1830. März 11.	+ 0,47
— 15.	0,29
— 23.	0,78
— 29.	0,68
April 4.	0,27
— 8.	0,82
— 18.	0,57
— 25.	0,56
Jun. 4.	0,88
— 5.	1,02
— 13.	0,97
— 21.	0,84
— 23.	1,03
— 28.	1,21
Julius 1.	0,93
— 5.	1,00
— 6.	1,33
— 10.	0,85
— 14.	1,33
— 27.	1,23
August 8.	1,32
— 14.	1,30
— 22.	1,01
— 27.	1,22
— 30.	1,27
Sept. 7.	1,24
— 15.	1,18
— 20.	1,29
— 24.	1,09
Octbr. 1.	0,87
— 8.	0,89
— 12.	1,25

1830. Octbr. 21.	+ 1,10
Nov. 6.	1,09
— 11.	0,96
— 21.	0,96

Herr *Thomas Clausen* in München hat den Gang einer ähnlichen Pendeluhr, wie folgt, beobachtet:

1829. Jun. 6.	+ 0,29
— 13.	0,29
— 20.	0,30
Jul. 7.	0,37
— 13.	0,42
— 24.	0,27
— 26.	0,40

Die Ausführung des Pendels ist, wie man sie aus dem *Utzschneiderschen* Institute erwarten kann, vortreflich, und möchte schwer in gleicher Vollkommenheit von einem Uhrmacher zu erlangen seyn.

Mir scheint, um das vorhergehende in ein kurzes Urtheil zu ziehen, das *Mahlersche* Pendel eines der vorzüglichsten jetzt bekannten Compensationspendel zu seyn, und es möchte wenig zu wünschen übrig lassen, wenn es dem talentvollen Künstler gefallen sollte ihm, statt der Schneide, die Aufhängung an der Feder zu geben. Nach den bisherigen übereinstimmenden Erfahrungen der ersten Künstler ist nur die Federaufhängung geeignet den guten Gang einer Pendeluhr auf längere Zeit zu erhalten, und die Schneide, die auf den ersten Blick soviel Vorzüge zu haben scheint, führt bald Unregelmäßigkeiten ein, die, wenn man nicht entweder die Schneide neu anschleift, oder die Unterlage neu polirt, in einem starken Verhältnisse zunehmen.

S.

Schreiben des Herrn Professors und Ritters *Moll* aus Utrecht an den Herausgeber.

Utrecht 1831. Jan. 9.

My dear Sir

The beautiful appearance of the Aurora Borealis on the 7th instant, has undoubtedly been observed by many of your correspondents, and we are likely to find in the next numbers of your *Nachrichten*, a collection of all the observations of this interesting phenomenon. To these I shall be happy to contribute my mite, and as such I hope that this communication will not be unacceptable.

I was in the country, without any instruments or means of observation, save my eyes. The weather frosty,

thermometer about 26° F., the sky very clear, more so indeed than is usual in this cloudy country, Wind S. E. with a very light breeze. At 6 o'clock P. M. I was suddenly called out to witness the singular appearance of the heavens. A beautiful belt of white light sprung up from the east north east, and passing nearly through the zenith, descended towards the horizon, on the opposite point of the compass. This belt or zone was nearly uniform in width, its light was vivid but tranquil: it passed a little to the northward of the Pleiads. Shortly after a similar belt began to form in three different places, two branches shot up

from the opposite points of the horizon and one forming in or near the zenith, extended gradually towards the two others, and uniting with them, formed a second luminous arch, nearly parallel with the first, being more inwardly situated towards the pole. Both belts did not subsist long, perhaps a few minutes, the first or outward Zone vanishing gradually before the other. As the view of the north part of the horizon was obstructed by buildings, I ran to the heath where no such impediments existed, and remained there a considerable time, wholly absorbed in the contemplation of a phenomenon so sublime and so new. The luminous circle of which I recollected to have read the description in *Mairan's* et *Van Swinden's* writings on Aurora Borealis, was very strikingly visible in the north west part of the heavens. I should have rather called it a circular segment than a luminous circle. The cord of this segment was the horizon, it was very brightly luminous, and still so transparent that the stars were plainly visible through it. The numerous stars of the Swan, were glittering in this luminous orb, and α Lyrae, then lowering towards the horizon, nearly occupied its center. Its outward boundary, towards the north nearly reached the three stars ϵ , ζ , η of the great bear. A dark central spot in this luminous disk is frequently mentioned by writers on the phenomenon, but I could not distinguish any symptom of it. After remaining about half an hour in a state of tranquillity, rays of light sprang up all at once, as from the center of the luminous disk. The light of these rays was very vivid and extending nearly to the stars of Cassiopee which now occupied the zenith. Very strong corruscations were observable in these rays; the whole space of the heavens between the luminous disk in the N. W. being filