down - After 16^h observation the
 top joint was taken off the ladder stand - it had
 not been used. after 10^h the thermometer box
 was shifted one stage down on ladder stand.

May 7th when the top was clear of mist fog was
 generally lying over the hills to SE and the air elsewhere
 very hazy. Heavy rain like thunder rain came on at
 about 18^h - 45^m Black Bull put one stage down after 20^h

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May 8 at 2^h there were several layers of fog at various heights lying among the hills to Eⁿ. By 3^h mist was on Ben Nevis ~~which~~ continued unbroken till about 15^h 40^m when it cleared a little, but sky remained cloudy. At 19^h dense Cum-fog was rising among & above the hills to Eⁿ but at 20^h there was no fog anywhere.

May 10^c at 3^h 15^m thermometer box shifted one stage down on stand = same instruments left out. After 20^h Black Bull shifted from bracket on Post A. to its own post to SE of thermometer stand.

May 11^c

Fog hanging about the hills, especially to S and E and occasionally covering Ben Nevis also all day. Today the lever of Barograph (see April 29) was returned shortened & was remounted. The snow hunting has not been seen about the Observatory for the last few days.

May 12^c

Fog on hills to E & S all morning and occasionally on Ben Nevis also. At 10^h 50^m a ~~short~~ shower of hail fell lasting about a minute. A portion of a Rainbow was seen at 15^h. Fog among the hills to N^W at night and lying in the Caledonian Canal Valley.

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May 13th

Fog lying among the valleys to N^W all morning - it thinned into haze during the day, but became fog again at night - Hazy all day - Sun was last seen at 20^h 35^m

After 19^h D_g 50850 and W_{et} 50852 were put out in large box (old clock box) and at 19^h 40^m Max ~~117290~~ 117293 and Min 116918 were also put out in same box - The latter pair were set at 21^h

The following duplicate readings were taken -

	Small Box		Large Box		Sling Ther.
	Dry	Wet	D _g	W _{et}	Dry -
20 ^h	41.9	36.9	41.1	36.7	
21 ^h	40.8	36.9	40.2	36.8	
22 ^h	39.5	35.0	38.9	34.8	
23 ^h	39.0	35.1	38.1	34.9	
Mdt	38.3	36.0	37.9	35.8	
1 ^h	37.0	34.6	36.7	34.3	
2 ^h	35.9	34.1	35.2	33.8	35.1
3 ^h	35.8	35.8	35.5	35.5	35.7.

Up to Mdt the Small Box readings were entered ^{on daily sheet} at and after 1^h the Large Box - After 3^h the Dry & Wet were taken in from the Small Box -

May 14th Stratus fog in valleys at 2^h at 3^h fog blowing over Ben M^{rs} also - Heavy dew at 1^h & 2^h - This afternoon the Tank was put up at Wrayges Well -

May 15²

a flash of lightning was seen at 1^h 3^m.
At the time hard rather icy snow was falling = it was
followed by a heavy fall of soft flakey snow during the
next two hours. The Needle of Telegraph Instrument
had been moved several times shortly before 1^h.
Wm Stewart who came up on the 13² left the observatory
today, having been engaged in repairing the road
near the top of the hill.

May 18²

Fog on hills around most of day, and haze
in the valleys. A E. gale was seen from cliff at 11^h.
The fog that blew across the hill top in the afternoon
was quite dry. The 7^h observation was taken at
7^h 6^m = no correction applied to readings.

May 20²

Today the first horse for the season came
up with stores.

May 22²

at 13^h 58^m a tremor was felt inside the
observatory like a slight Earthquake shock. It
was felt in both parts of the building, & in the
old part the roof was heard to creak. The
direction of movement was not ascertained.
At about 21^h 45^m the office fire was relit after
being out for about 36 hours = the temperature
had remained steady at about 56.

May 23rd Today John Duncan arrived at the Observatory -

May 24th Today Mr R.E. Mossman left the obsery & J. Miller began to act as Assistant Observer.

May 25th Almost continuous mist till 16^h after which it gradually cleared, breaking first overhead, until it left a cloudless sky & no fog on hills. At Midnight the N^o horizon was seen to be red for the first time this year.

May 26th Fog among and on the hills to N and E from before sunrise till about 8^h after which it broke up & rose as Cumulus. Air moderately clear during the day except to NE^o where it was hazy. Mull, Rum and Skye seen all day, and at 9^h South Dist. - Faint Pearly Cirrus seen to N^o at 23^h.

May 27th Fog among the hills to N^o before sunrise and on till about 8^h after which it rose & formed Cumulus - Haze all round all day.

May 28th Haze and detached fog on hills to S^o in early morning but thick mist all day after 5^h. Today Mr R.E. Mossman came up & spent the night at the

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May 30th

The snow which fell today was mostly soft and in large flakes - after 23^h the ground was white.

June 1st

Today a Cyclotyle from the Scot. Met. Soc. office was brought to the Observatory -

June 2nd

From 14^h till 16^h the Needle of Telegraph Instrument was frequently moved by Earth-currents - it was then put out of circuit & not reconnected till about 20^h 45^m after which only one movement was observed at about 20^h 55^m - At about 16^h 35^m several flashes of lightning & a few peals of thunder were observed - At about 19^h 30^m the same occurred. All day the mist was blowing off & on the hill top, but the sky alone seemed to be mostly cloudy - The Barometer was pumping heavily all day - the entry at 15^h is correct, the sudden fall is clearly shown on the Barograph tracing -

June 4th

The upper glow was seen at 3^h 5^m - Horizon rather hazy and cloudy all day, especially to N and W -

June 5

Sun first seen at 3^h 23^m - shining through haze - Haze all round all day turning very thick at night - a good deal of cum. at horizon -

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June 6th

Thick haze all round in morning, but it gradually cleared off towards evening - At 23^h Cum-fog had formed on hills to N^W and at Midnight it lay thick among them - Today the lookeo was heard for ~~the~~ the first time this year.

June 7th

Fog among hills to N^W in early morning: at 4^h 5^h & 6^h it covered Ben Nevis also. It continued over the hills round till about 9^h after which there was Cumulus at the horizon. Haze, thickening afterwards into fog, gathered to W and NW in the afternoon. Pearly Cirrus was seen at 1^h and again at 23^h.

June 8th

A slight shower of hail fell at 6^h Cumulus fog on hills all round in forenoon, and mist or fog on Ben Nevis in afternoon.

June 10th

Pearly Cirrus seen to NNE at 1^h Cum-fog on hills till 9^h after which it rose and formed Cumulus clouds - A Glory was seen on passing fog at 4^h Colours very indistinct. Air very clear in afternoon: at 13^h and 14^h South Vest was seen as well as the nearer islands.

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Today the Hotel was opened for the season -
 At 20^h fog was rising to W^d and passing over
 the Cairn Dearg - Haze gathered to S^d at night.
 At Midnight Pearly Cirrus was again seen -

June 11th

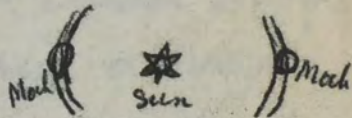
Earth shadow seen at 3^h NE horizon
 dark red before sunrise - At 3^h there was fog
 over the Mor of Ramoch - Considerable haze
 all day and mist on top after ~~3^h~~ 21^h.

Today Mr Mackenzie, Telegraph Lineman came up
 and overhauled the Telegraph Battery -

June 14th

Fog all round over the lower hills from 4^h
 till about Noon after which it covered Ben Nevis
 also almost continuously & a solar halo &
 Mock Suns were seen at 5^h

Only the portions of the halo
 near the Mock suns were seen -



Red inside halo - Radius of Red 22° - 6'.

Glow with two sets of columns seen at cliff at about
 8^h - 25^m

The Wet Bulb readings at 7^h and 8^h today are
 probably too low as the bulb had been frozen &
 took some time to thaw, while the Dry Bulb
 was rising rapidly - the water in the Wet Bulb
 cistern was however not frozen all morning -

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June 16th

Mist till 9^h after which it cleared off and left sky almost cloudless, but a continuous layer of fog over the hills round. This covered the hills all the rest of the day except from 20^h to 23^h when it cleared off there to SE. Its top was from 3500 ft. to 4000 ft height. Some glories were seen on this fog in the evening = two sets of colonies, but not very bright, no measurements were got.

June 17th

Thick cloud or fog layer on hills all round to about 3000 feet till 9^h after which it broke up & disappeared except a few patches to W. Haze in the valleys all afternoon getting thicker at night. The horizon was also rather hazy = no upper was seen at sunrise or sunset. A little faint Bealy cirrus was seen at midnight. The sun was last seen at about 29^h 21^m.

June 18th

Sun first seen at about 3^h 18^m. Fog lay in the valleys at about 2000 feet height till about 11^h, thickest to W & N. and haze gathered all round during the day. This haze rose distinctly higher than Ben.

Nebis at night - Dew on all wood work at
Midnight - No Upper glow was seen before sunrise

June 19th Sun first seen at 3^h 19^m Horizon
hazy all day - Fog gathered in the valleys to N^W
& extended all round at about 2000 feet height before
sunrise - it broke up into Cumulus clouds after 10^h
Thin fog was ~~blowing~~ blowing across Ben Nebis at 20^h
but it was quite dry & did not deposit
moisture on anything - From 21^h onwards
thick fog lay over Loch Nebis and the adjacent
valleys ~~then~~ at about 2000 feet heights -
Sun was last seen at 21^h 26^m very
faint Upper glow at 10^h

June 20th

The Sun was first seen at 3^h 16^m - The Earth
shadow & Ben Nebis shadow were seen at 2 after sunrise -
The fog in the valleys to N^W broke into Cumulus at
about 8^h and after that there was no fog in the
valleys till about 23^h when it gathered again to
N^W beyond Loch Lochy - Horizon hazy all day -
The Sun was last seen at 21^h 26^m and the
afterglow & Earth shadow were seen at about 21^h 40^m

June 21st

The Sun was not seen till 3^h 22^m morning

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to a bank of cloud & haze at the NE horizon. Dew formed at 3^h on everything, up to that hour there had been none. Fog lay in the valleys to N^W beyond Loch Lochy at about 2000 feet till 9^h after which it disappeared. A faint upper glow was seen at 3^h. Horizon hazy all day. The upper glow was seen on cirrus at 21^h 40^m. Pearly cirrus was seen to 70° altitude at 23^h and a small patch to the N.W. at mid: after midt (0^h 20) this latter pearly cirrus was photographed.

June 22^d

Sun was just seen at 3^h 16^m shining through thick haze which prevented any sunshine from being recorded until after 8^h. The upper glow was seen at 3^h and the Earthshadow after sunrise. On the night between the 21^d & 22^d the lamp was only used at 23^h midt. and 1^h the thermometer being easily read at all other hours without it. Low fog lay over Loch Lochy and the adjacent valleys to N^W till 6^h. At 7^h there was cumulus over Loch Lochy & after that no fog or cloud in the valleys till 13^h when loose dry cum-fog gathered ~~at~~ to the S^W and E^W of Ben Nevis which continued till 18^h. From 22^h onwards dry fog was drifting across the hill top. The sun sank out of sight in a bank of

thick haze & cloud and the time of setting could not be observed.

June 23^d

Sun was first seen at 3^h 37^m. This late time was due to the fact that thick and continuous fog was lying over all the hills round to about 4000 feet. After 4^h this fog rose higher & began to pass across Ben Nevis also: it formed cumulus and seed clouds in the afternoon, but sank down again in the evening: being at about 4000 feet height at 18^h and sinking to not much over 3000 feet by Mdt.

Today the anemometer clock stopped frequently.

June 24th

The Sun was first seen at 3^h 21^m shining through the fog that covered the hills round to about 3000 feet. It continued at about this height till 9^h after which it rose & surrounded or covered Ben Nevis for the rest of the day. These fogs for the last few days (since 19th) have been quite dry & the air has never been saturated.

Today a new post for the crane at Coal Beller was brought up. The anemometer clock was brought down after

4^h and set up in the office as the standard clock was still out of order.

June 25th

Thick haze all round all day rising higher than Ben Nevis - At 5^h & 6^h the haze under the sun, i.e. from near N to SE was black & the rest white - Fog over the hills round in early morning and partly on Ben Nevis also = this rose & formed cumulus in the afternoon but cleared off entirely at night.

June 26th

Haze all round till Noon, and fog after that which gradually began to cover Ben Nevis also, but was always higher than the hill top.

June 27th

Fog gathered all round in afternoon, forming at 20^h a high bank on the surrounding hills extending from about 3000 to 5000 feet height - By 21^h this had gone except from the hills to NW and a few detached portions elsewhere and for the rest of the night there was haze and steam fog on the hills far to NW

June 28th

Fog on hills all round in great masses from

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2^h to 4^h; and after that fog on or hanging about the top of Ben Venis also - but as far as could be seen no fog in the valleys below -

The morning the Office Stone was relit having been out since the 17ⁿ

about 80 tourists climbed Ben Venis in June, exclusive of a party of 50 or 60 Fat William people who were up one morning.

July 1st

Wet Mist till 2 2^h after which it sank leaving a cloudless sky but still covering the hills round at a height of about 4000 feet.

July 2

Cloudless sky & fog on the hills round to between 3000 and 4000 feet till 10^h after which the fog rose, occasionally passing across Ben Venis and forming Scud & Cumulus clouds overhead - It sank down again after 21^h & formed a similar layer of fog on the hills - Faint Peculiar Cirrus seen all along N horizon at Melt -

July 3rd

Fog on hills to 4000 feet at 11^h but after that it broke up into detached portions: but there was fog in the valleys till 7^h after which it disappeared - Air rather hazy all day - At 5^h the haze at the horizon was dark

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under the sun i.e. from SE to NNW and white
round the rest of the horizon. Fog gathered low
down in the valleys to N^W beyond Loch Lochy
after 21^h. Ravens were seen flying about
over the hill top in afternoon -
The 10^h observation was taken 2 mins late
owing to telegrams. No correction applied to
readings -

Bright Pearly Cims seen to N^W at Midnight -

July 4th Fog lay among the hills to N^W as far as
the head of Loch Lochy till 8^h after which
it disappeared - but gathered again after 20^h
Air hazy all day - The Sun was just seen
at 3^h 30^m. Surveyors for railway to top were up today -

Today Mr C. E. Gray arrived at the Observatory
and Mr J. Miller went down -

July 5th Faint Pearly Cims seen at 1^h. Dew which
lay thickly at Mt. was drying up at 1^h and was
almost entirely gone at 2^h. Fog lay among the hills
to N and E most of the day, and in the afternoon
Ben Nevis was surrounded by loose dry cum-fog rising
on all sides - The Sun was seen at 3^h 25^m
rising above the hills & shining through the
fog; after it was about 2^o up it passed

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behind a bank of haye which was lying clear of and above the horizon to NE and was almost completely hid by it - The sun did not begin to record till 8^h

Dew again formed at 23^h and mlt.

July 6^o Fog lay among and over most of the hills round till Noon, after which it rose forming Cum-fog all round Ben Kenis and Cum. clouds overhead, and from 15^h onwards the hill top was covered with fog or mist - Haye above the fog all morning -

July 7^o From 20^h onwards the roof of Oseng and most of the ground was white with snow -

July 12^o after 2^h the fog sank leaving the sky clear but covering all the hills round & occasionally blowing across Ben Kenis also - The sky soon became overcast with low Cumulus & continued so most of the day, while the fog though not thick continued to hang about the hill top. After 19^h glories were seen on fog to SE^o - Rather misty & badly defined - Two & occasionally 3 sets of columns of columns = clear space between 1^o & 2^o - Radius of First Red 1^o 30': of Second Red 6^o 2. Other columns were very faint -

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July 15th

Top clear after 10^h but thick rolling fog over all the hills round & passing over Ben Nevis also at times. Today the Robinson anemometer was returned for Franks repaired -

July 16th

Detached patches of fog among hills till 6^h and fog or mist blowing across Ben Nevis most of the day afterwards, but occasional very clear views to S and W.

Today the repaired Robinson anemometer was set up -

at 10^h a Rainbow was seen to NW^h the highest part being rather lower than the top of the Ben, Near the top of it there was a dark gap in the bow -

July 17th

Earth currents in telegraph cable from 10^h to 12^h deflection usually to right side - that is a current up the wire - At the time Mist was changing to Fog -

July 18th

Shortly before 1^h the fog sunk leaving a cloudless sky, but still covering all the hills round except a few of the highest peaks.

This continued till 6^h when the fog again rose and covered Ben Ken's also for the rest of the day. The Sun was first seen at 3^h 55^m rising above the fog - the first glimpse was green -

July 21st

Top clear but haze and fog all round till 13^h and after that mist on the top of Ben Ken's. No sunrise, the haze hiding the sun's disc. A glory was seen between 10^h and 11^h and a Halo at 12^h. Robinson anemometer tied up at 23^h.

July 22nd

Robinson Anemometer set off after 2^h. ~~This~~ Today the Observatory Standard clock was sent down to Ritchie Edin. for cleaning & repairs -

July 23rd

Fog hanging about the hill all day but clear views through breaks - Short heavy showers of rain & hail fell in afternoon. A Rainbow was seen at 19^h and 20^h.

July 26th

Mist till 5^h after which top clear but sky cloudy & no fog below till 18^h when the clouds sank & fog covered the

top till 21^h after which the sky was cloudless
but fog covering all the hills round and occasion-
ally blowing across Ben Kenis also -

July 27^d Fog on hills to about 4000 feet till 5^h
The sun was first seen above this fog at 4^h 10^m
The sky remained cloudless till 9^h when cirrus
began to appear - Fog again gathered on the hills
at from 2000 to 3000 feet beginning to W^d at 19^h
but spreading all round - A bright Mock Sun
was seen at about 19^h 30^m colored Red
next Sun & Blue inside -

July 28^d Fog on lower hills to about 3500 feet till
4^h after which it rose & covered Ben Kenis
also, hardly breaking again all day - As soon as
the fog rose the wind which had been blowing 20
to 25 miles per hour fell considerably -
Up to 4^h the sky was overcast but the air very
dry - Sunrise colors very bright - Sun first
seen at 4^h 11^m Earth shadows seen before sunrise -
The observations at 13^h and at midnight were
each 3^{mins} late - No corrections applied to readings -
The following observations were taken by sling
Thermometer -

at 15^h 5^m on roof 44° 7. Dry Bulb at 15^h 44° 9
 at 15^h 58^m on Plateau at foot of Maclean's steep 43° 8
 at 16^h 7^m on Plateau of Storms in line of posts - 43° 8
 Dry Bulb at 16^h 42° 9. The fog was much thicker
 down on the plateau than on the top of the hill -

July 29th

Mist till 3^h after which it sank covering
 hills to 4000 feet or more all round till 8^h
 when it rose again over Ben Kenis also -
 Sky overcast with Cum-st. all this time, but
 air dry the humidity at 6^h being 53 and at
 7^h 52. Sunrise colors bright - Sun seen
 at 4^h 16^m - Mist and fog continued on or about
 the hill top till 20^h after which it sank lying
 over the hills in detached patches at 3000 or 4000
 feet height, and the sky cleared -

July 30th

Fog over all hills round at 4000 feet.
 till 4^h after which it rose & blew across Ben Kenis
 also, and continued to hang about the hill till 13^h
 In the afternoon haze gathered to the SW and after
 21^h fog was again blowing across the hill top -
 The sun was first seen at 4^h 12^m - Before
 sunrise the Earth shadow was observed -

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At 4^h 25^m the shadow of the Observatory was seen on a fog bank to SW. Very red glories were formed on this fog = three sets of colonies, but none distinct except the Reds.

Radius of Red¹ Too small to measure -

" Red² 1° 20'

" Red³ 2-42

Today Mr James Macdonald arrived at the Observatory to act as assistant observer.

The Dry Bulb readings at 5^h and 6^h are probably correct -

July 31^d

Thick haze all round all day and occasionally very light fog blowing across the hill top.

Today a new iron wire, laid down by the Post office officials to serve as an earth contact for the telegraph cable was connected with the telegraph post -

Rather over 600 tourists climbed Ben Nevis during July -

August 1st

Today Mr. J. Aitken visited the observatory and tested the number of dust particles in the air.

August 2nd

Mist till 22^h when it cleared off leaving sky overcast and low lying fog among the hills round -

August 3rd

Cloudy sky and fog lying among the hills round till 4^h after which fog or mist covered Ben Keris also, which continued with only a few short breaks all day -

August 5th

Today Mr. Rankin returned ~~to~~ the Observatory and Mr. Ormond went away.

Very heavy rain in evening, 0.346 inch was recorded for the hour ending 22^h.

August 6th

Mist or fog^{almost} all day: clearing only for a few hours in afternoon

August 7th

Top clear occasionally during the day but fog around below and sky almost or quite overcast except at 7^h when it was cloudless. Some sunshine recorded in forenoon

1889 August 8th

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Sky cloudless, but stratus near horizon till 5h. (except for a little stratus overhead at 4^h), and covered with variable amounts of cumulus during the rest of the day. Cumulus fog lay on the lower hills in forenoon, and shower clouds in afternoon, on which a rainbow was seen at 14^h. Cirrus was observed at 20^h; its radiating points were ~~W~~ NW. ESE. 18% of broken sunshine was recorded during the day.

Hard frost on roof in early morning.
Ablong was seen about 18^h - 30m.

August 10th

Summit clear at times during the day; but sky overcast or nearly so, chiefly with nimbus.

A Lunar Corona was seen at 1^h.

August 14th

Summit clear at times in afternoon. Between the hours of 14 and 20, inclusive, only 1 mile of wind was recorded by the anemometer.

August 17th

The Observatory Standard Clock was brought up today and mounted temporarily on table near telegraph instrument.

August 18th

Showers of hail and sleet fell this morning as well as heavy showers of rain.

August 19th

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Summit clear at times in evening but sky overcast with nimbus, and fog on hills around and brushing top of Ben Nevis at times.

August 20th

Raining heavily almost all day. Today Mr John Duncan left the Observatory and Mr James Miller returned.

August 22nd

Top clear in afternoon but sky overcast. After 18^h the anemometer was tied, as the temperature had fallen to 31° 8.

August 23rd

The anemometer was started after 10^h today but tied up again after 23^h.

August 24th

Showers of snow, hail and sleet fell throughout the day.

August 25th

The anemometer was started after 6^h today and tied up again at 19^h 35^m. The top was clear occasionally between 17^h and 22^h.

August 26th

The anemometer was untied after 10^h and it worked for the rest of the day.

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August 29 Today Mr Omond returned to the Observatory and Mr Rankin went down - Mr Sydney Mitchell also visited the observatory -

August 30th

Fog with a few short breaks till 18^h after which it cleared leaving sky cloudless - Some stratus-fog lay over the hills round in detached portions till 21^h - Air became dry (Humidity 80) as soon as the fog ceased to blow across the hill top -

August 31st

Fog began to gather on the hills to N^W after 3^h and spread over all the hills round those to the SE being the last to be covered, and after 12^h rose and covered Ben Nevis also - Mist and drizzle in evening. This afternoon Black Bull 484108 - common there - not Max - was put out on a new post 48 inches above stones to the E^W of the post for BB 186.

This morning Mr Macdonald left the Observatory and in the afternoon Mr Turnbull arrived. Mr Gray took the observations during the morning watch.

About 970 Tourists climbed Ben Nevis during August -

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September 1st

Fog on the hills round and often on Ben Nevis also till 6^h after which there was only detached portions in the valleys & on the hills: after 20^h fog was blowing across Ben Nevis ~~also~~ ^{again}. Air slightly hazy during the day. In the forenoon there were Cirrus clouds in streaks from NW to SE & the motion was from the NW. But at 17^h the sky was covered again with Cirrus having no definite arrangement & moving from the SE: & at 20^h from the SW.

September 3rd

Fog on hills round & blowing across Ben Nevis till 9^h after which continuous fog or mist, very thick at times - The Gyne test was shifted at 9^h as usual but the one brought in was not read till 14^h - 40^m.

September 5th

Clear sky but fog blowing across the hill top till 3^h and after 16^h Air very hazy between these hills, and fog among the hills round in forenoon.

Today a series of observations on earth currents and the convexity of the mercurial column of the barometer was begun -

September 6th

Clear sky all day but haze and fog over all the hills round, and in forenoon dry fog blowing across Ben Nevis also -

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September 7th

Sky almost cloudless till 16^h but haze all round - after 16^h fog or mist on Ben Nevis -

Fog lay among the hills round till 7^h but after that cleared off & only gathered about the hill tops after 15^h

The 16^h observation was taken at 16^h 4^m no correction applied to readings -

September 8th

Today Mrs Turnbull, Gray and Miller went down into the head of the North Glen at the East end of Ben Nevis and returned by climbing up the corrie leading to the ridge connecting the Plateau of Storms with the Cairn Dearg. They had considerable difficulty in accomplishing the last part of the ascent.

September 11th

At 17^h and 18^h top was clear but sky cloudy, and streaks of Stratus-fog lying on and among the hills round -

At 23^h 30^m Dry 19271 and Wet 19277 were put out in small box on spare joint of ladder stand 50 inches above roof on N. side of ladder to top of tower: Box facing N. Bulls about 40 inches from side of tower.

September 12th

after 4^h the fog sank down & lay over among the hills round and continued to lie

there till 22^h after which the top of Ben Nevis was also covered: The fog was not a continuous sheet but lay in patches - Upper clouds moving from the Westward all day -

At Midnight the readings of Earth currents and convexity of Mercury in Barometer were stopped -

September 14th

Thin mist on hill top till 14^h after which it sank showing sky partly covered with cirrus, but the fog lay over the hills round all day - Air very dry at night the humidity being 45 at 18^h and at Midnight -

September 15th

Fog on hills tops round all day and occasionally over Ben Nevis also. Air very dry when clear of this fog Humidity of 40 or 50 being got at several hours in the forenoon - A Solar Corona was seen at 5^h And a Solar Glory & part of a Fog bow at 6^h A glory was also seen at 8^h No measurements were got -

September 16th

Fog on hills round and blowing across Ben Nevis but sky clear above till 9^h after that fog or mist - A Solar corona was seen at 5^h

1889 September 18th

The heavy rain which fell this afternoon and evening was composed of large drops, not small drizzle - In the two hours from 20^h to 22^h 0.522 inch was registered by the gauge.

September 19th The Robinson anemometer was tied after 5 hrs. At 3^h today the temperature was 35° 0. but by 6^h it had fallen to 31° 7 and continued falling during the rest of the day. Showers of sleet fell in early morning, and hail, sleet and snow fell during the rest of the day. The summit was coated with snow several inches deep. Taking readings of the hardy Black Bull was discontinued after 19 hrs.

Mr. Ormond left the Observatory today and Mr. Rankin returned.

September 20th

Showers of hail and snow fell throughout the day.

No reading of either Black Bull was obtained today as they were heavily coated with ice, and the maximum was so tightly frozen to its stand that it could not be set.

September 21st

Heavy Showers of Snow fell during the day. Top clearing at times today, showing the tops of the lower hills around covered with snow. At 9 h. snow crystals in form of straight hairs $\frac{1}{8}$ " long were observed to fall.

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September 22nd

The snow on summit drifted a good deal all forenoon.

At 22h. the summit was clear, and an aurora was observed.

September 23rd

Summit clear most of the day. Detached patches of fog were seen off hill tops around in forenoon. Cirrus and Cirro-cumulus on sky. - radiating points at 3h. were NW & SE.

After 14^h the thermometers were changed - by 192660 and Wet-192672 were put out and the other set taken in.

At 22h and 23h a faint aurora was observed.

September 24th

Aurora seen at 1^h and 2^h and at the former hour three flashes of sheet lightning were observed to Sth. The sky was cloudless before the lightning was seen, but each flash revealed three thin streaks of stratus a little above the southern horizon - The streaks were dark against the lightning in background.

The summit remained clear except for a little fog at 5h. till 16^h when fog came on again and snow fell heavily till 20h. and ~~drifted~~ drifted very much all night.

"Visibility" to westward today.

September 25th

Snow line at about 2500 ft. above sea level today.

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The summit was clear and the sky
cloudless till 5h - fog or cloudy sky thereafter
September 26th

The temperature rose rapidly this forenoon.
The anemometer was untied at 8^h, and readings
of the hourly Black Bulls were resumed at 11h.
Rain or heavy drizzle falling continuously
after 4h.

September 27.

Drizzling rain fell most of the day.
After the midnight readings, the anemometer was
tied up.

September 28th

Showers of snow and sleet fell during the
forenoon.

The Hourly Black Bull was taken in after 16^h.

September 30th

Top clear and sky, cloudless at 5 hours
and again at 22^h and 23^h.

407 Tourists ascended Ben Nevis during
September.

October 1st

Cloudless till 10^h. fog at 11^h and 13^h. Cumulus (10) in afternoon. and almost cloudless again after 18^h. Fog on hills around all forenoon. Visibility to W^d and N^d in afternoon. At 2^h a faint aurora and the zodiacal light were seen. The latter was best seen at 2^h 45^m its southern boundary being well defined. The zodiacal Light, the "Milky Way" and the Horizon formed the three sides of a triangle the enclosed sky being markedly darker than its surroundings. The Z.L. could be traced to near the "Twins".

A fog bow and Glory were seen at 10^h — Radius of Red of Glory 2°, 0'. 36" per stephanome.

The Earth Shadow was seen at Sunrise. Today Mr. Gray left the Observatory

October 2nd

Sky clear almost all day. but a little fog in valleys in forenoon and haze in afternoon.

October 3rd

Air dry (Humidity 75 to 90) till 20^h. except at 17^h. After 20^h fog covered or was passing Ben Nevis. Sky cloudy all day chiefly with Cumulo-cirrus. which was moving from

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Southwest in forenoon, and from SE at-
14h. A little snow fell after 22^h.

A Solar Halo was seen at-15hrs. None all
round below today

The "lineman" was up today and cleaned
and replenished telegraph battery.

October 4th

Sleet, drizzle, or rain falling most of
the day.

October 6th

Heavy hail, sleet and snow fell during the
hour-9^h-10^h this forenoon, 0.292 inch being registered
in rain gauge for that hour.

The Wind was backing all afternoon at- at-
midnight it began to blow a gale from
the South East.

The small anemometer was accidentally
broken at midnight.

October 7th

The gale which commenced at midnight
last night continued till 6^h this morning. It
increased in strength till 3^h when it was
force 10-11, and thereafter gradually moderated.
Extra readings were taken of the Barometer.
between 2^h and 5^h - the lowest 24.345 inches being
observed at- 3^h 30m. Rain sleet or snow-
was falling during the gale, but after 9^h
when the wind backed to the north. snow and
hail fell pretty constantly for the rest-
of the day

October 8th

Snow or hail falling most of the day
A Lunar Corona was seen at 19^h

October 9th

A moderate gale from Southeast was experienced in forenoon.

At 7^h the summit cleared for a little and fog was seen on all the lower hills.

The road to the summit was so blocked with drifted snow today that it was thought advisable to stop the Observatory horse from coming up.

October 10th

The summit was clear till after 3^h today. Cirro-stratus and cirro cumulus covered the sky, and at 1^h 2^h and 3^h a lunar halo was observed

October 11th

The top was clear today from 14^h till midnight except for thin fog at 16^h. After 16^h the sky was cloudless.

Cumulus was observed on hills around and stratus-fog in the valleys at night.

A Lunar Corona was seen at Midnight

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October 12th

Summit clear till 13^h. fog till 15^h clear again till 19^h and fog thereafter till midnight. Except at 2^h and 3^h when the sky was overcast with Strato-cumulus there was little or no clouds on the sky all forenoon. Between 7^h 32^m and 13^h 16^m the sunshine record was unbroken. Lunar coronae were seen at 2^h 6^h and 23^h. In the early morning fog lay on the Caledonian Canal and on Loch Eil, and during the forenoon there was haze in the valley and detached cumulus on the hill tops around.

Today Mr. Omond returned to the Observatory.

October 13th

Sky cloudy all day & occasional fog brushing the top of Ben Nevis, but no fog below and air very clear to westward in afternoon the outer Hebrides and Colonsay being clearly visible. A lunar corona was seen at midnight.

Today Mr R. Turnbull left the Observatory.

October 16th

Thin fog or mist all day partly clearing at times in afternoon. At 23^h 2nd Mt. top clear and sky partly covered with high cumulus and fog over the hills to E^h. Dark hazy look in the valleys to W. & N.

October 17th

Fog and haze over hills to E^h till 4^h. Some grey fog and haze in valleys from 5^h to 10^h.

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after which it began to rise = No fog in valleys in afternoon but air hazy all round & sky partly covered with cumulus and cirro-cumulus -

Robinson Anemometer was started at 16^h but was not read till 20^h

October 18th

Robinson anemometer was tied up at 1^h Hard icy fog crystals forming in early morning - Top clear at times, but sky cloudy & frequently fog on the other hills round -

October 22nd

Sky cloudy or fog all day, but air clear to Wnd in afternoon: at 14^h Skye, Rum, Colonsay & Jura all clearly visible - No fog in the valleys all day -

October 23rd

Sky cloudy in forenoon and fog passing over the hill top, but when free of fog air clear to Wnd Foggy all afternoon - Slight drizzle of rain in evening ending in a heavy shower about Midt. Today William Wilson arrived at the Obrewatery -

October 24th

Sky cloudy with cum. and cirrus till 18^h but after that clear - Fog hanging about the hill top most of the day & air always saturated - Today Mr A. Rankin went down -

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October 25th

Sky clear till 9^h. but air mostly saturated -
Fog on hills to E and S from 6^h to 9^h and after that clearing
over Ben Nevis also - At 7^h the ground was covered
with Hoar frost at sea level - At 16^h air clear to
W & N Skye & Rum being seen -
The Box on roof (see Sept 11. page 82) was taken in at
16^h 30^m

October 27th

Top clear of fog most of the day and few
clouds overhead, but fog on hills to E & S all
morning & cum-fog rising out of Glen Nevis -
Clear views to W^d Skye, Rum, Mull & occasionally
Colonsay seen -

October 28th

Fog on hills to E & S. in early morning
& low down in valleys to N^d about sunrise - Fog
also lay over Lochail till 10^h - At 9^h temp.
rose suddenly 5.3 and the air became very dry
the Humidity at 9^h being 24. It got gradually
& pretty steadily damper during the rest of the
day & was saturated by 1^h on the 29th
Haze & fog gathered to W^d in afternoon
hiding Rum & Skye -
At 9^h 40^m sling No. 1. and Min 138533 were

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put out on Cotton Wool. Readings were taken till Midnight, after which snow began to fall.

October 30^d

Hail fell at 12^h and sleet & snow afternoon till 20^h but after that little; ~~none~~ what was falling at 21^h was small and hard. At 13^h it was found that the ~~last~~ door of the thermometer box ~~was~~ had been blown off since last time.

29 Torquists climbed Ben Nevis in October.

The Obsequy Horse was up on the 31st possibly for the last time this year.

November 1st

South East gale up to 11^h Calm at 12^h and heavy squalls from the N and NE for the rest of the day - Half hourly readings of Barometer were taken, the lowest observed was 24.475 in a sudden dip at 12^h. The sun shone sufficiently to record from about 11^h 28^m to 12^h 9^m. Very heavy drift all day making rain gauge measurements unreliable. The low level door had to be dug several times and the tower door was used for a few hours in the forenoon.

At 17^h 10^m Ds 192671, Wds 192677 and

Mm 1385 45 were put out in small box on ladder stand No 2. The readings of these instruments were taken from 18^h onwards, no duplicate readings were taken.

November 2^d

Heavy drift all morning, but about Noon the fog turned to mist which damped the snow & prevented any further drifting.

November 4^d

Fog cleared about 9^h leaving fog in the valleys to N^d which about Noon rose & formed cum-fog all round, and after 18^h became fog on Ben Nevis. A lunar corona was seen at 17^h.

November 7^d

At 4^h the rain gauge was not read, but was put out again unemptied at 5^h. The reading at 6^h was 0.137 and therefore includes both the 4^h and 6^h values. It was assumed that 0.100 was the 4^h value and 0.037 the 6^h. The 11^h observation was taken 2 minutes late.

At about 15^h 40^m the mist broke suddenly & at 16^h the sky was clear except for streaks of cirrus near the horizon, but thick cum-fog lay over the hills round. At 17^h it was much the same, but before 18^h fog had again covered Ben Nevis also, which continued all night.

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At 16^h 10^m Dry 50850 and Wet 50852 were put out. Min 138545 was left the box not being shifted.

The snow is much melted by the thaw of the last few days the road being almost clear up to the first gorge, and stones showing up all over the hill top.

November 9th

Very wet but not thick mist all day with drizzling rain and some heavier showers. At 19^h and again at 22^h the sky was seen, in each case rather more than half covered with Cirro-cum. in long streaks lying E and W.

November 10th

Mist till 14^h after which it sank but covered all the lower hills at from 3500 to 4000 feet for the rest of the day. Sky showed variable amounts of small hard Cirro-cum. moving from the W. After 21^h Robinson Anemometer started and Black Bulb for hourly readings put out. At 21^h 35^m sling Ther. No 1. and Min 138533 were put out on cotton wool on a patch of snow to the W of Black Bulb posts. Air very dry at night humidity 50 to 60 per cent.

The snow is now all gone except a few patches in hollows & drifts round the house.

November 11^d

Air very dry till 5^h after which it got gradually damper - Fog lay among the hills in a level sheet at from 2000 to 4000 feet height all day, but rose at night & was blowing across Ben Nevis at 22^h and 23^h. A lunar corona was seen at 22^h. The sun rose from behind the fog at about 7^h - 40^m. The first flash of the disc was bright green - The Earth shadow was observed after sunset. At 0^h - 10^m the cotton wool with the thermometers on it was shifted off the snow to a patch of stone to the N^w of large thermometer box - The greatest difference between the shade temp. and the cotton wool temp. was at 3^h viz 12° 6.

November 12^d

The fog that was blowing across the hill top gradually thickened & from 3^h onwards Ben Nevis was covered with thick wet mist -

November 13^d

After 13^h the sky was clear except for some cirrus & cirro-cum. but fog lay over the hills around occasionally rising & blowing over Ben Nevis also - A Halo was seen from the plateau of Storr at about 14^h - 30^m -

air very dry after 20^h the humidity being about 50 per cent till Midnight.

The Robinson Anemometer was tied up at 9^h, was set off again after 10^h but was tied again at 18^h

November 14th

Fog lay over the hills round till 9^h the sky being mostly clear: but after the fog rose & covered Ben Nevis also.

Dry 192650 and wet 192672 were put out at 3^h 5^m Min 138545 was left out.

November 15th

Robinson Anemometer started at 8^h

November 16th

Robinson Anemometer tied up after 1^h
A lunar corona was observed at 6^h and a glory and Fog-bow at 11^h 15^m. The glory had three sets of colours. Radius to middle of fog bow (singly) 45° 10'. No measurements of the glory were got.

A falling star was seen at about 19^h 5^m

A faint aurora was observed at midnight.

Sky apparently clear all day but fog blowing over the hill top & only becoming thin enough to let the stars be seen through it towards evening.
at 14^h 45^m the two Black Bulls were taken in being encrusted with ice.

November 17th

Aurora seen faintly at 1^h and 2^h
 sky apparently clear all day but fog over the hills till
 7^h especially to E^W just before sunrise is about 8^h
 it rose and covered Ben Ven's also & continued
 mine a less all day - Bright auroral arch seen
 at 20^h during a break in the fog - It extended
 from about NNE to NW, W: single arch no streamers
 The Mass Black Bull was put out today but its reading
 was useless owing to being encrusted with fog crystals.

November 18th

Robinson anemometer started after
 3^h Top clear at 8^h but fog all round -

November 20th

Top clear and sky cloudless except for
 passing scud at 7^h but fog all round - Robinson
 Anemometer tied up at 19^h

November 21st

Stars seen gleaming through the
 fog at 20^h Robinson Anemometer started
 after 23^h

November 22nd

Robinson anemometer tied up after 13^h
 Showers of hard icy snow fell at intervals all
 afternoon and night - Top clear at 15^h no fog
 in valleys -

1889

November 23^d

Thermometer Box shifted at 9^h 15^m same thermometers left out viz. Dry 192660, Wet 192672 and Min 138545 - Height not altered - Top clear and sky cloudless at 19^h but fog all round and passing - The stars were seen gleaming through the fog at 22^h -

November 25^d

Drift most of the day making rain gauge measurements very doubtful - Thermometer Box shifted at 16^h 20^m Dry 192671 = Wet 192677 and Min 138533 put out. Heights above snow not altered -

November 26^d

Sky apparently almost clear all afternoon but fog blowing over the hill top - An Aurora was seen at 19^h and at Midnight - Heavy drift all day, though only 2 inches was measured at post A where the wind swept the snow off, a drift 2 to 3 feet formed in the path to the thermometer box and one about 5 feet deep in front of the kitchen window -

November 27^d

Aurora was seen again at 1^h and also at 20^h - No rain gauge was out today but apparently no snow fell though there was a good deal of drift -

1889

November 28th

Thermometer Box shifted at 9^h 10^m
 Dry 192660 : Wet 192672 put out = Min 138533

Left out. Height above snow not altered -

In the afternoon the fog became damper and at 19^h was distinctly mist which continued till 21^h the temperature at the same time being about 24°. The fog crystals at the same time became harder and more icy - Very small fine snow was falling at midnight -

November 29th

a lunar ~~corona~~ ^{corona} was seen at 18^h one ring complete, red outside, and a blue margin beyond -

November 30th

Clear sky above the fog seen occasionally in early morning but drizzling rain & thick mist towards evening -

a Solar Corona was seen at 12^h - 15^m two complete sets of columns & part of a third ring. Red outside & Blue inside in each set -

Four tourists climbed Ben Nevis in November -

An observatory House was up on the 8th,

14th, 18th and 28th

From the 10th to the 24th of the month the top was almost entirely clear of snow -

1889

December 3^d

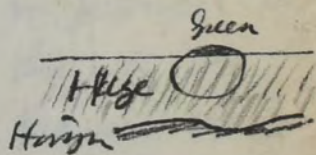
Thick fog till 15^h depositing feathery fog
crystals slightly brown in colour. From 16^h onwards
sky clear except for cirrus & cirro-cum - and haze
or fog over the hills round. A lunar halo or
portions of one was seen from 20^h onwards -

Radius to inner edge at 20^h 22° 0'

Thermometer Box shifted at 16^h 20^m Dry
192671 : Wet 192677 and Min 138545 put out.
Height above snow not altered - B.M. Max put out
at 20^h and set at 21^h

December 4^d

Haze and fog over the hills round till Noon
after which it rose higher & was blowing across Ben
Nevis all afternoon & night - but the sky when seen
was clear above. A new day in early morning -
at 3^h the wind velocity by hand anemometer (2 mins)
was 44 miles per hour - the free recorded was 6 -
The sun rose through the haze but came out clearly
when it got above it - the first flash above the haze
was green; and the recorded
began to register Bright Sunshine
as soon as the disc was above
the haze.



At Sunset the top was clear - the sun set into
cloud at 15^m 49^m, but no green flash was seen.

1889

The Earth shadow was observed at 16^h

at 17^h a lunar corona red with faint colours inside it and a blue margin outside was seen.

Radius of Red 3°-51'

December 5th

Top clear occasionally in forenoon, but fog over all the hills round -

December 6th

Lunar Corona seen on passing fog at 1^h
at 2^h sky three fourths covered with small & rather high cumulus: at 3^h overcast with low, massive & thick cumulus: the latter type persisted till mist came on at 6^h. Distinct rain falling at 6^h temp. being 24°8. Drizzling rain fell at intervals during the day though the temp. remained below 32°. but snow fell towards evening -

December 7th

Thermometer Box shifted at 3^h 25^m Dry 192660 = Wet 192672 and Min 138533 put out. Height above snow not altered. Top clear occasionally in forenoon but fog all round & usually blowing over the hill top. sky clear except for local clouds above the hill top. Showers of heavy rounded snow in afternoon & evening -

December 9th Heavy rain fell till 9^h and showers of snow all afternoon. The snow was hard & dry -

1889

December 11th

A distinct shower of sleet fell at 19^h though the day was apparently clear above the thin fog on the hill top and the temp. was 17° 3. At 22^h it was mist & quite damp with a temp. of 18° 8.

Thermometer Box shifted at 14^h 20^m Dry 192671 :
 Wet 192677 = Min 138545 and B.M. Max put
 out - Height alone snow not altered -

December 12th

Clear Sky but fog blowing over the hill top
 till 8^h Sun's corona seen on this fog -

South a South East gale from 17^h onwards with
 heavy drift - The low level door had to be
 closed at 18^h at 21^h 30^m an attempt to
 measure the velocity of the wind by the hand
 anemometer was made; but the cups were
 blown off, the shank breaking immediately
 under the crossbars - When it gave way it
 had recorded $1\frac{1}{10}$ mile in about 50 seconds,
 and the wind was increasing during the time.

December 13th

At 1^h the wind moderated & snow was falling
 heavily, so a gauge was put out for the first
 time - Heavy snow fell all forenoon covering
 the hill top about 2 feet deep in some parts,
 but there was almost no drift -

1889

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December 14th

a lunar Corona & fog horn were seen at 2^h when the fog thinned for a few minutes -

Thermometer Box shifted at 4^h 20^m Dry 192660: Wet 192672 and Min 138533 put out. Height above snow not altered -

The measurements of snow fall in the forenoon are very uncertain owing to drift. No gauge was in use from Noon to 20^h but apparently no snow or rain fell until shortly before 20^h

December 15th

Thermometer Box shifted at 12^h 20^m Dry 192671: Wet 192677 and Min 138545 put out. Height above snow not altered -

Sky partly covered with Cirro-cum. when seen in afternoon, but mist & rain came on before Midnight.

December 16th

Thermometer Box shifted at 10^h 25^m Dry 192660: Wet 192672 put out: Min 138545 left out. Height above snow not altered. Some hard icy drift was flying about at 22^h

December 20th

Fog all day but stars seen through it at 6^h & 7^h At 19^h St Elmo's Fire seen on Wind Vane, Tower chimney & Kitchen chimney: also on observers pencil & hair. Not very bright = gone at 19^h 30^m

1889

December 21st

Thermometer Box shifted at 16^h 25^m Dry 192671 =
 Wet 192677 and Min 138533 put out. Box put one
 stage higher on Ladder Stand.

at 16^h faint afterglow seen to SW and Earth-
 shadow to NE? Wind was Northw in afternoon,
 calm at 20^h and SE after that. From 17^h to
 23^h the air was dry the humidity at 20^h was
 computed at 12; the barometer was also at a maxi-
 mum at 20^h. The south side of the house is
 now deeply buried in drift, the kitchen window
 needing to be partly dug out, and a weather
 flush with the roof of the coal cellar.

December 22nd

No rain gauge was out till 9^h
 owing to the heavy drift, but apparently little or
 no snow fell before that hour. Drizzling rain
 began to fall at 11^h and continued most of the
 day after: the temp. at 11^h was 28° 8 & it never rose
 above 31° 0.

December 28th

Thermometer Box shifted at 0^h 20^m
 Dry 192660 = Wet 192672 and Min 138545 put out.

Height above sea not altered.

air dry till 8^h the humidity being below 40 at
 7^h and 8^h but at 9^h the temperature had

fallen $11^{\circ}3$ and the air was saturated -

The sun was first seen at $8^h 55^m$ - Fog lay in detached masses over the hills to E° in forenoon, and from 10^h onwards was mostly on Ben Neris also - There was also haze in the valleys -

December 29th

after 4^h the fog cleared off but the sky was overcast with cum-stratus till 18^h and detached fog lay among the hills at about 3000 feet height - after 18^h the sky cleared, but at 21^h & 22^h showed small high cum. after that fog again covered the top - Misty lunar corona seen at 19^h 21^h and 22^h -

The 8^h observation was 2 minutes late: no corrections applied to readings - Today the low level door was dug out again -

Two tourists climbed Ben Neris in December both on the 27th

An observing horse was up on the 7th

Instruments etc 1889.

Barometre No 1385 was in use through out the year -
No 1252 being kept as a reserve instrument -

For Dry and Wet Bulbs Thermometres Nos. 192660 =

192672 = 192671 = 192677 = 50850 and 50852

were used. Max 117293 & Min 116918 were

used in the large box in summer, and Mins

138533 and 138545 in the small box in winter -

Up to Midnights of May ~~30~~ 13th and at and after 18th

on Nov 1st a small louvered box on ladder stand

No 2. was used to hold the thermometres = between

these dates the large box - old clock box - was
used -

The usual 5 inch rain gauges, either rain or
snow pattern, have been in use -

The Campbell - Stokes sunshine recorder has been
used all through the year -

The Max. Black Bulb in vacuo No 186 has been
observed when feasible: and since August 31st

Black Bulb No 484108 - common thermometer not
Max - has been in occasional use -

The Direction & Force of the wind was estimated
as usual on the roof of the office at the hourly
observations, and the Robinson & Lyster anemom-
eters ~~to~~ used when the weather allowed -

The damage to the Robinson anemometer mentioned last year was not however repaired till July 16 since when it has continued in good order.

On July 24th the clock which works the tracing pen of the crystal anemometer was disconnected & shifted into the office to serve as a temporary standard clock while the original standard clock was sent to Edinburgh for repairs, and it is still there. The standard clock began to stop frequently after the middle of June and on July 22nd was sent to J. Ritchie Edinburgh for repairs: it was returned to the Observatory on August 17th but has not gone well since then.

On the 30th and 31st July a staff of post office workmen laid a new earth-wire from the Observatory to below Buchanan's Well which has greatly improved the ~~and~~ action of the telegraph instrument in dry weather. Except recharging the battery by the lineman no other repairs or alterations were made on the telegraph apparatus.

The Ramband was estimated daily, with few exceptions, by a direct vision spectroscope.

The Stephanome was used for measuring Halos, glories, coronae etc as usual.

Several photographs have been taken at all times of the year including various cloud forms,

a lunar corona, different kinds of post work etc. The Barograph was in use throughout the year except from April 29th to May 11 when it was dismantled one of the levers being sent to adie & wedderburn Edinburgh for alteration. The effect of this alteration has been to bring the scale more nearly in accordance with the true Barometric reading, it being now only necessary to add a constant to the Barograph readings to reduce them to the true Barometric values.

The Thermograph has not been used.

The depth of snow has always been measured at post A.

The ozone test papers were frequently blown away or bleached and the rainfall returns occasionally invalidated by drift. With the above exceptions the hourly observations have ^{been} carried on completely though the observation or part of it was on a few occasions from 1 to 5 minutes late.

The staff of the observatory consisted of R. T. Donald Supt. Angus Rankin 1st assistant, & J. Miller 2nd Assistant, also up to April 17th Alex. Drysdale and since Oct 23rd Wm. Wilson. Miss R. E. Mossman ^{J. Macdonald} R. Turnbull & J. Duncan took the places of some of the observers at various times. Mr C. E. Gray acted as telegraphist & occasional observer from July 4 to Oct 12.

Pages 110-126 missing
from volume

1890
February, 26th

127

Cloudless till 6h. All morning fog lay on northern hills and after 4h. it gradually spread southwards and rose in height till at and after 7h. it enveloped Benquevis also.

The temperature fell rapidly today, the fall beginning after 3h and amounting in the first hour to $8^{\circ}0$, in the first three hours to $12^{\circ}1$ and by midnight to $22^{\circ}8$.

The Robinson anemometer was tied after the 4h. observation.

The Black bulb hourly readings were discontinued after 19h.

February 27th

Thermometer box shifted at 17^h 10m. dry bulb 192678, wet bulb 192677 and min. 138545 being put out. Height above snow not altered.

No strangers visited the Observatory during February.

1890 March 1st

128

Summit clear almost all day. Air dry at times in afternoon.

The thermometers (not the box) were changed at 8^h 10^m. dry 192660 and Wet 192672 being put out.

A Lunar halo was seen at midn. on very thin filmy Cirrus. which radiated from N+E and S+W.

Cotton-wool readings taken at midnight.

March 2nd

Still-top clear all day. Small quantities of Cirrus on sky - radiating points at 16^h being ESE and WNW. After 20 hours this Cirrus was very filmy and on it the moon formed a corona but no Halo. A glare of 20° radius surrounded the Moon all night.

Hourly black bulb readings were started at 5h. and Cotton-wool readings continued to be made.

Air very dry at midnight - Humidity = 36.

March 3rd

The filmy cirrus, lunar corona and 'glare' continued on Sky till 5h.

Till 2h the hills around were very clear but at 3h sheets of str. fog were seen to N, W, + S. which became very general at 4 and 5. and enveloped the Ben at 6h and during the rest of the day.

1890

189

The hourly black-bull readings were discontinued at 17^h and the Black-bull and sling thermometers were taken in.

The first decided rise in temperature since the fall of the 26th Ult. took place today.

In the evening a mouse was seen in the Cumbers Room.

March 4th

From 11^h to 13^h heavy rain fell - the temperature being at the freezing point (32° to $32^{\circ}3$). During the rest of the day, snow or hail was falling somewhat heavily at times.

March 5th

Squally northeasterly winds in early morning. Most of the afternoon and night the temperature was between 30° and 32° and thin drizzling rain was falling, which formed a thick crust of ice on all exposed surfaces - badly choking the thermometer-box.

March 6th

Thermometer box shifted at 7^h. 20m. - dry-bulb 192671, wet 192677 and min 132533 were put out - height above snow not altered.

At 17^h, 18^h & 19^h the wind was SW, WSW and WSW respectively, during the rest of the day - previous to and after these hours - it was North easterly.

March 7th

Thermometer box shifted at 16^h. 15^m dry-bulb 192660 wet-bulb 192672 and min 138545 were put out - height above snow 44 inches. Heavy rain fell at 16^h & 17^h and heavy snow during the rest of day.

March 8th.

At 16^h and 17^h the rain gauge readings were useless owing to drift, and after this there was no rain gauge out, but apparently no snow was falling.

March 9th

Strat-cir observed at 2^h and 3^h, radiated from NE and SW, and moved from NW.

Bec clear most of the forenoon, but fog on except at 14^h and 15^h during the afternoon.

Thermometer-bow shifted at 1^h 15^m, the Dry and Wet Bulbs that had been out, were, after being cleared of snow put out again at 1^h 30^m - (Dry 192660, Wet 192672) Min 1325-33 was put out.

Both Black Bulbs were out from 7^h till 20^h. After 20^h it snow fell heavily, but owing to the drift burying the gauge no measurements of amount were obtained. The values for these hours on the daily and monthly sheets are interpolations.

Snow covered the country all round today to sea-level.

March 10th

Very heavy rain fell all afternoon.

March 11th

Raining heavily all day. At 3^h and 4^h the hourly amounts measured were 0.500 inch and 0.526 inch respectively. For six consecutive hours (1-7) the hourly amounts exceeded 0.300 inch. The total for the day was 5.210 inches.

1890 March 14th

131

From 8 hrs till 14^h the ^{rain} gauge was several times found either buried to the rim in drift or lying on its sides its measurements being thus rendered useless. As a little snow was falling at times the probable amounts at 7^h, 13^h and 14^h have been entered by interpolation.

The 17th observation was not made till 10^h 10^m.

[Three visitors today - the first this year.]

March 15th

Snow drifting heavily in forenoon and at night: No rain gauge measurements got from 8^h till 15^h nor after 21^h. 0.270 inch has been allowed in the total for today for these periods.

March 16th

Snowing heavily till 11^h but no measurements of amount could be obtained owing to heavy drift.

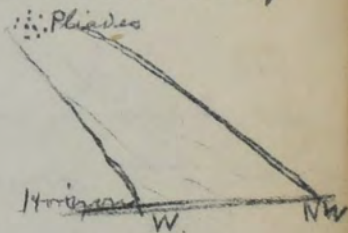
Summit clear at times between 11^h and 14^h.
Thick haze in valleys.

March 17th

Thermometer box changed at 13^h 15^m. Dry bulb 192671 Wet bulb 192677 and minimum 13.5345 put out.

Snow on lower hills today from about 800 ft. above sea level.

The Zodiacal Light was seen in the West at 21 hrs as per sketch.



March 18th

Rain gauge buried in drift at 4^h, 7^h, 8^h, 9^h. No gauge was put out after this till 12^h. The gauge put out at 8^h was found at 14^h.

At 15^h observed that morning's growth of fog crystals was brown.

1890 March 19th

132

Bar clear from 8h till 23^h.

Thermometer box shifted at 4^h 15^m Dry bulb 192660
Wet bulb 192672 and minimum 138533 put out.

Haze all round today, very thick in forenoon
moderately so in afternoon.

Three snow buntings seen flying about hill-
top at 8^h.

Zodiacal light seen at 21h. It could not
be distinguished from the sunset glare
at 20h.

March 20th

Thermometer box shifted at 9^h 10^m Dry 192671
Wet 192672 and minimum 138545 put out -
At 19^h and 20^h light drizzling rain falling
the air temperature being 27.9 and 27.4

March 22nd

At 18^h it was found that one of the
rain gauges leaked. The rainfall measurement
at 8^h 10^h 12^h 4^h & 18^h were in consequence useless
and have been disregarded. The gauge was sorted
again by 21^h.

March 23rd

Sols clear occasionally in forenoon and
almost all afternoon - Sky, Cloudy till 20^h
but cloudless after this.

Thermometers (not box) shifted, Dry 192660
and Wet 192672 put out, after the 7^h observation.

The dark part of the moon was unusually
distinct this evening.

March 24th Brown fog crystals forming today.

March 27th

133

Top clear after 21h. A Lunar Halo was seen at 22h.

March 28th

Thermometer box shifted at 0h 15m
dry 192671, wet 192677 and min. 138533 were put
out.

Top clear till 3h and again after 21h.
A Lunar Corona was seen faintly at
22h.

March 30th

Thermometer box shifted at 23h 15m dry
bulb 192660 wet 192672 and min 138545 put
out - height above snow not altered.

Top clearing at times till 21h - thereafter it was
clear and sky was cloudless till midnight.

A Lunar Corona was seen at 21h.

March 31st

Shadow of Ben seen above the horizon
at sunrise.

Great "visibility" in all directions till 8h. and
to N and NE till 16h.

At 14h 15h and 16h a thick bank of haze was seen
to W and SW approaching. At 17h it reached
Ben Nevis and at same time the summit was
enveloped by very thick fog.

Both Black bulbs were out today.

Strangers visited the Observatory during March

1890
April 1st

134

A Lunar corona was seen at midnight.
Thick haze all round below today.

At 11^h the distance between the edge of cliff and foot at "First Gorge" was measured, and showed that the snow overhangs 319 inches.

April 2nd

Mist or overcast till 6^h clear and almost cloudless during rest of day.

Air dry after 7^h - lowest humidity, 70% at 19^h.
Thick haze all round below and rising above level of summit.

April 3rd

Summit clear all day, and except for a little cirrus about midday sky was cloudless.

Thick haze all round.

Air very dry today. At 7^h and 8^h the humidity was 31 percent.

April 4th

Summit clear and air dry till 15^h - fog afterwards. In early morning there was some cirrus on sky, and at 1^h its radiating points were N and S but at 2^h - NE & SW.

At 2^h a Lunar corona was seen

April 5th

Top cleared after 4^h and air was dry, except at 9^h till 22^h - lowest humidity 26 at 6^h.

Part of Solar Halo seen at 15^h.

Haze all round but not so thick as during last few days.

April 6th

135

Sky clear at 6^h and 7^h. At these hours a solar halo with two mock-suns was observed. Radius from centre to outside as measured by Stephanome = $24^{\circ} 51'$

April 8th

Fog all forenoon, Overcast or almost so, with fog at times, all afternoon.

Thermometer box shifted at 20^h 15^m. Dry 192671 Wet 192677 and min 132545 put out. - height above snow not altered.

Between 20^h and 22^h there was a peculiar fall and rise in temperature. The barometer readings at these hours were the same - 25.294 - but at 21^h it was 25.248. The temperature readings were 20^h. $19^{\circ} 9'$, 21^h. $19^{\circ} 8'$, 22^h. $19^{\circ} 5'$ but the min. which was put out at 20^h, gave $17^{\circ} 1'$ at 21^h and $13^{\circ} 1'$ at 22^h. The barograph shows that at about 20^h 5^m there was a sudden rise and fall of about .050 inch (a mere kick up and down again), and at 20^h 55^m a fall which continued till 21^h 15^m to 20^m of about .020 inch and then a more gradual rise till after 22^h. Previous to this the curve was somewhat shaky. At 21^h the wind was NE force 2-4. while the sky was $\frac{7}{10}$ covered with strato-cumulus - the appearance to NW being exceedingly gloomy while to S^h the sky was open and clear.

April 9th

136

Fog clear at 1h, from 7^h till 15^h and at 21^h
and fog during the rest of the day.
Air dry from 12 to 14h.

April 10th

Fog till 15^h clear afterwards but sky overcast
or almost so except at midnight when it was
cloudless.

Very fine colours at sunset.

April 11th

Ben clear of fog ^{except} at 5h and 6h. Sky cloudless
after 20h.

The air was dry at and after 9hrs.

Passing showers were observed to N^o and NW^o in
afternoon.

The Zodiacal Light was seen at 22h.

April 12th

Ben clear of fog and air dry except at
22h and 23h. ^{Between Hotel & 1st house depth of snow was found}
to be 167 inches and near hotel place 181 inches
Thick haze to SE, S. & SW in distance all
afternoon - very little to N^o.

Both Black Bulls were put out at 3h.

April 13th

Fog on summit at 1^h and after 2^h clear
during the rest of the day.

Shadow of Ben seen above the horizon
at sunrise.

The Humidity was very unsteady in forenoon
- at 7h it was 36% and at 9h the air was
saturated.

Passing showers were seen in various
directions during the afternoon.

1890

At 20h an ugly cum-s or nimbus cloud ¹³⁷ was seen to SE over Glen Nevis. At 21h it was overhead and by 22h it had passed away to NW.

April 14th

Thick fog from 9h till 12h and at and after 18h.

Thick haze all around in afternoon. Between 8^h and 10^h slight showers of snow fell but only 0.001 inch was registered by gauge.

April 15th

Thick fog on summit except at 17^h 20^h and 21^h.

At 17^h a Glory was seen.

At 20^h and 21^h the sky was covered with the hard detached (rare) form of Cirro-str. cloud. Its radiating points being SW. NE, not well defined.

April 17th

Fog crystals forming today, and all last night.

April 20th

Brown fog crystals forming today. A little drizzling rain fell at night.

April 21st

The summit was clear from 3^h to 6^h, but sky was partly covered with hard detached sheets and lumps of Cir-s or Str-cus (rare type). Fog or mist during the rest of the day.

In forenoon heavy rain and hail fell but the rain gauge measurements were rendered useless by

1890 heavy surface drift - at times the drift seemed to be all pieces of ice torn from surface by wind.

138

The 9th Ozone test was blown away, and the 21st one was bleached. Half hourly readings of the Barometer were made from 6th till 14th.

The Black Bull (Max) was brought in at 7th. The Robinson anemometer was working from 9th till 13th.

April 22 Between 3^h and 4^h the Barometer fell 0.102 inch.

Wind was exceedingly variable ~~after~~ at and after 7th.

Heavy rain and hail fell at 6th and 7th today at 6th the amount was 0.621 inch. Snow fell during most of the day, and at times was hard - snow hail.

April 24th

Thermometer-box shifted at 4^h 15^m was put one step higher on ladder-stand than it was before. Dry bulb 192660, wet 192672 and min: 138545 were put out.

The 9th ozone test had only been out from 4^h instead of from 24th last night.

April 25th

A few minutes of sunshine may have been lost today, owing to the snow thawing from under recorder and tilting index off clip.

April 26th

At 13^h today a sound was heard in neighbourhood of Kitchen Chimney similar to St. Elmo's Fire. It lasted for about 2 minutes.

1890

April 27th

139

Fog on Ben on passing most of forenoon - clear all afternoon, and air dry from 13h till 22h.

Very fine sunset.

A mock sun brightly coloured seen to N^o of sun (about 22°) from 19^h 20^m till after sunset (20^h 4^m + 5^m). It was formed on a thin horizontal streak of cir-s.

Lunar halo with mock moons seen at 23^h and midnight: as per diagram

Radius to inside of m-m 25° 13'

" " inside Halo 22° 36'

There were gaps in the Halo (or inside edge of Halo) where the mock moons were seen.

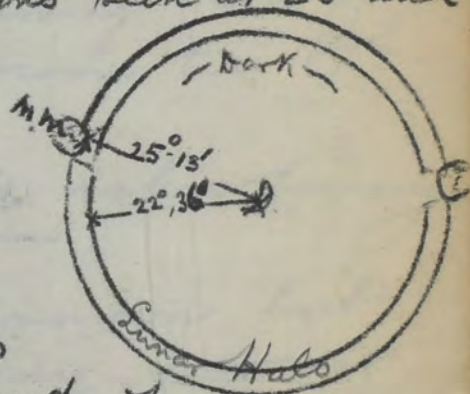
Immediately inside the halo

all round there was a band of darkness (i.e. this band was distinctly darker than any other part of the cirro-stratus film on which halo was formed)

The cirrus on sky at night radiated from NW & SE and took the form of long filmy bands through which the stars could be seen stretching at times right across the sky from Radiating point to Radiating point.

The depth of the snow wreath to NW of Hotel near bucket-place was today found to be 218 ins.

The amount of overhanging of snow at First Gorge was 277 inches.



April 28th

Top clear till 22^h - fog thereafter. Cir or cir-str. on sky till 13^h and Camus in afternoon.

1890

The air was dry except at 10^h 11^h 23^h 140
and midnight. From 4^h till 9^h the
humidity was very low and steady,
being 25 or 26 % the whole time.

Part of a solar Halo was seen at
12^h; and a lunar ~~halo~~ Corona at
23^h.

Both Black-bulbs were put out at 4^h

April 29th

Fog on summit or passing most of
forenoon. Air dry from noon till 17^h
but sky cloudy

Thick haze all round below today

April 30th

Fog or mist all forenoon but
clear after 13^h - sky being overcast
or nearly so with Cumulo. St. and Scud
till 6 pm, and afterwards with Str-cir
and Cir-c - the latter at 23^h being
uppermost and moving quickly from SSW
and the Str-cir motionless. At the same
hour a cloud of the 'rare' Str-cir type
was seen to SW. From a mere speck it
quickly increased and then gradually
faded off, being gone 6 minutes after
it was first noticed. It kept the same
position all the time but its growing in
one direction and fading in the opposite
gave it an apparent motion first in
one way and then in the other.
Robinson's Anemometer was started at 18^h.
Thick haze at night

11 Visitors during April.

1890

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May 1st

Top clear all day. Sky cloudy till 18^h but cloudless thereafter.

Thick haze around all day.
Gloomy thundery appearance in early morning.

May 2nd

Sky cloudless till 7^h, some cirrus thereafter till noon, and Cumulus and Cumulo-stratus till 16^h, after which mist came on.

Some hard Str-cir in sky in afternoon. Thick haze could be seen all around below while top was clear, and hazy bands were seen in eastern sky at 4^h.

The Robinson anemometer was tied at 2^h, set off again at 6^h 45^m but tied again after 22^h.

May 3rd

Mist or fog on or passing till 13^h. Clear thereafter but sky overcast or almost so.

Thick haze below all afternoon. The Robinson anemometer was set off at 10^h.

May 4th

Summit clear and air dry till 19^h and at midnight.
Hard Cir-s on sky today.

1890

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Passing showers were seen to N. in forenoon.

Haze all day not so thick in afternoon as in morning.

The Thermometer Box was shifted down one step on Ladder-stand after the midnight observation.

May 5th

Top clear all day, and air clear except for few hours in afternoon.

Thin fog on hills to N. & NE in forenoon - clinging close to hills and showing on its upper surface the shape of the hills and valleys it covered. At 4^h and 5^h cumulus-shaped clouds formed to E in distance and advanced W^{ds} quickly. Each cloud had a thin stratus cap which moulded itself to shape of upper surface of cum. cloud, but did not touch the cloud.

Peculiar forms of ascending currents were observed in Corrie to N. at 8^h.

A click in telegraph instrument at 15^h 15^m was followed by a peal of thunder - the only peal heard though all afternoon the appearance was very thundery. Part of Rainbow seen at 8^h.

May 6th

A rat was seen at 2^h.

May 7th

Mist on Ben or passing till 13^h, clear thereafter but sky partly covered with Cir-s radiating from SE.

1890th

143

Hard Sh. cir was seen to E² at 4^h
 A Solar Halo was seen at 15^h

May 8th

Top clear and air dry all day
 Fog in NW and NE valleys in forenoon,
 Passing showers in distance and on
 Ben Nevis in afternoon.

Sky partly covered with Cir-2 till 8^h
 and after 22^h radiating at 4^h from E & S
 and W & N and at 23^h from N. & S., and
 overcast with Cumulus, Cum-s, or
 Nimbus during the rest of the day.

Dew observed on Black Bull ~~at 4^h~~
 and hoar frost on roof at 4^h

A rainbow was seen at 15^h

May 9th

Sky cloudless till 6^h am.

A light air NW horizon all last night
 was at first taken as auroral, but this
 is doubtful.

Showers in distance in afternoon.

May 10th

Robinson tied after 4^h and started
 again at 10^h

The Observatory horse was up today for
 the first time this season. It did not
 come nearer observing than 1st Gorge
 owing to the "rotten-ness" of snow

1890

May 11th

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Top clear most of the afternoon, but sky overcast or almost so.

A Solar Halo was seen at 14^h and another at 18^h.

May 13th Thermometer-Box was shifted down on step about 0^h 10^m.

Robinson Anemometer was tied after 1^h started again after 12^h, but tied again after 22^h.

Top clear most of the day, but mist and showers of snow in early morning and at night.

Hard packed cir-s on sky, at 17^h not showing any well defined radiating points.

May 14th

Heavy snow and hail falling in forenoon - and showery all day.

Top clear at times in afternoon.

May 17th

The Robinson Anemometer was started before 1^h and tied up after 20^h.

Mist most of the day but clearing at night.

May 18th

The Robinson anemometer was started after 11^h.

Showers of rain and sleet all afternoon.

1890 May 19th

145

Mist or fog on Ben or passing all forenoon. Clear, and air dry all afternoon. Dry and wet bulbs were changed after 18th - Dry 192671 and wet-192677 being put out - the minimum was not changed

May 20th

Top Clear from 4^h till 11^h and at 19^h and 20^h.

Fog in valleys to N^o, E^o & S^o in forenoon and thick haze in distance to S^o and SW^o at 20^h.

May 21st

The only observation was made at 17^h. 5^m. Mr. R. C. Mofsmann visited the Observatory today and stayed overnight.

May 23rd

Top clear all day: sky somewhat cloudy, from 3^h to 5^h fog and haze lay in valleys to 3000 ft. to E^o and SE^o (the hill-tops being clear), and afterwards gradually spread and rose higher, passing top of Ben Nevis at times in forenoon. The haze increased and thickened, being very thick all around in afternoon.

The air was dry except at 6^h.

May 24th

All last night the northern sky was bright with sunset or sunrise colours - at 1^h there were red, yellow, pale green and blue. A little cirrus on sky till light cloudless

1840

May 24th

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during rest of day.

The upper glow was seen at sunrise and sunset, showing pink streamers in both cases.

Air dry all day, lowest humidity 45° at midnight

May 25th

Upper-glow seen at 3^h and 21^h.

In early morning atmosphere was very clear about level of hill-tops, but there was fog and haze in valleys to N and NE, which spread in every direction and rose higher till in afternoon it was all around, and passing top of Ben Nevis at times.

Sky almost cloudless and air dry all day. Temperature falling all day, from midnight to midnight it fell 22° 0.

The Robinson anemometer was tied after 23^h. At 5^h it was observed that the sunshine recorder was not focussing properly - that paper was too far from glass ball. By padding back of paper it was got to record all night.

Skerryvore Light was seen at 2^h 30^m.

May 26th

Fog passing ~~at times~~ and air saturated at times till 1 pm; summit clear and air dry for the rest of the day, but haze and fog in valleys to N and E.

Faint afterglow noted.

At 23^h Pearly Cirrus was seen, (first time this year) in N and NE sky. Photograph were taken at 23^h 27^m and 23^h 54^m. At 11^h 40^m it was about 13° above horizon.

May 26th

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and from this point the line of greatest brightness seemed to incline towards a point on the horizon about NE x E.

Notes taken of Pearly Cirrus:—

23rd - Ribbon cir-c type: seems low: stars seen through. (moving apparently from E³ slowly)??.

Midnight — Part seen to N³ fading, but still bright to NNE³.

Looked at through telescope — seems like wavy sheets of Stratus seen edgewise; has apparently a bright and a brighter side: moved through 1° in 2 minutes from a N. or West. of N³ direction: one long streak had a dark wavy line running throughout its whole length.

May 27th Notes on Pearly Cirrus continued —

1st Pearly Cir. to N³ gone but bright to NE³: traced to 11° above horizon but brightest part only 7½: extends now to E x N but faint.

2nd Pearly Cirrus to ENE from 5° above horizon up to 20°: Very faintly marked to NNE³ but still there.

2nd 50m Plate taken of Pearly Cirrus to E x N³

3rd No Pearly Cirrus or any kind of cloud in sky only faint bands and streaks of haze near horizon, and pink "foreglow" streamers.

Sky cloudless most of day. Fog on hills to E & N³ till 4th fog all round to 4000 ft. at 7th passing summit at 9th and all gone at 13th. Thin haze in afternoon all round below and thin haze heads in sky near horizon.

The Robinson anemometer was started at 5th and recorded ^{only} 53 miles between 6th and midnight (strong breeze reported from Fort William).

Hard low Sta. cir seems to E³ at 20th motionless.

The Cirrus in sky at 21st radiated from E³.

1890 May 27th

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Noted afterglow till 21^h 45^m Steamers were seen from 21^h 20^m till 21^h 35^m

There was more red in Wst sky than last night. Nth sky bright all night.

May 28th

Faint 'foreglow' at 3^h

The Cirrus(9) in sky at 4^h radiated from Nth E and Sth W.

At 5^h there was a band of peculiar haze all around above level of summit, but there was none below.

Fog in valleys to Wst, Nth, & NEth at 6^h. It gradually rose and spread, and at 11^h it was all around to 4000 ft. and at, and after 14^h it enveloped summit.

The Robinson anemometer was tied at 19^h.

During the last few days there has been a large cup-shaped hole directly under the thermometer-box, owing to the snow thawing about the ladder-stand more rapidly than on the general surface.

May 29 Mist all day, with heavy rain snow and sleet.

May 30th Clear most of afternoon. Passing showers seen all around.

1890 May 31st

Thermometer-bon changed at 9^h 15^m
 Dry bulb 192660 Wet, 192672 and minimum 138533
 put out: Height above snow not altered

58 Tourists visited the Observatory in May

June 1st

Robinson's anemometer was started at 10^h
 and tied up again after 19^h

June 2nd

Robinson's anemometer was started at-
 13^h.

Heavy rain all afternoon.

June 3rd

After the 12^h observation the top joint of
 ladder-stand was taken down: and the
 thermometer bon was lowered one step on
 ladder-stand.

June 4th

After the midnight observation ~~the~~
 Black Bull N: 186 was shifted from the bracket
 stand attached to ladder stand to its own
 stand to SE of Thermometer Bon; and the
 other Black Bull was shifted down one
 rail on snowpost.

Today Mr. Omond came up with the
 large dust-counting apparatus. He brought
 up a new set of thermometers - Dry 535541 and
 wet 535542 by Adie and Wedderburn - Kew tested -

June 5th

150

Clearing in afternoon. A solar halo was seen at 18^h.

Thermometers shifted at 19^h - Dry 535541 and wet 535542 were put out - height above snow not altered.

Today the large dust counting instrument was fixed in the middle room of tower.

Mr Ormond went down the hill this evening.

June 6th

Robinson's anemometer was tied up after 11^h today.

Heavy rain in morning - and a shower of snow at midnight.

Summit and hills around were clear of fog part of afternoon but the sky remained overcast and the air saturated.

June 7th

Continuous fog till 7^h; sky overcast or nearly so and fog passing at times till 20^h; Cloudless thereafter.

A solar corona was seen at 21^h and the afterglow at 22^h.

Showers of snow fell in morning.

June 8th

Foreglow was seen at 3^h.

1890 June 8th

151

Cloudless till 5h.: increasing amounts of clouds chiefly cir. and cir-c. till 15h. and thick fog or mist with some rain thereafter. Robinson's anemometer was started at 11h. A Solar Halo was seen at 11h. and 12h.
Radius per stephenson: -

11h. $22^{\circ}.38'$ one observation

12h. $23^{\circ}.48'$ mean of five observations

June 10th

After 10h. the mist cleared off. but there was thick haze all around below, and remarkable forms of cloud covered the sky - large, gloomy, threatening masses and sheets of Str.-cir, with strata of Cir. and Cir-cum above these. The wind blew over 50 miles an hour from 10 till 23h.

June 11th

Mist with rain or drizzle most of the day.

Today the snow disappeared from about Post A.

A set of thermometers, Dry 192671 Wet 192677, were put out at 20h. in the large (Check) Box 48 inches above ground, and hourly readings were taken of these as well as of those in small box on ladder stand.

June 12th

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The double set of thermometer readings were ~~made~~ continued all day, but at 18^h the thermometers ~~in~~ the two boxes were ex- changed - Dry 535541 and Wet- 535542 being put in the large box, and the other set in the small box. The readings in the small box have been entered on to-days daily sheet, but after the midnight observation this box and Dry 192671 Wet-192671 were taken in. After this the readings entered on daily sheet will be those ~~of~~ taken in the large box 45 inches above ground.

June 13th

Fog clear at times today.
A Fog-bow and a glory were seen at 5^h a glory was also seen at 2^{oh}. In this on the observer stood near the tower, and the shadow of tower was seen projected on the fog and cutting the Glory formed round the shadow of observer. The plane of shadow of edge of tower could be traced outwards into the fog, and the same could be done with that of the Chimney. In both cases the shadows diminished in perspective.

June 14th.

Mist or fog till 9h; sky somewhat cloudy during the rest of the day, but air dry.
Fog on hills around especially to N west.

June 14th of the day. Thick haze was seen to 153
S³, approaching, after wh.

June 15th Thick haze all around below 3000 ft. in
early morning. Fog sheets were forming on top
of the haze at 4th and 5th.
At and after 3h the fleecy cum-cir on sky
was gradually descending and becoming
heavier, till at 6h it lost its cum-cir
appearance and formed a dull uniform
pallium, which before 7h descended on Ben and
enveloped it as wet drizzling mist during
the rest of the day.

Splendid sunrise. The clouds at and
above horizon were thin streaky, and almost
transparent cir. and cir-stratus, and these
showed almost every kind and shade of
colour in thin delicately tinted streaks while
higher up the under surface of the cum-e
was all aglow with various shades of red.

June 16th
Shower of hail and sleet fell after
2ol.

The Hotel was opened for the season today

June 17th Mist: Cold and showery all day.
Showers of snow and sleet in afternoon.

June 18th
Summit clear part of forenoon, but
sky overcast (cir-s 10) and fog on hills all
around to 4000 ft.

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June 20th

Showers all day - hail and sleet at times

June 21stSnow and sleet in early morningJune 22ndSummit clear at and after 17^h. Clouds on sky lying NW and SE and, at 22^h, moving from WNW. At midnight there was fog all round and beginning to pass summit. A Glory was seen at 20^h.June 24thHeavy rain and squally, SSW to SW^h. wind at night.June 25th

Very squally till 3 am with heavy rain.

June 26thShowers of hail between 16^h and 17^h and snow and hail at midnight.June 27thSummit quite white with freshly fallen snow at 2^h.

Showery - snow & hail - throughout the day.

June 28th

Summit clear most of the day.

At 7^h 40^m a part of a rainbow, double at times, was seen on a passing shower to S. At the

1890 June 20th

time ragged clouds floating at from 155
3000 to 4000 ft to SE in line with observers
shadow (shadow fell about thermometer box and
did not project beyond hill - standing on top
at the time) were seen to be variously coloured
chiefly red and blue. There was no "ringed"
order in the colouring, the red and blue being
mixed all over the cloud. The only order that
could be made out was that the colours seemed
to be arranged round patches and along the
edges of narrow stripes in the cloud. They
seemed exactly the same as coloured clouds
seen ~~now~~ sometimes near the sun and moon.
The 23rd observation was made at 23h-5m.

June 29th

At 1^h Pearly cirrus was seen in NW sky from
NE to NW and reaching to 25° altitude.
Pitched structure - motion from N.
At 2h. Pearly cirrus gone.

Summit clear most of the day, but fog on
hills all round and passing at times.
Wind backing and rising all afternoon being
SE and 30 miles per hour at midnight.

June 30th

Strong SE to E winds till 5pm, backing thereafter
to NE and N. - 75 miles were recorded by anemometer
at noon for the previous hour.

Of the 60 ozone tests (2 daily) exposed during June
23 were bleached, 3 blown away and several though
not quite bleached were wet and fading at the
time of reading them

About 160 tourists ascended the Ben during
the month.

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July 1st

Fog on hills around a passing at times till 13h - hazy thereafter.

Air dry from 5 till 9h and all afternoon

July 2nd

Cum-s (10) on sky at 3h. It gradually descended and thickened and covered the hilltop at 3h. 45m and thereafter till 9^h.
Cloudy all day.

Passing showers on Ben Nevis and in distance all around after 10^h. During a heavy shower of snow at 20^h. 10m "St Elmo's Fire" was heard on chimneys, towers, observers hair and pencil - loud hissing and at times, crackling sound heard.

July 3rd

Light showers of snow at times, and a heavy shower of hail at 14h.

July 4th

Summit clear and air dry from 11^h till 22h. During the afternoon the atmosphere was pretty clear.

July 5th

Showery at and after 10h - snow and sleet at times.

Mist all day except at 6 & 7h.

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July 6th Light showers of drizzle and sleet fell throughout the day, and a shower of hail between 16h and 17h.

After the 22h observation the Robinson anemometer was tied up, the temperature having fallen below 32° .

July 7th

Snow falling continuously after 8h today, and heavily after 20h. There were 3 or 4 inches of freshly fallen snow on summit at midnight.

The maximum shade temperature today was only $32^{\circ}.5$

July 8th

The snowfall continued somewhat heavily till 5h, and there were light showers again in afternoon. Six to eight inches lay on the hilltop at 4h and drifted somewhat till 6h. The Hilltop remained covered all day.

July 9th

Top cleared in afternoon. During a short clear interval after 21h Stratus (rare) clouds were seen in northern sky.

Today Mr. Omond accompanied by Mr. Baker of New Observatory visited this Observatory.

1890 July 10th

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Showers of snow throughout the day.
Top clear in afternoon

July 11th

Almost calm all day. Top clear but sky nearly overcast from 5h till 16h. Passing showers near in distance throughout the day. Great visibility noted in afternoon.

July 12th

Clear for few hours in forenoon. Mist with snow, drizzle or rain in afternoon.

Decided rise in temperature today.

Robinsons anemometer was set a going after 14h.

July 13th

Heavy rain falling all day.

At and after 11^h the temperature was above 45°. At midnight it was 47° 1' — the highest reading in shade since May 25th.

July 14th

Heavy rain in early morning. Showers of drizzle throughout the day, and a shower of hail between 13^h and 14^h.

Max. N° 117293 was put out in thermometer box taken at 1h.

July 16th

Top clear most of the day. Sky cloudy till 19^h and overcast thereafter.

Dew on Bon at 21h.

Pearly Cirrus noted at midnight low to N° about

1890 5th altitude - Not above the green of sky - colors
of moon sky being yellow green and blue. 159
Showers of snow at 11^h.
The 20th observation was not made till 20th 5^m

July 17. Pearly cirrus noted at 1^h as at midnight (16th).
Snow frost on roof in early morning.
Zoregha noted at 3^h 15^m. A halo was seen
at 14^h.

In morning radiating points of cirrus were
WSW ENE, at 14^h the radiating point was SW.
Very clear to SW² at 20^h.

Top clear all day - sky cloudy (1 to 5) all forenoon
and nearly overcast all afternoon.

The Observatory Standard clock was
today sent to the makers to be repaired.

July 18th

Showers of rain and sleet in
early morning - Showery throughout the day
Mr. James McDonald arrived at the
Observatory today.

July 19th

Summit clear all day. Detached fog on
hills in forenoon.
Zoregha seen at 3^h 18^m. Shadow of Ben seen to W.
at 4^h. Very clear to SW⁵ at 21^h.
Observatory clock stopped at 19^h 49^m - Cause
probably a shake from something.

July 20th

Clear till 5^h. Cirrus radiating from
N and S. Sudden rise of temperature and heavy

1890 July 20^d. (Cont.)

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of wind to N at 23^h. today.

July 21st

Clearing in forenoon but fog in valleys.

Solar Halo seen at 21^h

July 24th

Showers of Snow and sleet. throughout the day.

July 25th

Clearing at times throughout the day sunny intervals in afternoon.

July 27th

Heavy rain in early morning
Solar Halo seen at 16^h

July 28th

St. Elmos fire heard at 5^h 18^m and seen at 23^h. Showers of sleet and rain falling at both times.

July 30th

Heavy drizzle falling all forenoon.
Mr. Aitken visited the Observatory this afternoon, and inspected the dust-counting apparatus.

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August 1st

Summit clear most of the afternoon but fog on hills around. Sky cloudless after 22h.

At midnight thin fog was rising from N^W Corry and passing. On this fog a lunar Corona was seen, and also a glory and fogbow.

Corona - inner red { outside $3^{\circ}38'$
inside $2^{\circ}7'$

" Outer red { outside $4^{\circ}15'$
inside $5^{\circ}48'$

Glory - no colour, only one white ring
two measurements of outside of white ring - $5^{\circ}39'$ and $5^{\circ}43'$

Inside of fog bow - $33^{\circ}42'$

August 2nd

Thin fog on summit most of the day but the air was dry at and after 8h.

Clear after 20h but fog below and sky cloudy. - Radiating points N and S. and motion of upper cloud sat 23h from N. At 20h some rare str. cir clouds were seen W

August 3rd

Top clear and air dry till 9h at 5.6 and 7h humidity was 49%. Very clear to S^d in early morning.

Mist at and after 10h

August 6th

Very clear to W^d at night.

This evening a joiner began fitting

Aug 6th of the Storm-thermometer-Box in 162
southeast side of upper room of Tower

Aug 7th Top clear almost all day. Thick haze all around in afternoon.

August 8th Top clear all day. Thick haze all around.

Today Mr. Doyssdale arrived at Observatory, and Mr. Rankin went down to Low Level Observatory to meet Dr. Buchan.

James finished fitting storm-box in Tower.

Aug 9th Top clear till 21st - mist thereafter. Wind rising to gale at night: being E x S and 52 miles an hour at midnight

August 10th Strong E or ESE winds all day, the mean velocity for day being 51 miles an hour, Max - 63, Min 36.

Mist or fog till noon, - clear thereafter and almost cloudless at night.

August 11th Top clear all forenoon, mist or fog in afternoon. Mr. Rankin returned to Observatory today and Mr. Miller went away

1890 August 12th

Mist almost all day. Heavy showers¹⁶³ throughout the day - rain and at times hail. St Elms Fire was heard at 15^h and 16^h.

August 13th

Top clear most of the day; but dense fog on hill below.

A Rainbow was seen at 18^h.

August 14th

The Observatory clock stopped at 1^h 20^m today - the winding apparatus having come in contact with pendulum; It was started again at 8^h 20^m. The observations were not affected by this interruption.

August 17th

Today Mr Rankin went down to the Low Level Station -

August 21st

Heavy showers of rain, sleet & hail in afternoon - Robinson Anemometer tied up after 21^h.

August 22nd

Robinson Anemometer started after 11^h.

August 23rd

Robinson Anemometer tied up after 2^h and started after 10^h but tied again after 20^h. Top clear at times in afternoon.

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August 24 Robinson Anemometer started after 10^h

August 25 Fog in hills & over Lochs till 10^h but almost continuous mist on the top thereafter -

August 26^d Today Mr Omond returned to the Obery and Mr J. M. Macdonald went down -

August 27^d Ground all white with snow at 1^h which however thawed off in the forenoon - Robinson Anemometer tied up after 1^h and set going again after 7^h - Horrid Black Bubbomed up & ushers for several hours in early morning - Sky cloudy in afternoon, mist the rest of the day -

August 28^d Robinson Anemometer tied up after 10^h

August 29^d Sun rose from behind a cloud bank at 5^h 25^m - The Upper Glow was seen at 4^h 50^m and the Ben Shadow & Earth Shadow shortly before sunrise - Robinson Anemometer started at 12^h but tied up again at 20^h - Lunar Corona seen at Midnight - Sky clear in early morning & at night but fog & sand passing over the hill top -

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August 30th

Sky cloudy with Scud & Cum. and occasional fog on hill top, but air very clear to SW^d in afternoon. Double Lunar corona at midnight.

August 31st

Large & streaks of fog in valleys all morning, light fog on Ben Nevis also about sunrise. Cumulus forming over hills in afternoon, and mist on Ben Nevis at night. Air clear all round in forenoon & early afternoon. Robinson Anemometer started after 22^h.

about 800 Strangers climbed Ben Nevis during August.

September 2nd

Mist broke for a few minutes about 11-30^h and sank down after 19^h leaving sky covered with rather high Cumulus. At 21^h the mist rose again the temperature rising at the same time and rain coming on.

In future the Hourly Black Bull will be read only during daylight hours.

September 3rd

Mist and drizzle all day, but sun seen gleaming through it at 8^h.

September 4th

Mist all day which sunk down at night to about 4000 feet. Glories seen about sunset. A sunar fog-lon at Midnight.

September 5

Fog lay over hills at 4000 feet till Noon after which it broke up into detached portions, but mist came on Ben Nevis in the afternoon & continued with occasional breaks all night. Today Miss J. Miller & G. Visbet returned to the Obsevy- and Mr A Drysdale went down.

September 6

Mist passing and air saturated at times till 4 am; summit clear and air very dry in the afternoon - Fog lay in valleys all round till 7 am Haze in distance. Today Mr Ormond went down to Low Level Observatory

September 7

Sky nearly cloudless except for a little Cirro Cumulus in early morning. Air very dry in the afternoon. Detached fog on hills to Nth & Eth. Haze all round Stanchest to Wth. Fog came on at 21^{hrs} clearing at times. Most of the day the shade temperature was over 50°. The highest hourly reading this year occurred at 14^{hrs} when the Dry Bulb read 58.9°

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September 8th

Top cleared in the afternoon. $\bar{3}$ all round. Fog came on again in the evening

September 9th

Continuous mist or fog till 15^{hrs} sky overcast or nearly so till 17^{hrs} fog since

September 11th

Mist all day till 18^{hrs} clear till 20^{hrs} when the air was dry. Fog on hills to 4000 ft all round. Glaciers were seen at 19^{hrs}. Today R. C. Mossman and A. Drysdale visited the Observatory

September 12th

Mist till 7 hrs. Detached fog lay on hills nearly all day. Sky clear except for a little cirro-cumulus in the forenoon cirrus and cirro-stratus in the afternoon till 18^{hrs} then sky cloudless. Fog bows were seen this morning

September 13th

An Aurora, single arch with faint streamers was seen at 1^{hr}. Sky almost cloudless all ^{day} but fog lay in valleys till noon. Since then haze began to form in the S.W.^d & W.^d and at 18^{hrs} very thick haze all round. Air very dry all day till midnight when fog came on, top clearing at times

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September 14th

Fog till noon when the fog cleared
sky overcast or nearly so the rest of the day

15th September

At 3 am fog was passing over Ben Hurin
and at 4 am the fog was completely
enveloped in fog and continued so
till 9 am after which sky was nearly
cloudless the rest of the day

A fresh gale from S'E and S'S'E has
been blowing all day. Highest hourly
velocity 69 miles from 12 am to 4 pm
Max and Min readings were taken from
hourly observations for report. Thermometers
readings were far too low compared with
hourly readings

Max 47.7
Min 23.6

Corrected

Very thick haze on hills all round

16th September

Yesterdays gale continued all
last night and today highest hourly velocity
71 miles from 11 am to 4 pm. Sky nearly
cloudless all day. Min reading was
taken from hourly observations for report
Min as observed at 21st was 26.4

1890
17th September

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Mist or fog nearly all day.
Air slightly dry at 5 am

18th September

At noon wind had veered to the S.W.^d accompanied with a fall in temperature. Barometer rising steadily all day. At 22^{hrs} wind had backed to the S.E.^d again. Mist till 27^{hrs} sky overcast till 22^{hrs} hills enveloped in fog to W.^d N.^d + E.^d but clear to S.^d after that fog came on again.

19th September

Fog lying in valleys and over Lochs till 7^{hrs} after that mist came on with occasional breaks and sunny intervals. At 5^{hrs} flames were seen issuing from hotel chimney and reaching a height of several feet. At this time things looked serious and Observatory officials were called. With their assistance and a few

buckets of water the flames were soon put down. No serious damage was done. It turned out to be the Boy in the Hotel was experimenting, kindling the fire with waste soaked in Paraffin Oil.

20th September

Mist all day except for some Cumulus and Stratus Cumulus at 18^{hrs} and 19^{hrs}

21st September

Mist and drizzling rain all day

22nd September

Mist till 20^{hrs} since then sky overcast fog in valleys all round. Barometer rising rapidly all afternoon. Air slightly dry about midnight. Wind has slowly veered from ESE to W. Wind force in early morning about 7 and tonight almost calm.

23rd September

Sky clear except for a little Cirrus at 11^h + 12^{hrs} after that fog came on again. A Solar Fog bow and Glories were seen. Dr Murray visited the Observatory to-day.

24th September

Temperature fell at midnight to 32°. Heavy showers of Hail + Sleet has fallen since 20th. Robinson Anemometer tied at 23^{hrs}.

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25th September

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Shower of snow and sleet fell in early morning, and heavy rain at 21^{hrs} - 22^{hrs} and midnight. Total amount for these hours 1.457 Inches

26th September

Very heavy rain fell from 1^{hr} till 5^{hrs}. Total amount for these hours 3.057 Inches

27th September

Mist and heavy rain all day

28th September

Barometer and Temperature falling all day

29th September

Variable gusty West and Northwesterly winds and almost continuous rain till 17^{hrs} since then heavy showers of snow has fallen. Summit quite white. Barometer falling. Robinson Anemometer tied up at 18^{hrs}.

30th September

Fog cleared off the Ben at 6^{hrs} leaving sky covered with Cumulus Stratus, detached fog on hills all round to 4000 ft till 11^{hrs} since then fog has come on again. Wind variable chiefly West and South West most of the day.

Today Mr Omond returned to the Observatory and Mr Cierar - Telegraphist - left.

Between 500 and 600 Strangers climbed Ben Nevis in Sept.

October 1st at 2^h rain was falling heavily and while the observer was on the roof the hissing noise that accompanies St Elmo's Fire was heard. Sparks of light were seen on the pencil & other objects held up by the observer, but not on the tower, chimneys etc. Being nearly full moon it would not be easily seen at a distance. a similar noise was again heard faintly at 12^h

October 2^d Lunar Corona seen at 5^h Radius to outside = $7^{\circ} - 14'$. Faint Solar Halo seen at 10^h. Temperature rose rapidly at night and heavy rain came on.

October 3^d Very heavy rain fell till 19^h and moderate rain and drizzle after that. Today one of the upper kitchen ~~steps~~ chimney stays gave, but it was repaired in the afternoon.

October 4th Today Mr Thonard went down

October 5th Robinson Anemometer started after 6^{hrs}.

October 6th Light showers of snow fell in the forenoon. Temperature very steady most of the day. Robinson Anemometer tried at 7^{hrs}

1890

October 7th

173

Fog cleared at 10^{hrs} but sky overcast with Cirro-Stratus. Fog lay on hills all round and at times passing over Ben Nevis. At 14^{hrs} fog came on again and at 23^{hrs} sky was almost cloudless but some fog over hills to Eth. Air slightly dry at midnight. A very small part of an Aurora was seen at 20^{hrs} but owing to fog passing at the time it was impossible to observe it properly.

October 8th

Summit clear and sky cloudless till 10^{hrs} after that overcast with Cirro-Stratus till 22^{hrs} when fog came on again. Air very dry at 2^{hrs}. Fog lay in valleys and on hills but breaking up into detached portions to Nth & Eth. At 8^{hrs} haze was visible to Wth which gradually spread all round obscuring view of hills on opposite side of Glen Nevis. Barometer rising rapidly in forenoon. Air very clear to Wth in early morning, Barra Head and Tobermory - Lights visible at 4^{hrs}.

Mr. Towell, Inspector of Telegraphs and Lineman were here today. Battery being renewed and Telegraph Instrument touched up generally.

1890

October 9th

174

Robinson Anemometer started a 9^h
 very thick mist all day.

October 12th

Mist till 14^h which sunk down to about
 3000 feet below Ben Nevis but passing over the
 hill top at times. Air dry for a few
 hours in the afternoon. At 20^h mist came on
 again

October 13th

Top clear occasionally in forenoon
 but thick fog lay over hills all round
 and rising to a considerable height above
 Ben Nevis. Air dry at 8^h

October 14th

Strong Southwesterly wind nearly all
 day but very squally since 17^h with
 rain sleet and snow. Barometer falling
 rapidly all day and temperature
 falling steadily till 18^h rising a little
 till 23^h but falling again since
 Robinson Anemometer fell at 19^h

15th October

at 5^h while observer was on the roof
 St Elmo's fire was ^{seen} on Crystal Anemometer
 for a few seconds only but not visible
 on any other object. Snowing very heavily
 all morning. Sun gleaming through the
 fog at 10^h & 11^h and at 14^h clear to Nth but
 hard packed strati fog on hills. Depth
 of snow measured at thermometer ladder 7 inches

1890

October 16th

175

Very squally North and Northerly winds all and Barometer pumping. Jof clear for a few minutes at 13^{hrs} when a Rainbow was seen snowing very heavily all day. The thermometer Bot was shifted at 13^{hrs} 20^m Dry Bulb 192660 Wet Bulb 192672 Maximum 188390 Minimum 138545 were put out. Height above snow 4 feet

October 17th

Fog or mist all day. Summit clearing occasionally at 8^{hrs} but sky overcast with Cirro-Stratus. Snow fell continuous till 14^{hrs} since then a very wetting mist has prevailed. Very squally winds all day and pretty heavy drift flying about in early morning. Depth of snow at thermometer ladder 9 inches

October 18th

Summit clear at 8^{hrs} but sky partly covered with Cirro Stratus till 18^{hrs} and almost cloudless since. Cirrus and Cirro Stratus above horizon to N^W and S^W almost all day. Fog in valleys and at times passing over Ben Nevis till 19^{hrs} since then fog only visible on hills to W^W & N^W. Air very dry since 21^{hrs} humidity about 45 per cent. A Halo but not well defined was seen at 15^{hrs} no measurements were got. Depth at snow gauge 7 inches

1890

October 19th

176

Sky almost cloudless till 3^{hrs} but overcast with cumulus till 9^{hrs} since then sky has been partly covered with cirrus and cirro stratus till 21^{hrs} and mist since. Haze in valleys and cirro stratus at horizon almost all day. Set cum fog lay over hills all round except to W^e and at 20^{hrs} fog was passing over the hill top air very dry humidity about 50 per cent

October 20th

Buzzling rain and squally North and northwesterly winds. Temperature was exceptionally high today for several hours the readings were over 40° and the maximum recorded 42° at 21^{hrs}. Snow disappearing very rapidly but there is still a deep wreath round the Observatory varying from 1 to 2 feet in depth

October 21st

Continuous mist till 15^{hrs} after which it sunk and covered all the lower hills to 4000 ft the rest of the day. Sky nearly overcast with cirrus and cirro stratus till 19^{hrs} and almost cloudless since except for a little cumulus at midnight. Dew forming on thermometer box at 23^{hrs}

October 22nd

Fog lay on hills all round to 4000 ft but sky half covered with cumulus till 3^{hrs} after which the fog rose and enveloped the summit clearing off at times and occasionally sunny intervals till 14^{hrs} but mist since — at 10^{hrs} a portion of a fog bow was seen on upper —

1890

October 22nd

surface of fog under Ben Nevis = { Radius 177
30° 21' 4"

Flare were also seen at 11^{hrs}

At midnight dry and wet Bull^{was} shifted from small Bot to large bot, but Maximum 117293 and minimum 116918^{was} put out.

23rd October

mist and heavy rain all day

October 24th

very heavy rain fell in the forenoon and some light showers of snow since 18^{hrs}

25th October

Fog till 11^{hrs} - Summit clear till 14^{hrs} but sky overcast and fog all round. Fog came on again and continued till 21^{hrs} but sky still covered with cirro stratus and fog passing occasionally. Heavy snow all day and temperature pretty low Minimum 19° 1

26th October

Summit clear at 2^{hrs} but sky nearly covered with cirro stratus - at 3^{hrs} sky was perfectly cloudless but detached cum fog lay on hills all round at 4^{hrs} sky was overcast with cumulus stratus and fog passing - and at 6^{hrs} sky was perfectly cloudless again, but fog came on again at 7^{hrs} and has been almost continuous since. Heavy snow fell all afternoon - Depth at Snow gauge 7 inches

A weasel was seen at 15^{hrs} passing between Iron cage and thermometer ladder and quite close to Observer who was at the thermometer Bot

1890

27th October

178

Fog or sky overcast or nearly so with Cumulus and fog passing at times. Heavy layers of fog lying over hills all round. Showers of snow fell at intervals throughout the day. Dry and Wet Bulb changed only at 23^{hrs}. Dry 192660 and Wet 192672 were put out October 28th

Summit clear at times and sky overcast with Cumulus till 6^{hrs} but fog or mist since - detached fog lay over hills all round - Showers of snow and sleet fell till 17^{hrs} heavy rain since

29th October

Summit clear at midnight but sky nearly covered with Cumulus or Scud. Fog all round and passing at times. Lunar Corona seen at midnight

October 30th

Sky overcast with Cumulus at 2^{hrs} & 3^{hrs} and fog passing. Fog or mist since

October 31

Continuous rain till 17^{hrs} and snow began to fall at 23^{hrs}. Today Mr J Duncan went down

9 strangers climbed Ben Nevis during October

November 1st

Fog clearing at times in forenoon.

Cyclone passing in afternoon - quick fall in barometer - southerly (moderate) gale - heavy rain at night.

Mr. Rankin arrived at Observatory today.

November 2nd

Heavy rain falling in early morning and snow in afternoon and at night.

November 3rd

Top clear for several hours in forenoon but sky overcast and continuous fog on lower hills.

Snow falling pretty heavily at night.

St. Elmo's Fire was seen at 2¹h.

A Lunar Corona was seen at 6h.

November 4th

Lunar Corona seen at 5h.

Top clear with fog passing at times, from 7^h till 16^h { At 11^h triggy ladder stand was put out; The Old Bon. thermometer was shifted into the small box, and min 138°533 was put out. }

A Raven was seen in the afternoon

November 5th

Summit enveloped till 15^h clear thereafter and sky cloudless till 22^h but overcast at 23^h + mid.

At 4h. it was mist that covered the summit and an icy deposit was forming on all surfaces temperature being 26.9.

A Glory having three red rings was seen at 16h.

November 6.

Thin mist, but very wet, on summit at 4h. depositing an icy crust to windward of things.

Summit enveloped all day, except at 8^h and 9^h and then the sky was overcast and there was fog on the other hills around.

Pretty stormy today: Barometer falling till 19h. ~~at~~ 17h. the barometer read 0.101 inch lower than at 16h.

The rain gauge was unworkable after 15h owing to the wind and drift. It was taken in and not put out again till midnight.

During the storm readings were taken of the thermometers in Tower storm-box, as well as ^{of those} in the usual screen on ladder stand, at 19^h, 20^h and midnight.

Fog crystals forming today

November 7th

Centre of storm past at between midnight 6^h and 1h today. Wind went round to NW. Barometer began rising briskly and temperature rose too, being 27.6 at midnight and 31.1 at 2^h.

Wind very squally and pretty strong all forenoon. causing too much drift for satisfactory working of rain gauge.

Another change in weather after 20h. Bar. began falling and wind backed to SW.

Temp. Clear from 11^h till 17^h and during some of this time the sky was cloudless.

Faint Aurora seen at 19^h.

Bow shifted at 17^h 20^m Dry 535541, wet 535542 were put out. Min. not changed. H938533 being left out.

The low door is blocked with snow, since 16^h yesterday

1890 November 9th

181

Summit clear from 2^h to 10^h. Sky Overcast:

Barometer rising slowly all day. Temperature rising in afternoon and at night: Wind NW - N - NE

Snowing all afternoon - and drifting a good deal.

Snow in heavy wreaths about the house - only 12 inches at Post.

November 10.

Stormy today. Wind E or ESE all day. force 5 to 8 in forenoon 6 to 10 in afternoon.

Sky clear, and fog only passing summit at times from 7^h till 13^h.

Very heavy drift at 15^h.

Some snow falling from 18^h to 21^h but there was no gauge out.

Peculiar unsteadiness in barometer all afternoon

— sudden falls at intervals followed by slow irregular rises — Best seen on Barograms.

Guide rope from tower to Thermometer box at night.

Readings taken of Storm-box as well as of ordinary box.

November 11

ESE Gale, force 8 to 11, till 2 pm, Wind continued from much the same direction during the rest of the day but with force below 6.

The barometer was falling irregularly, and pumping wildly, till 2 pm, but thereafter it rose rapidly.

Dense fog during storm - depositing brown fog crystals - a great crop on Tower and ladders.

There was no rain gauge out till 17^h but ^{apparently} a little snow was falling in forenoon and at 15 and 16^h.

Sky cloudless at midnight - fog around ^{below} and passing at times.

Note for hourly sheet, 13^h: — "Solid blocks of ice flying about."

November 12

Strong winds till 20h rising to a strong gale in evening. Direction SE or ESE till 20h. After this the wind veered to W. and fell to moderate or light forces.

Rain gauge was put out at 20h. Some snow was falling before this but owing to the high wind and drift rain gauge could not be worked satisfactorily.

Fog crystals forming today.

The low-door was in use part of the day but had to be stopped during the storm in afternoon.

November 13th

St Elmo's Fire seen brightly at 1^h and 4^h.

Snow falling almost all day.

Barometer rising but wind continuing W or SW throughout.

November 14th

Wind backed to SSE by 5h and to SE and ESE later in the forenoon, and from 10h till 14h blew a gale (force 9-11 max.)

Barometer falling rapidly from 9^h till 16^h, but rising after 17^h and wind veering to N. and falling in force.

Very heavy drift about midday, forming great mounds about the observatory and stopping the rain gauge measurements.

Depth of snow at 16h at snow post - 21 inches

November 15th

Barometer rising till 23^h. Wind northerly till 18h but backing gradually thereafter, being S. at midnight.

Heavy showers of snow at 10-11 and 12-13

Stewart came up today - staying overnight at the Observatory.

Box shifted after 9h. Dry 192660 Wet 192672 and Hum 138545 put out.

1890

183

November 16th

Top clear at 2^h 3^h & 4^h and Clearing at times in forenoon.

Barometer falling till 14^h with SE winds veering to SW. and, after barometer began to rise, to West and north.

Showers of snow fell in the afternoon.

Today Mr. A. L. Reck of Blue Hill Observatory U.S.A. visited this Observatory.

November 17th

Top clear from 2^h till 15^h - Mist thereafter.

Air dry in forenoon lowest humidity 57 percent - Detached fog on hills, and haze in valley.

Some Hard Str-cir on sky today.

Temperature above freezing point almost all afternoon. Heavy rain at night.

November 18th

Mist till 7^h. Top clear for rest of day except from 15 till 18^h and at midnight.

Air a little dry, while top clear.

Solar Halo seen at 9^h 10^h & 11^h and a Lunar Halo at 18^h and 19^h. At 11^h the following measurements were made by Stephanome.

Radius = $20^{\circ} 40' 48''$, = $20^{\circ} 20' 0''$, = $20^{\circ} 30' 12''$

Temperature high at night - above freezing point all day except at 8^h and 9^h.

Snow thawing.

Wind backed today, with a rising barometer, from North in early morning to SSW in afternoon.

Roof leaking badly today (18th) and yesterday

1892

184

November 19th

Temperature above freezing point except from 16^h till 19^h. From 3^h till 7^h it was between 40° and 41°.

Snow clearing. Depth reduced 6 inches today. Drizzle in forenoon. Snow showers in afternoon.

November 20th

Top clear at 10^h 11^h & 12^h but fog passing - Squally winds and rain at night -

Today Mr Omond returned to this Observatory and Mr Rankin went down to the Low Level -

November 21st

Quick fall of temperature at 8^h and 9^h Hail falling at the time - Snow showers in afternoon with some drift -

November 23rd

Thermometer Box shifted at 21^h - 33^m Dry 535541, Wet 535542, and Min 138533 put out. Height above snow not altered -

November 25th

Top clear of all severe passing fog from 9^h to 20^h but cum-fog on hills round Thermometer Base shifted at 14^h - 20^m Dry 192660, Wet 192672 and Min 138545 put out. Height above snow not altered -

November 26

at 1^h the temp was 23°-1 and small

drops of rain were falling = the top at the same time was covered with fog not mist.

Thermometer Box shifted at 14^h - 15^m Dry 535541.

Wet 535542 and Min 138533 put out = height above snow not altered. The sunset at 15^h - 53^m.

A double Lunar Corona was seen at 17^h.

Air very dry at night, sky cloudless and no fog in valleys.

Several Snow buntings have been flying about the hill top for the last few days, and today a weasel or stoat white in colour was seen.

November 27th Air very dry all day. Fog lay in the valleys to Erd and over Loch Lochy from 8^h till Noon. Haze gathered, thickest to Wrd, at night, and high cumulus clouds covered the sky.

November 29th Top clear from 20^h to 23^h but ~~for~~ sky overcast - Considerable drift all afternoon and at night - No rain gauge was out after 15^h but apparently no snow fell. The lower thermometer Box was put out at 20^h and duplicate readings taken all night.

November 30 Drift in early morning = no rain gauge out till 8^h.

No strangers climbed the hill in Nov. except McHatch.

December 2^d

at 22^h, and 23^h, a drizzle of small rain was falling covering everything with ice - the temperature at these times were 29.9 and 27.3 - at Midnight snow, small & hard frozen, was falling - This evening the large dust counter in tower was dismantled & the plug for holding counting plate packed up to send to Mr. Aitken -

December 3^d

Very heavy Northerly squalls all day - Fog varying rapidly in thickness most of the day, but at 9^h and 10^h it was mist, the ~~the~~ temperature at the time being 19.2 and 19.1 - Thermometer box shifted at 16^h 20^m Dry 192660, Wet 192672, and Min 138545 put out - Height above snow not altered -

December 4th

clear sky when seen, but fog & sand blowing over the hill top all day - Thermometer Box shifted at 18^h 20^m Dry 535541, Wet 535542 and Min 138533 put out - Height above snow not altered -

Today one of the Osberg horses came up with stores the road being almost clear of snow, though some difficulty was experienced from the ground being hard frozen all the way up -

The portable dust counter was sent down to the Low Level Obseq.

December 5th

Top cleared shortly before 22^h and an aurora, single arch no streamers, was visible all night - At midnight cum-fog was rising to E² Thermometer Box shifted at 23^h 20^m Dry 192660, Wet 192672 and Min 138545 put out. Height above ground not altered -

December 6th

The Aurora remained visible till 4^h after which it was lost in the Moon light - Fog gradually formed over the hills to E and S in early morning, and by 9^h was blowing over Ben Nevis also - It continued with scarcely any breaks all day -

December 8th

Today Mr Wm. Stewart came up to the Observatory & Mr James Miller went down to the Low Level Obseq.

December 9th

Top cleared about 16^h leaving sky cloudless, but haze & fog in the valleys and all round - The fog covered the top again before 22^h Thermometer Box shifted at 16^h 20^m Ds 535541, Wet 535542 and Min 138533 put out. Height above snow not altered -

~~November 10th~~
December 10th

Fog cleared off at 9^h but came on again at 10^h; Very thick haze all round and in valleys during the interval, and fog occasionally passing over the top -

Thermometer Box shifted after 9^h Dry
 192660 = Wet 192672 and Min 138545 put out.
 Height above snow not altered.

H.B.

December 11th Fog very thick most of the day, but occasionally breaking & letting glimpses of a clear sky above the sun. The fog crystals today were dry & beautifully feathery, and slightly brown in colour -

December 12th

Top clear from 4^h till Noon but most of the time thin fog passing, and dark haze to N and W. Detached fog lay also on the hills & in the valleys round. Sun rose at 8^h 45^m air clear to S^W after sunrise -

Thermometer Box shifted at 9^h 15^m Dry
 535541 = Wet 535542 and Min 138533 put out. Height above snow not altered.

December 13th

Top clear from 4^h to 20^h but haze topped by cumulus lay in the

valleys to about 4000 feet.

The sun rose at 8^h 45^m. A glory was seen at 9^h. At 10^h the air was clear to the ESE though the haze lay thickly elsewhere. Temperature rather unsteady and air occasionally very dry in the middle of the day.

December 14th

From 13^h to 16^h drizzling rain was falling, though the temperature ranged between 25.7 and 28.1, covering everything with ice.

For the last fortnight some snow buntings have been seen almost daily.

December 19th

Thermometer Box shifted at 4^h 25^m

Dry 192660 = Wet 192672 and Min 138545 put out. Height above snow not altered.

December 20th

Top cleared at 10^h but fog continued blowing over till 15^h and lay over the hills round at about 3500 feet ~~for~~ all the evening, thinning away except to SW[^] at 23^h. Fog blowing over again at midnight and Linnar corona seen.

Thermometer Box shifted at 16^h 20^m. Dry 535541 : Wet 535542 and Min 138533 put out. Height above snow not altered.

Today Wm Stewart went down to the Snow Level Observatory.

December 21st

Fog lay over the hills to W² in early morning, by 5^h it was covering all the hills round and by 7^h blowing over Ben Nevis also - It continued with only occasional clearances till 21^h but after that sank again lying as thin fog & haze in the valleys round -

Lunar Corona seen at 18^h

Thermometer Box shifted at 23^h 15^m Dry
192660 = Wet 192672 and Min 138545 put out.
Height above snow not altered -

Today Wm. Stewart returned to the Observatory -

December 22^h

At 1^h sky covered with heavy strips of cirrus or cirro-cum. in Noah's Ark form lying NNW & SSE. Haze & fog lay in the valleys till 5^h but after that fog covered Ben Nevis also - Drizzling rain & slight hail fell at night = temperature 27 to 29.

December 23rd

Wet Mist and drizzling rain covering everything with ice all forenoon, though the temp. never rose to the Freezing Point. after 20^h only thin fog on the hill top and sky hid by sand but no fog below -

Thermometer Box shifted at 20^h 20^m

Dry 535541 = Wet 535542 and Min 138533 put out. Height above snow not altered -

December 24th

Fog blowing over the hill top most of the day, but sky when seen generally clear above. At 10^h a glory and Fog-bow were seen - and at 11^h a glory - At 12^h a Lunar Corona -

Today the plug of the large Dust-counter (see Dec 2nd) was returned to the Observatory -

December 25th

Sky apparently clear but fog and sand blowing over the hill top all day - Lunar Corona seen at 19^h -

Thermometer Box shifted at 20^h 20^m Dry 192660 = Wet 192672 and Min 138545 put out. Height above snow not altered -

December 26th

Lunar corona seen at 1^h Thin fog blowing over the hill top till 6^h but sky clear above - Fog & Cumulus hanging about the hills round till Noon, but after that little or none till 23^h when a Cumulus bank gathered to E and fog blew over the top at Midnight - Hazy to W all afternoon - The ^{Sun} rose just before 9^h and set at 13^h 54^m - it went down behind the

most Eastealy hill of Mull -

Thermometer Box shifted at 7^h 20^m Dry

535541 = Wet 535542 and Min 138533 put
out. Height above snow not altered -

December 28th

at 23^h and Midnight the fog had
risen clear of the hill top hiding the sky but
leaving a clear view round = no fog below -

December 29th

No fog in valleys all morning, but thin
fog often blowing over the hill top, and after 15^h
almost continuous fog. From 10^h to 15^h a
a vertical ray or halo downwards
from Sun and passing into Glen Nevis
between observer & hills on South side
of Glen = most distinct at its lower
end. At 15^h it was noticed that a
few star shaped crystals of snow were falling -



In the afternoon a sound like
very distant thunder was heard, supposed
to be artillery practising at Inverness -
air very hazy all afternoon -

Thermometer Box shifted at 3^h 20^m Dry
192660 = Wet 192672 and Min 138545 put
out. Height above snow not altered -



December 30^d

Lunar Corona seen at several hours in early morning, formed on Sand and fog blowing over the hill top. Sky clear above this fog & Sand, when seen, all day and no fog below in the valleys -

December 31^d

Thermometer Box shifted at 1^h-15^m -

Dry 535541 = Wet 535542 and Min 138533 put out. Height above snow not altered -

Lunar Corona seen at 5^h 6^h and 7^h -

Fog blowing over the hill top but sky clear above and no fog in valleys till 4^h after that almost continuous fog, but sky still clear when seen. Very heavy squalls from the ESE all morning. At 9^h the ozone test paper was not found in Box: it had been blown away -

No strangers climbed Ben Nevis in December -

Instruments etc 1890

Barometer No 1385 was in use during the whole of 1890 - No 1252 being kept as a reserve instrument, the latter is supposed to have a trace of air in its vacuum -

The following Dry & Wet Bulbs were used -

Nos 192660 & 192672 : 192671 & 192677

(these are now only used in the Tower Screen)

up to June 4th 50850 & 50852 were used

occasionally but were then sent down to the

Low Level Observatory - Nos 535541 & 535542

(new instruments) have been ~~not~~ in use since

June 4th Max 117293 and Min 116918

were used in the large Screen in summer

and Mins 138533 and 138545 in the

Small Screens in winter -

Up to June 11th Midnight the thermometers were

placed in small Screens on ladder stand

No 2. as also after ~~November 4th 11th hours~~ ~~October 22nd Midnight~~

Between these dates the large Screen, old

clock-box, was in use except from Oct 16th - 14th to Oct 22nd Midn.

The usual 5 inch rain gauges, rain or snow pattern according to circumstances, were in use -

The Campbell Stokes Sunshine Recorder has been used all through the year.

Max Black Bull in vacuo No 186 has been used when possible, and for several months in summer Black Bull No 484108 — common thermometer in vacuo —

The Direction & Force of the wind has been estimated as usual on the roof at the Hourly Observations & the Robinson HC and crystal Direction anemometers used when practicable but the clock of the latter has been disconnected & serves as office clock.

On July 17th the Standard clock was sent to Ritchie & Son for further repairs. Since its return it has been kept at the Low Level. The Rainband has been estimated daily as usual with a direct vision spectioscope.

The Stephanome was employed for measuring glories, Halos, coronae etc as usual.

Several Photographs have been taken.

The Barograph has been used throughout the year.

The Thermograph was not used and in June 5th was sent down to the Low Level Station. The Depth of Snow was taken at Post A. except for a short while in October when it was taken near Sadler Stand No 2.

The telegraph instrument worked well - in the month of June the wire was extended to the Low Level Station - (see note on page 197)

The Gane test papers have been frequently blown away or bleached and the rain gauge measurements interrupted by drift - At 7^h on Jan'y 18th the Dry & wet Bulbs were not read, it being found impossible to keep the lantern alight in the heavy squalls blowing - With the above exceptions the record is complete, though the observation or part of it was occasionally a few minutes late -

On August 8th a doorway was cut in the SE side of upper story of Tower and an arrangement made by which a screen could be exposed there ~~to~~ in stormy weather - No use has been made of it yet, but preliminary trials show that at night in strong winds the error introduced by using it instead of the ordinary screen would never exceed half a degree -

On Feb'y 24th a portable Dust counter was brought up and on Dec 4th it was sent down to the Low Level

On June 5th a larger Dust counter was

erected in the middle room of Tower with pipes leading to the outer air at the NNW and SE sides -

On the evening of Jan'y 5th the telegraph cable was damaged during a thunderstorm and communication was not restored till the afternoon of the 10th -

The Staff of the Observatory consists of R. T. Omond, A. Rankin, J. Miller and since January 17th J. Nisbet. W. Wilson went down on Jan'y 1st - Mrs R. E. Mossman, J. Macdonald, Alex. Drysdale, J. Duncan and Wm. Stewart have taken the places of the Observers at various times = from August 16th to Sept 30 R. Crerar acted as telegraphist -

The Lightning Conductor was bent over during a severe gale on Jan'y 19th and is still leaning over to one side -

In future the Sunshine will be entered to local time and in decimals of a hour -

January 1st Top clear occasionally in afternoon but fog on the hills round and air saturated -

January 2nd Thick but dry fog till 17^h after which it sank down & gradually disappeared, but the night was too dark to see if any still lay among the hills -

Thermometer Box shifted at 19^h 15^m

Dry 192660 = Wet 192672 and Min 138545 put out height above snow not altered -

January 3rd Faint Lunar Halo seen at 2^h. Haze and detached masses of fog among the hills round all morning till 8^h = fog blinding over the hill top at 9^h and 10^h and continuous fog the rest of the day -

January 4th

Top clear and sky cloudless at 2^h and 3^h but heavy masses of cum-fog on hills round - Thermometer Box shifted at 2^h 20^m -

Dry 535541 = Wet 535542 and Min 138533 put out. Height above snow not altered - Rain gauge measurements very doubtful owing to drift. Strong Northerly squalls at night -

January 5

Thermometer Box shifted at 13^h 15^m Dry
 192660 : Wet 192672 and Min 138545 put out.
 Height above snow not altered -
 An Aurora, single arch no streamers, rather
 faint, seen at midnight.

January 6th

Sky clear till 7^h but after that over-
 cast with high cumulus till 13^h and fog
 till 22^h after that clear again -

Bana Head light was seen at ~~10~~ 5^h
 Haze & fog below in the valleys all morning
 and air saturated - Halo seen at 6^h
 The sun rose at 8^h 50^m

Star shaped crystals of snow about 10 inch diameter
 were falling at 14^h and at 16^h

Today Mrs R.E. Mossman and J. Miller
 came up the hill and Wm Stewart and
 G. Wislet went down -

Today a new stage for Dust counter
 was brought up, - glass with reflector below -

January 7th

Thermometer Box shifted at 13^h 20^m
 Dry 535541 : Wet 535542 and Min 138533
 put out - Height above snow not altered -
 Detached masses of fog hanging about the

Hills round all day and often covering Ben
Ben's also. The Sun sank into this fog
layer at 15^h 56^m

January 9th

Thermometer Box shifted at 3^h 15^m

Dy 192660 = Wet 192672 and Min 138545
put out. Height above snow not altered -
a glory and fog low were seen at 10^h
Fog gathered in the valleys early in the day
and gradually rose higher reaching the
summit by 17^h - but the sky was seen
through it all night -
The Sun set at 16^h 9^m

January 10th

Thermometer Box shifted at 10^h 15^m

Dy 535541 = Wet 535542 and Min 138533 put
out. Height above snow not altered -
Top clear from 9^h to 19^h but fog on the hills
round to 4000 feet till 13^h and cum fog on
hills to Wst after that -

January 11th

Rain fell all day - up to 17^h the
temp. was below freezing and every thing got
covered with hard ice about an inch thick -

January 12^d A snow hunting was seen in forenoon -
Mist and drizzling rain till 20^h after that sky
cloudless but mist level with the hill top all
around & blowing over occasionally -

January 13^h Hard icy fog crystals forming in early
morning - Mist or fog till 18^h a hail shower
between 18^h & 19^h and cloudy sky with fog hangs
about after that - Barometer pumping at night -
Thermometer Box shifted at 19^h - 20^m Dry
192660 = Wet 192672 and Min 138545 put out -
Height above snow not altered -

January 14^d Thin fog and apparently overcast, or nearly so,
sky, all day but no fog seen below in the valleys -

January 16^d Top clear occasionally but air never
dry - No fog apparently below -
Thermometer Box shifted at 12^h - 10^m Dry
535541 = Wet 535542 and Min 138533 put
out - Height above snow not altered -

January 17^d Thermometer Box shifted at 3^h - 15^m
Dry 192660 = Wet 192672 : Min 138545 put out -
Height above snow not altered -

An ^{seen} corona was, till 6^h - single arch rather faint, no streamers - Top clear in morning and sky cloudless, but fog lay ~~in~~ over the hills round to about 4000 feet and rose and covered Ben Nevis also in the afternoon - Solar Corona seen at 17^h

January 21st

This morning it was noticed that the snow extended to sea level - Top was clear for a few hours in forenoon but fog was hanging about the hills round - A Solar Corona was seen at 10^h - No rain gauge was out from 16^h to 22^h as the drift would have vitiated its readings - Thermometer Box shifted at

9^h 25^m Dry 535541 : Wet 535542 and Min 138533 put out. Height above snow not altered -

January 22nd

Considerable drift in forenoon No rain gauge ^{out} from 7^h to Midnight Top clear in afternoon but sky partly covered with cumulus & cirrus - Solar Halo seen from 18^h to 22^h - No fog in the valleys below. at 12^h 10^m the Thermometer Box was put one stage higher on stand, and at 17^h 15^m it was shifted - Dry 192660 : Wet 192672 and Min 138545 put out, height unchanged -

January 23^d

Heavy surface drift all day making the rain gauges almost useless - No gauge was out till after 16^h.

January 25^d

At 5^h the Rain gauge was found undercut & leaning over: the fall for that hour is interpolated. Sleet & hail mixed with snow fell at night.

January 27th. Thermometer box shifted at

3 hrs 33 mrs. Dry no 535341 wet 535342 ^{min 138533} put out height above snow not altered. Considerable surface drift all day. Today Mr Day came up the hill and Mr Omynd went down.

January 28^o. St. Elmos Fire was heard at 15 hours being identified by the usual hissing noise. Mr Miller who had the metallic holder of a pencil in his mouth felt faint electrical shocks. Heavy snow was falling at the time.

January 29 Thermometer box shifted at 5 hrs 30 minutes dry no 192660 wet no 192662 ^{min 138545} put out height above snow not altered. Sky clear but sky overcast from 4 to 8 hours. Air temperature about except at 6 hours when the humidity was 77%. Lunar halo at 5 AM strong southerly & south easterly gale force 3 to 5 from 7 to 13 hours. Snow fell after 11 AM.

January 31. A severe gale from the South-east sprang up in early morning reaching the strength of 11 at 7 hours. The observation at 7 hours

was 10 minutes late owing to observers lamp blowing out several times. Half-hourly & quarter hourly readings of the barometer were taken from 6 hours 30 minutes to 9 hours 30 minutes. Between 8 & 9 hours the barometer fell .148 inch. At 10 hours the gale moderated and at noon the wind had shifted to the SW with heavy snow.

February 1st Thermometer box shifted at 5 hrs 30 minutes dry 535341 wet 535342 min 138533 put out height above snow not altered. Box put one stage higher on ladder at 17 hours 25 minutes. Top clear from 5 to 8 hours but mist or fog all day. Lunar corona at 7 hours

February 3rd: Thermometer box put one stage down on ladder stand at 15 hours 10 min. The Zodiacal Light was seen at 19 hours. Fog till 17 hours then cloudless.

February 4th: Cloudless till 4 hours when mist came on this continued till 14 hours. When the fog sunk below the hill-top but covered all the surrounding hills. Upper sky covered with variable amounts of cirrus & cirro-stratus till 22 hours then fog again.

February 5. Mist till 9 AM when it sunk under the hill-top covering all the surrounding hills. Upper sky covered with variable amounts of cirrus & cirro-stratus till 18 hrs when mist again enveloped the hill-top. During the day the sun occasionally rose & covered the hill-top. At times lowest humidity 49% at 10 hours. A solar corona & fog were seen in the forenoon.

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February 7.th

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Drizzling rain fell at times though the temperature was below freezing point.

February 8.th Thermometer Boon shifted at 6 hrs 25 minutes dry no 192660 wet 192662 min no 535341 full out height above snow not altered

February 9.th Fog on hills to 4000 feet occasionally sunny & clearing over Benue at times. Sky clear except for a little cirro-cumulus & stratus

February 10.th The rain gauge values at 22 & 23 hours are interpolations there being so much icy drift that the gauge was rendered useless. The amount melted at 22 hours was .748 and at 23 hrs .556 .200 was allowed for each

February 11. Heavy rain fell till 17 hours & slight snow showers thereafter. The sky cleared for a short time about 20 hours showing an aurora to the NNW three arches no streamers. A faint lunar corona was visible at the same time. Fog came on again. At midnight sky was overcast with c-st

February 12^a

The aurora observed last night continued visible till 3 hours. Sky partly covered with cumulo-stratus till 5 hours when fog came on clearing at times. A clear coronor was seen at 13 hours

February 13th

Summit clear till 11^h = fog with showers of snow till 3pm and mist and drizzle in rain, but temperature $\frac{1}{2}$ below 32° for the rest of the day. Air very dry at 7^h and 8^h humidity being 39 and 41 % respectively.

Aurora seen in early morning.

Thermometer box shifted at 6^h 20^m. Dry bulb 538541 wet bulb 535542 and min. 138533 were put out. Height above snow not altered.

Today Mr. Raulin arrived at Observatory and Mr. Mossman went away.

February 14th

Temperature below 32° , but mist and drizzle forming ice on all surfaces all day.

February 15th

Mist till 8h with drizzle at times. Top clear for the rest of the day except for a few hours at night when fog prevailed. Fog or Detached Cumulus on hills and large in valleys. Motiless brown pieces of Cir-s (rare) seen to NE³ at 15^h.

Thermometer box shifted at 9^h 15^m Dry bulb

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192660 Wet-192672 and minimum 138545-207
were put out. Height not altered.

February 16th

Fog or mist all day, thick and forming snow
crystals in the forenoon. Gleams of sunshine
between 9^h and 11^h.

Feb 17th

Fog till 9^h, a little cirrus on sky at 10^h. but
clear and cloudless till 22^h. Fog all
round below to 4000 ft. rising at times to level
of summit and blowing over it, and after
22^h enveloping it continuously. During the
afternoon this fog was pouring down
into the Northern Corry all along from
pt. Gorge to Cairn Dearg.

Rapid rise of temperature in forenoon—
at 9^h it was $27^{\circ}8$, at noon $40^{\circ}4$ and at 15^h $40^{\circ}9$.
Air very dry at times. at 15^h the Humidity was
38 per cent.

A set of temperature readings was made
by sling thermometers. (1) on top, in fog, and in clear
air, (2) on way down to McLean's Sheep and
on way back and (3) on top of Tower. The
readings were highest on top of tower and
lowest in the fog. At times the top was
covered in fog when the top of tower was
quite clear of it. The readings at the
thermometer box varied very much during
the evening being high and rising when

1891 the top was clear, but low and falling 208
when the fog was on or passing.
Lunar Coronae were seen at times on
passing fog at 21^h and 22^h.

Black Bull (186) was put out at 13:50^h
on bracket stand on Post-A.

February 18th

Mist covered the summit till 9^h, but after
that hour it sank below level of top and
left the sky entirely cloudless during the
rest of the day. The mist sank to about
3000ft. and in the afternoon, began to
break up till after 19^h it was all gone,
and left haze in the valleys to about
2000ft.

The air was dry at and after 10^h the
lowest humidity being 44 percent at 10^h & 17^h.

The sun went down at 17^h 35^m.

Dark brown colour ~~under~~ sun all afternoon.
At 14^h 10^m the thermometer box was shifted
one step higher on ladder stand.

February 19th

Except for two small cumulus clouds that were to
be seen to W about 4000ft. above S.L. at 15^h there
was not a speck of cloud above or below Ben
all day, but thick haze was all around
below to 3000ft. in the early morning and to
4000ft. at night.

Temperature High and air dry all day - the
mean temperature for the day being 35.8 and the

mean humidity 67 per cent.

Brown colour around the sun today strongest - between sun and horizons

The Robinson anemometer was set a-going at 15^h.

February 20th

Air warm and dry all day. Thick haze below all around.

Some cirrus in sky from 5^h till 18^h but cloudless during the rest of the day.

February 21st

Cloudless but thick haze all around below till 9^h. fog till 18^h. top clear but sky overcast for the rest of the day.

Ice crystals - slightly brown - forming in afternoon.

The anemometer was stopped after 18^h.

A Lunar Halo was seen at 20^h - 22^h.

A Haze was seen on summit at midnight

Feb 22nd

Overcast sky till 7^h. mist till 16^h and overcast again till midnight.

Shower of snow at 7^h and 8^h and rain, pretty heavy at times, till after 16^h.

At 1^h the haze was thinning all around and rising being then up to the clouds apparently - there was no definite top to it as on the previous days.

Rather strong winds all day. force over 6 from 5^h till 11^h.

The Robinson anemometer was set a-going ~~at~~ at 14^h.

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February 23rd

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Top clear and air dry all day.
The mean temperature today was 37.3 and
the mean Humidity 64 per cent.

Haze all round reaching up to the clouds
and in afternoon showing peculiar bands
and streaks to S. of a green colour
having well defined cleanly cut upper
surfaces but no well marked lower surface.

Today there appeared to be a constant
downward motion of the clouds, the high
cirrus at one hour being a middle cirrus
at the next hour and a lower cloud
an hour afterwards.

The thermometer box was lowered one
step at 18^h.

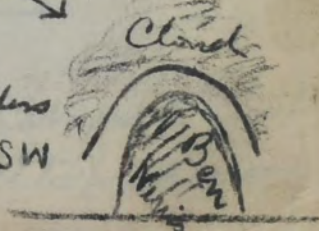
February 24th

Cloudy but air warm and dry (except at 4^h & 5^h)
all day. Mean temperature today 40.4 .

Thick haze below all round.

At 1^h the clouds were lowering and thickening
quickly, and at 2^h they were brushing all
the hills around, and at 3^h nothing could be
seen for cloud but the summit. The lower
surface of cloud seemed to be of the same
shape as Ben. but kept a little clear of it
as shown in sketch on margin.

The lower of three strata of clouds
at 14^h was (rare) Str. cir. and motionless
while the middle layer moved from SW
and the top one from WNW.



February 25th

Air dry all day. Temperature high all day but falling all afternoon. Mean for the day $35^{\circ}8$. No lower clouds today, but varying amounts of upper clouds on sky. In early morning there were some rare str-cir, and (at 3^h) patches of cum-cir that appeared to be motionless as regards position, but showed an internal drift of particles.

Thick haze all around

February 26th

Temperature lower today - the mean being $31^{\circ}3$. Air dry all day. Sky cloudy with upper clouds only. Thick haze all round below till 17^h; cloudless thereafter

The Zodiocal Light was seen at 20^h and a faint aurora at midnight. Haze was very thick at midnight - dark blue to N^o. Milky to Sth while there was a wonderful mistiness all around and above, and very faint flashes of light were seen to N^o above (and in) haze. Note at 11^h: 6⁰⁰ the thickest - this spell of fine weather.

Remarkable and very beautiful colours were observed before sunrise in the Eastern sky.

William Stewart and Robert MacDougall were up today with a horse. They managed to bring the horse up to the Observatory. the road being clear, except for a bit here and there, to the 2nd Gorge.

February 27th

Very thick haze all day - so thick at 2^h that nothing could be seen but the hilltop. all day

the haze was white on the light side of the Observer and dark blue on the opposite side. At 14^h there were haze streaks in the sky. Sky cloudless till after 22^h. but a little fog was passing at 20^h. This fog formed a skin of ice on the Black hills.

Except at 20^h the air was dry throughout. After 22^h. Clouds formed rapidly, almost close over summit in thin sheets of stratus. which showed a long fibrous streaky texture. These sheets of clouds moved quickly, but to SE^{ward} over the moor of Rannoch there was a thick heavy cloud that was quite motionless.

February 28th

Thick fog till 5^h am, clear but cloudy till 9^h and fog or mist thereafter.

Heavy show showers and some drift from 11^h till 15^h and very heavy rain at 16^h 17^h and 18^h. the total for these three hours alone being 1.102 inch. Owing to drift the amount of fall at 12^h was lost the rim of gauge being flush with surface of snow.

Brown fog crystals forming in morning and an icy covering on every thing in afternoon.

No stranger visited the Observatory during February

March 1st Top clear at the sky, cloudy then with two strata of cirrus both moving from NW⁵ and fog and haze in valleys. The fog was rising in great quantities and passing overhead. At and after 2^h top was enveloped in mist. Quick rise of temperature in morning and sudden fall at night. Heavy rain or drizzle all day.

The anemometer was working at and after 15^h.

March 2nd

Anemometer stopped after 1^h.

Steady fall in temperature during the day.

Measurements of snow today are doubtful owing to drift.

St. Elmo's Fire seen at 21^h on pencil tower and chimney.

March 3rd

Heavy drift all day. making measurements of snow doubtful and at times useless. At 16^h the gauge was taken in and was not put out again till 22^h.

St. Elmo's Fire was seen at 2^h

March 4th

Heavy drift at and after 17^h making measurements of amount of snow very doubtful. Drizzle and rain falling in forenoon and hail at 16^h. The hail was of three sizes. 1st small glassy hail quite round and transparent. 2nd larger hail — conical snow-hail with an icy glaze on outside. 3rd still larger hail showing the middle to be ~~and~~ the usual dry snow hail (conical) but having the outer surface covered all over with small round glassy particles like the 1st kind.

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March 4

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At 20^h dry bulb 192660 was broken, and another set of thermometers - dry 535541 and wet-535542 ~~and 535543~~ were put out.

March 5th

Hourly sheet blown away at 3^h.

Snowing heavily all day and drifting a good deal in early morning. making measurements of snow doubtful. St. Elms Fire seen at 21^h bright and strong. Snow falling heavily at the time - a mixture of soft flakey snow and dry hard snow hail.

March 6th

Steady fall in temperature today. Measurements of amount of snow doubtful owing to drift. Top clear at times after noon.

Thermometer box shifted at 14^h 10^m - Dry 535541 Wet-535542 after being cleared of snow were put out again along with min 138533. Box put one step higher on ladder stand.

March 7th

Top cleared at 6^h and remained clear for the rest of the day except for a little fog at 15^h.

Air dry after 6^h except from 15^h to 17^h - very dry at times - the humidity at 10^h being 20%. the dew point then being -19.4. At and after 16^h the temperature was below 10°. the minimum hourly reading being 8.0 and minimum registered 7.6.

At 14^h there were two layers of Cirrus - the lower from SW the upper from W.

Solar Halo and mock-sun seen at 17^h. Zodiacal light very bright at 20^h and 21^h. Aurora seen at 23^h and midnight - pretty bright at latter hour. Snow to sea land today.

Thermometer box shifted at 7^h 10^m N° 192677 mounted as a dry bulb Wet-192672 and minimum 138545 were put out.

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height above snow not altered.

The Black bulb was put out at 8^h on bracket. 215
stand on post A.March 8thVery cold all day - Mean temperature 8°
minimum - hourly reading 5.6, registered 5.1.Thin Scud at 6^h, Cloudy from noon till 17^h, Cloudless
during the rest of the day. but air saturated
or nearly so.Fog on lower hills most of the day and
some passing summit at times.Zodiacal Light seen at 20^h. and aurora at
1^h.March 9thThe registered minimum temperature today was 4.4
(read at 21^h) - lowest hourly reading 5.9.Air dry most of day - extremely so from 8^h till noon.

The mean dewpoint today is -2.6.

Aurora seen at and after 21^h - pretty brightly at 22^h and
midnight. at 22^h 20^m the highest point of aurora
was about 9° above horizon.Air exceedingly clear to S^h and SW^h in evening. Two dark
objects seen on horizon (through telescope) between SE of
Jura and Cantyre was supposed to be Ireland.The Hourly Black Bulb was put out at 23^h.March 10thThe Aurora continued visible till 3^h and it was again
seen faintly at 21^h.Fog and showers of snow from 11^h till 14^h.Air pretty dry after 19^h humidity falling to 41%.A Spirit thermometer was put out on roof on top of old box
(about level with surface) last night and today the index stood
at 0.1. Some readings were taken of a mercurial thermometer
placed alongside of minimum on roof.Some fine snow crystals falling today, and at 7^h some of these
were falling from a cloudless sky.

March 11th

Sky cloudless all day except for a little *fend* at 9^h. Fog on the hills in forenoon, but none in afternoon, but a ring of small Cumulus was all round in distance low near horizon. Air very dry in afternoon: at 15^h, humidity was 34 percent - Aurora seen faintly at 2^h.
Zodiacal light seen at 21^h and 22^h { Min on Wood (read at 15^h) 1.9.

March 12th

a little cum. at 16^h. Cloudless during the rest of the day. Air dry most of the day, exceedingly so at 22^h and 23^h the humidities there being 29 and 16 respectively.

Fog on hills to E. in forenoon - small cumulus all round in afternoon ~~at~~ about level of summit.

Trace of Aurora at 2^h. Bright Aurora at and after

20^h. Following are notes taken of it: -

21^h. Aurora-bright - no streamers - Two arches

22^h " " Short streamers. - (15° above horizon?)

23^h " Bright double arch extending from W to NE

no streamers. Height above horizon of highest part -

23 degrees (Per Stephanone measuring from Pole Star)

23^h 30^m Broke up into activity - innumerable bright streamers. (Green line in spectroscope)

23^h 45^m Began to flash - flashes moving from N to W to Zenith.

Midnight - Aurora bright and scattered over all

Nth sky up to Zenith. { Wind up to midnight
 Light Nth or none

Zodiacal light seen at 20^h.

Minimum on cotton wool (read at 14^h) - 0.1

March 13th

The Aurora continued visible till 4^h -

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The following are the notes taken of it:—

- 1st. Aurora flashing N and S (Steady S. wind) Could hear feeble fizzing on holding up pencil when standing near edge of Cliff. when the flashes were about their brightest and coming almost close overhead. Str streaks forming and vanishing to NW⁵ & W⁵.
- 2nd. Aurora not so bright, but still flashing.
- 3rd " faint and low behind stratus clouds.
- 4th " Almost gone - only a faint trace at N^m horizon.

(Several times during the night - some low but bright short auroral streamers appeared as if they were the nearest to Ben - and that the greater part of aurora could be seen ~~of~~ over their tops).

Sky cloudless almost all day, and air dry till after 22h. Thick haze below all round.

Minimum on cotton wool (read at 4^h) - 1.8

Today the first visitor of the season came up (Lt. Col. R. T. Innes. Royal Engineers)

March 14

Cloudy or overcast till 20^h. Fog thereafter. Thick haze below all around. At 16^h this haze rose higher than Ben - it had no level top. Fog on E. hills in forenoon and passing over summit at times. A Solar Halo was seen at 9^h.

Fog crystals forming at night.

Minimum on wool (read at 14^h) 9.2.

March 15th

Fog all day. At 3^h today the wind rose to a gale and blew hard all day. From 7^h till noon the wind force was over 10 at times 11-12.

The Raimongaze could not be worked, but till 21st it could not be determined owing to the drift.

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whether snow was falling or not.

Fog crystals were forming in early morning and apparently all day.

At 6^h the Black bulbs and minimum in ground were taken in.

March 16th

Rather squally winds and much drift all day. Rain gauge not working owing to drift in early morning.

March 17th

Squally all day. Rain gauge not working till 5^h owing to drift.

Thermometer box shifted at 23^h 15^m. Dry bulb 53.5 54.1 Wet 53.5 54.2 and min 13.8 5-33 were put out height not altered.

March 18th

Summit clear except at 21^h and 22^h. Sky cloudless from 2^h till 5^h but cloudy with light fogs during the rest of the day.

Haze all round below, and detached cum-fog on lower hills most of the day.

Solar Hatos seen at 15^h and Lunar Hatos at 20^h and mid^h. Between 14^h and 15^h a long band of cloud was ~~to~~ seen forming over Glennevis - forming rapidly at its under surface and vanishing as rapidly above.

Heaven coloured red below and blue above.

Hard thin sheets of ice - at (rare) on sky at 11^h.

Both Black bulbs were put out at 6^h.

March 19th

Top clear till 18^h - fog thereafter. Sky somewhat cloudy with high clouds that (in afternoon) were continually falling, thickening, and then vanishing a higher stratum forming above. Some of the Kew

near the sun at 15^h was variously coloured.
at the same time many thin bits of ice were seen
high to W.
Lunar Halo and "moon moon" seen at 3^h
Air very dry in forenoon - at 6^h humidity was 24.

March 20th

Rather equally NE^h winds with snow showers in
forenoon. Summit clear most of afternoon.

March 23rd

Snow falling most of the day with showers of
hail at noon and snow hail during the hours 20-21
At mid^l the Hurly Black Bull was taken in.

March 24th

The 1st observation was made at 1.5^m
Snow falling all day

March 25th

In early morning today and at times yesterday
the cloud on hill top felt like mist.

March 28th

Some needle shaped snow crystals falling
at 14^h.

Thermometer box shifted at 1.20^m Dry 192677 Wet 192672
and min 138545 were put out. Height above snow
not altered.

March 29th

Thermometer box shifted after 7^h Dry 535541, Wet
535542 and min: 138533 were put out. Height not
altered.

March 30th

Top clear all afternoon. Sky cloudless from
20^h to 22^h. An aurora was seen at 21^h & 22^h.

- one arch - bright - no streamers.

Thermometer Box shifted at 13^h Dry 192677 Wet 192672
and min 138545 were put out. Height not altered

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March 31st

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Sky nearly cloudless most of the day.

An aurora was seen at 4^h - flashing faintly.

Another was seen at 21^h, 22^h & 23^h. following are notes:-

At 21^h. Aurora bright - top half way to Pole star.

22^h. " not seen so well with passing fog but in clear intervals streamers were seen, also flashes a measurement of top of aurora (badly defined) to

Pole star gave $27^{\circ} 44'$, or about 29° high.

23^h. Aurora still bright when seen.

23^h 7^m clear - Aurora very high - several broken arches and bright flashes rising to Pole star. long streamers to NE.

23^h 12^m. Aurora broken up into very bright streamers and flashes reaching to near Zenith. (When flashes were brightest and rising highest observer fancied he heard a rustling noise.

In the afternoon ragged cum. clouds passing the sun had their edges narrowly and brightly colored.

at 20^h. stationary ragged cumulus clouds were forming to NNW^d a little above level of summit. These came on from S^d and S^d in afternoon.

One Stranger visited the observatory during March.

During the last three days of the month there were very deep wreaths of snow about the hill top.

The post (weather post) was entirely covered.

April 1

Fog clear at times throughout the day. Haze all round, which at 16^h became very thick - Visibility only extending across Glen Nevis. Brown fog crystals forming at 20^h.

Wind (ESE) rose to a moderate gale at 21^h and though a little snow was apparently falling no measurements could be got. At 14^h showers of snow were seen passing overhead gleaming in sunshine, but none falling on Ben.

April 2nd

E. or ESE Gale all day. Thick drift - no measurements of snow today owing to gale and drift.

Brown fog crystals forming all day.

April 3rd

Gale still continuing - at and after 21^h it was blowing force 11-12.

Tower storm box put out at 19^h 45^m but reading continued to be made in the usual box on ladder stand.

Brown fog crystals forming all day - not so brown as yesterday. At 23^h and midnight it was blowing too hard for the fog crystals to stand and the top of tower and chimney was cleared of them.

April 4th

Gale still continuing - Mean force for today being 10.0. Very heavy squalls between 23^h and midnight. At 15^h the fog crystals on

towers were 30 inches long - in the early morning there was none - the gale blowing them off as they were forming.

Some snow fell in afternoon but no measurements could be got owing to drift.

April 5th

Gale all day, but not so strong as yesterday mean force for today being 9.4.

Fog crystals forming rapidly all day.

April 6th

The gale continued till 9^h today and thereafter gradually fell in force.

At 15^h the fog crystals on Laddes Stand No 1 were measured and found to be 100 inches long.

Census schedule was filled this morning, but owing to the gale the Enumerator could not come up for it.

April 7th

Fog or overcast all forenoon. Summit clear in afternoon - cloudy till 21^h - cloudless thereafter. At and after 22^h a faint aurora was seen here to N.

Haze in distance in afternoon

April 8th

Top clear all day except at 2^h, and sky, cloudless most of the day. Air very dry at and after 22^h.

Detached fog on hills to N. NE. & E in forenoon. Solar corona seen at times on loose cold looking Cum. to SW at 14^h. also clouds variously coloured - colours hints mixed.

Aurora seen at and after 21^h at 22^h it was pretty bright and showed some streamers. A measurement by Stephenson gave 19° 51' as height above horizon of highest point at 22^h.

1891 At 20^h. peculiar bands were seen in the
sunset colours in Wⁿ sky - very like, as regards
position relative to colours and intensity, the atmospheric
bands in the spectrum on both sides of the
yellow.

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April 9th

Some cirrus on sky at and after 6^h in which
from 7^h till 18^h a solar halo was visible. This
halo was very bright at 17^h and at times then
there were traces of a second larger halo
concentric with the 22° one. At 18^h. the 22°
halo was very bright, with a faint mock sun visible
but no traces of an outer bow. Air dry all
day - very dry at times.

Last night Aurora continued visible till
3h today. At time it was pretty bright and
showed short bright streamers.

Wind of breeze all round today - very thick
to NW^d and N^d owing to a great deal of
heather burning in that direction.

At 4^h. and again at 20^h. the bands noted at 20^h
yesterday were seen today. They were also seen at 21^h.

Faint glimmer in Nⁿ sky at 22^h and 23^h
probably auroral. ~~Heather burning~~

April 10th

Spectrum colours and bands seen at 4^h - not
so strong as at 20^h last night.

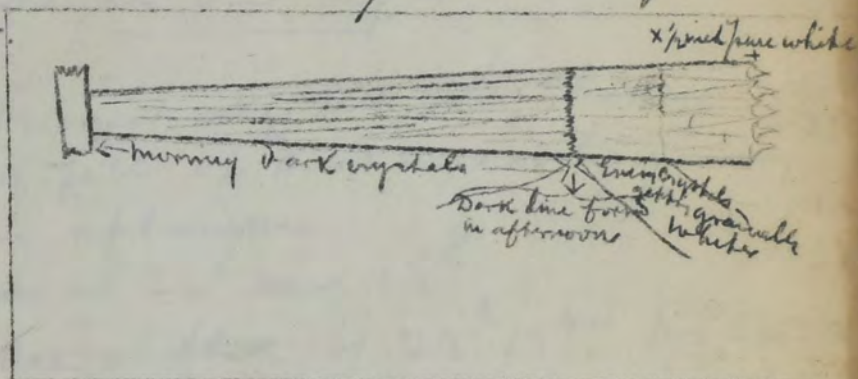
Fog gradually spread over the lower hills in
early morning and at and after 10^h. Covered Ben
Nevis also. Brown fog crystals forming today

April 11th

Summit clear from 11^h till 19^h. fog during
the rest of the day. The fog crystals were brown

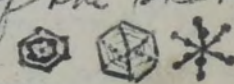
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all forenoon, while the top was clear the 224
 dust in the air was deposited on the fog
 crystals tipping them all jet black. at 23^h
 the formation of crystals was going on but
 they were quite white then. The days growth
 of crystals takes something like diagram
 at that time.
 Very thick haze
 all round all
 the time the top
 was clear.



April 12th Summit clear most of forenoon - fog in
 afternoon and fog crystals forming. at 3^h a
 faint Aurora was seen.
 at 5^h and 6^h Glories were seen on hill top
 with shadows of tower in centres.
 Strong SE winds at night.
 Black Bull taken in at 20^h.

April 13th

Fog all day except at 17^h and 20^h.
 Beautiful snow crystals falling in afternoon
 - not in any measurable quantity, only a few now
 and again - all perfect hexagons, some in stars
 and some in glassy disk shapes. Some or most
 had small mokes of dry snow attached to them
 and these mokes were always on one side only
 - not on both sides. These mokes arranged themselves
 symmetrically on the spines of the stars, and lines
 of the discs as in diagram. 
 Very thick haze seen all round when top was clear.

April 14th

Cloudy or overcast all day with fog at times
 Very thick haze all round below. Lunar Coronas

1891 seen at night - sometimes green at core. 225

April 15th

Snow began to fall at 6^h and continued for the rest of the day, in showers.

Mr. R. S. Morrison visited the Observatory today and stayed over night.

April 16th

Fog. or overcast sky till 20^h. Clearing thereafter. Heavy fall of snow in early morning and showers in afternoon.

Aurora seen at 22^h and 23^h.

Thermometer box shifted at 23^h 15^m. Dry 535541 Wet 535542 and min. 138533 were put out - height above snow not altered.

Ascending currents in NW Corry at night forming band overhead on which at midnight a lunar Corona yellow at centre was seen.

April 17th

Hazy bands and wavey lines in Eastern sky at 4^h.

almost cloudless all forenoon. Some Cumulus in afternoon and cloudless again after 20^h.

Fog below to N^o E^o and SE^o all forenoon. Very clear all round in afternoon.

Aurora seen at and after 22^h. The moonlight made it rather faint in appearance, but it gave a strong line in spectroscope.

Calm for almost so all afternoon.

April 18th

Sky clear all day. Cloudless till 10^h but fog on hills to N^o & E^o. Cumulus on sky and no fog below till 17^h. Cumulo-cirrus - a middle stratum of clouds - on sky at night.

Aurora seen at 1^h 2^h and a trace at 3^h, and again

1891 at 22^h - but this was doubtful owing to the moon light. 226
Sun-rise at 5^h 6^m.
Pink afterglow seen at 20^h.

April 19th

Cloudless or almost so all forenoon, Cloudy in afternoon.

Fog on hills to N^o + E^o in forenoon, none in afternoon. Ascending fog in Glen Nevis at 10^h.

Afterglow seen at 20^h.

April 20th

Sky cloudless till 6h. Cloudy or over-cast - for the rest of the day chiefly with heavy Cum-s shower-clouds. A Cum-s shower-cloud was seen at 4^h over the Monadh-lee hills - the only cloud to be seen. In the afternoon showers were seen all round, and at times fell on Ben Nevis also. One of these began at 9^h 14^m and lasted till 10^h 45^m. The snow that fell was snow-hail, white and conical, and during the time it lasted there was a strong display of electricity. Mr. Miller who was out all the time experienced a continuous and strong electrical discharge from his hands stick hat and hat while the shower lasted. A loud hissing noise was heard all the time.

21st April

Sky somewhat cloudy and fog passing at intervals all day. Shower clouds all round in afternoon, and slight showers of snow falling on summit - chiefly snow-hail. Haze bands in sky at 4^h.

April 22nd

Fog on hills and passing summit at times most of the day. A Lunar Corona was seen at midnight. Shower clouds all around in afternoon.

1891 April 23rd

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Cloudless till 10^h - increasing amounts of cum
till 16^h and almost overcast during rest of
day. Air very dry in forenoon - lowest
humidity 38% at 5^h.

Lunar coronas seen at 22^h, 23^h and mid-
at 2^h - peculiar greenish hazy appearance
in all SWth sky, from about 45° alt. to horizon and
from SSW to W. - about moon. Same noted at
3^h and also that there was more green colour
in NEth sky, (sunrise colours) than usual.
Dawn glow seen at 4^h 15^m.

April 24th Lunar corona seen at 3^h Fog hatching
top occasionally & overcast sky all day but no fog
in valleys - Today Mr Omond came up from
the Low Level Obs and Mr Rankin went down.
Sun set at 19^h 56^m -

April 25th Thick haze below in valleys all
day up to about or a little over the level
of hill top - Sky cloudless to horizon at night.

April 26th Sun rose at 4^h 44^m - Sky cloudy and
occasional fog on hill top but no fog in valleys and
air free from haze.

April 27th Top clear at times but air very hazy
all round -

1891.

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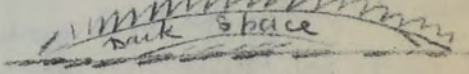
April 28th

Top clear occasionally no haze - Showers of snow all day. Thermometer Box shifted at 19^h 20^m. Dry 192677 = Wet 192672 put out. Min 138533 left out - Height above snow not altered -

15 Strangers climbed Ben Nevis in April -

May 4th

Thermometer Box shifted at 3^h 15^m Dry 535541 - Wet 535542 - Min 138545 put out - Height above snow not altered - Fog hanging about the hill but occasionally rising above forming clouds and leaving air clear, most of the day - after 20^h it cleared away & sky was cloudless - The Sun set at 20^h 9^m - Aurora seen at 23^h and Midnight - Brightest at 23^h

One sharp cut arch with  dark space below & apparently the top of a second arch just showing above horizon. Highest part of lower edge of upper arch about 70° above horizon.

May 5th

Sun rose at 4^h 21^m -

Thick haze all day & lum. and thin fog blowing over the hill top occasionally - Sky in forenoon

1891

about half covered with cirrus and cirro-stratus on which at 8^h a Halo with two Mock Suns was seen. at 12^h Halo was again seen. Three measurements of Radius to inside of halo gave - $22^{\circ}26'$: $22^{\circ}39'$: $22^{\circ}20'$ The snow that fell last week is still soft and heavy -

May 7^d Top clear from 12^h to 18^h Detached fog floating about but no low fog in valleys. Sky partly covered with cumulus and cum-cirrus -
Dry & Wet Bulbs shifted at 14^h-10^m Ds 192677 and Wet 192672 put out: box & Min not shifted -
Robinson Anemometer started at 14^h-30^m
This afternoon the snow at the first gorge was measured & was found to be overhanging 189 inches -

May 8^d Robinson anemometer was tied up after 1^h and started again after 12^h Mist blowing over the hill top till 18^h but sky cloudless after that, though fog still hanging about the hill -

May 9^d Detached masses of fog over the hills especially to N^w and blowing over Ben Nevis also occasionally till 13^h after that clear and no fog among the hills. Sky cloudy till 17^h but cloudless

after that - Northern horizon bright all night but no colonies in it at Midnight -

May 10th Sun rose at 4^h 7^m Earth shadow seen as usual - The sunrise colonies were bright at 2^h - The Sun set at 20^h 28^m Air clear in forenoon but haze round horizon in afternoon - No fog in valleys but patches of Cumulus at horizon though sky overhead was almost cloudless all day - Light to NWN probably Auroral at Midnight, but the whole northern sky was too bright to be sure -

May 11th Sun rose at 4^h 5^m Fog lay in the valleys to N- till 9^h and there was haze at horizon all day - a Solar Halo was seen most of the day -

May 12th After 3^h the Black Bull Mace was shifted one stage down on post A - and after 9^h the other Black Bull was also lowered - a set of comparative readings of them were taken between 9^h & 10^h The sun rose at 4^h 4^m Before rising, at about 4^h 2^m, a Sun Pillar rising vertically upwards was seen with a bright patch, or Mock Sun in it - a Solar Halo was seen at intervals during the day -

1891.

at 17^h fog began to gather on the hills to NW -
and from 19^h onwards it covered Ben Nevis also -

May 13^d Thermometer Box shifted one stage down
on ladder stand at 0^h 5^m Top clear for
a few hours in afternoon, but sky cloudy with
cumulus & scud and fog hanging about the hill -
Robinson Anemometer tied up after 22^h

May 16^d Thermometer Box shifted at 14^h 25^m Dry
535541 = Wet 535542 and Min 1385 33 put out -
Height above snow not altered -

May 17^d Top clear from 11^h to 17^h but sky mostly
cloudy and showers passing - Air very clear to SW -
at 15^h Jura, Islay, Ormsay all seen clearly -
Today the Black Bull Max went up to 155-3, probably
during a break in the clouds about Noon -
Heavy squalls from N and NE at night - Bone
paper blown away - No rain gauge out after 22^h
For the last few days the records of the Rain-
gauges have been very doubtful owing to drift -
The old snow on the hill top is hard & icy,
but what has fallen since the last thaw
is dry & powdery & blows about freely - the
snow door has been blocked several times -

May 18^d

Thermometer Box shifted at 8^h 10^m Dry
535541 : Wet 535542 and Min 138545 put out.
Height above snow not altered - The Dry and Wet
all the same as were out previously -

May 20^d

a shower of soft Hail - like St Elmo
hail - came on at 18^h and lasted about half
an hour giving a fall, melted, of 0-118 inch -

May 21^h

The Cumulus clouds in early morning
were small and high - middle clouds; but
detached masses of fog lay among the hills
round, & rose forming low Cumulus during
most of the day time - at 22^h it was
found that the stirrer of Dust Counter was
loose & no reading was got -

May 22^d

Sky clear except for some cumulus
& sand, but fog hanging about the hill and
occasional slight passing showers -

May 23^d

Fog blowing over till 5^h, fog among
hills round till 9^h and rising to form Cumulus
or fog on Ben Nevis after that - Haze all
round in afternoon -

1891

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May 24th

Haze and fog all round most of the day
Today the Dust counter was got into working order
again -

May 25th

Masses of Cum-fog blowing about the hills all
day but very clear views occasionally between
them -

May 26th

Showers of hard icy snow fell in afternoon
and the mist encrusted everything with ice -

May 28th

Snow fell in forenoon and there was
considerable drift - the snow door was blocked
all day - Thick fog in afternoon and fog-
enclaves forming freely -

May 30

Fog on summit only breaking occasionally
till 13^h after that clear, sky partly clouded and
horizon hazy but no fog in valleys - The
Northern horizon was red all night -

Thermometer Box shifted at 14^h 8^m Dry 192677 =
Wet 192672 and Min 138533 put out. Put
one stage higher on ladder stand -

May 31st

Robinson Anemometer started after 14^h

28 Strangers climbed Ben Nevis in May -

1891

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June 1st

at 0^h 5^m Thermometer Box put one stage lower on ladder stand = same instruments left out. Fog hanging about the hills & blowing over Ben Nevis also at times till 11^h. Haze at horizon all afternoon & night - at Solar halo was seen at 13^h and a Mock Sun at 19^h. The Sun set at 21^h 9^m.

June 2nd

Horizon hazy all day - Thin dry fog blowing over the hill top occasionally - Fog in valleys to NE in morning -

June 3rd

Air hazy and fog among the hills to Northward all day - Max Black Bull shifted one stage down on post A after 22^h. Sun set at 21^h 9^m.

June 4th

Thermometer Box put one stage down on ladder stand at 0^h 8^m. Same box and instruments left out. The Sun rose at 3^h 30^m. Air hazy and fog on hills to Northward all day - Detached fog among the hills to E and S in evening, & fog blowing over Ben Nevis also at midnight - The coming on of the fog was accompanied by a sharp fall of temperature -

Today one of the horses was up with stores, and the Lineman inspected & cleaned battery -

June 6th

Fog over hills to Northward at 3000 and in detached portions among other hills at same height till 8^h after which it disappeared, but the air was rather hazy all day - The sun rose at 3^h 27^m

June 7th Sun rose at 3^h 27^m above fog - at 3^h the foreglow was seen - Fog lay in the hills to N and E at about 3000 feet all morning up to 6^h From 7^h to Noon fog was all round & passing, but after that it was clear till 20^h for the rest of the night fog -

June 8th Fog till 7^h clear the rest of the day and no fog in valleys, but air rather hazy -

June 9th Sun rose at 3^h 18^m - at 3^h foreglow seen - Haze or light fog in valleys till Noon and fog among hills to N^o at night - Solar Halo seen at 17^h at 20^h the Sky hills were seen rising above a dense belt of fog -

June 10th Sun rose at 3^h 25^m over fog which covered all the hills except to SW^o all morning at about 4000 feet - The foreglow was seen at 3^h - The fog gradually broke up about Noon - Air rather hazy all day - the fog gathered on the hills to Northward again at night -

George Day was confined to bed all day with
rhumatism in his knee -

June 11th

Sun rose at 3^h 15^m Ben shadow very
 distinct after sunrise - Low fog, not above 2000
 feet, lay among the hills to NE till 7^h and
 detached layers to SW till noon - At 9^h the
 air was very clear to N^W the town of Inverness
 being visible - Haze in the valleys all day, and
 fog among the hills to N^W at night - The
 afterglow was seen at 22^h

Today Dr Geddie came up from Fort William
 to visit George Day -

June 12th

Sun rose at 3^h 18^m above fog which
 lay over the hills to N^W at about 3000 feet till
 till 6^h after which there was only detached
 fog in the valleys till evening when fog again
 gathered over the Atlantic - at 23^h and midnight
 fog was passing over Ben Nevis - For the
 last three days there has been a good deal
 of light haze -

June 13th

Mist and drizzle almost all
 day - Today Donald Cameron (boy) came up
 from Fort William to assist at the observatory
 as G. Day is still laid up -

1891.

June 14th at 17^h 5^m Dry 535541 = Wet 535542
 Max 117293 and Min 116918 were put out in
 Large Box - old clock box - The following
 duplicate readings were taken -

Hour	Small Box		Large Box		Difference Small above Large Box	
	Dry	Wet	Dry	Wet	Dry	Wet
18	35.9	35.9	35.7	35.7	0.2	0.2
19	35.2	35.2	35.0	35.0	.2	.2
20	34.8	34.8	34.5	34.5	.3	.3
21	34.0	34.0	33.8	33.8	.2	.2
22	32.9	32.9	32.6	32.7	.2 ³	.2
23	34.0	34.0	33.8	33.8	.2	.2
Mdt	34.1	34.1	34.0	34.0	.1	.1
15 th 1	34.1	34.1	33.8	33.8	.3	.3
2	34.5	34.5	34.1	34.1	.3 ⁴	.3 ⁴
3	34.2	34.2	34.0	34.0	.2	.2
4	34.3	34.3	34.0	34.0	.3	.3

up to Midnight the Small Box readings were
 entered on Daily Sheet, but at and after
 1^h on 15th the Large Box readings -

June 15th after 4^h Dry 192677 & Wet 192672 were
 taken in from Small Box - One shifted to
 Large Box at 9^h Mist till 23^h clear
 shy but fog over hills round at Midnight -
 Today Donald Cameron (Boy) went down -

1891

June 16th Top clear at 1^h and at 19^h but fog on both occasions over hills round and passing across Summit of Ben Nevis also -

Today Mr Mackenzie of the Imperial Hotel Fort William came up & opened the Hotel on Summit -

June 19th Mist & fog till 15^h after which it sank down leaving sky clear except for a little Cirrus moving from WSW. It lay over the hills round till 21^h but after that broke up & dissipated; but haze & streaks of fog lay among the hills, especially to N^w all night. Sun set at 9^h 26^m.

Today James Dunley came up to the observatory: he had been detained a day in Fort William by stormy weather -

June 20th Sun rose at 3^h 15^m above hill top: dark red colour on rising: no green flash ~~seen~~ Air hazy all day: thickest towards evening. Low streaks of fog in valleys & over water, including Upper Lochiel till 7^h. In early morning the haze was distinctly low down, not rising above 4000 feet, but during the day & at night it extended far above the height of Ben Nevis -

June 21st The foreglow was seen at 3^h - The Sun was not seen till 3^h 35^m owing to the thick haze which filled the air to a considerable height above the level of Ben Meris all day -

June 22nd Sun rose at 3^h 15^m above hills - at 3^h the foreglow was seen - Fog in valleys to NE from 5^h to 7^h - no fog below during the rest of the day, but haze at horizon -

June 23rd Sun rose at 3^h 15^m - Fog lay in the valleys to Northward as far as Loch Lochy till 9^h but after that dispersed - Air rather hazy all day - The afterglow was seen at 22^h - Fog gathered again in valleys to N^W at night - Strong squally Easterly winds at night -

June 26th Heavy rain came on suddenly at about 11^h 30^m and continued to fall heavily till nearly 15^h - Three quarters of an inch being recorded during that time -

June 27th Fog most of the day but when clear masses of cum-fog and haze on hills round Solar Halo seen at ~~18~~ 18^h Three measurements of radius gave 21°-22' = 22°-2' and 21°-53' Mean 21°-46'.

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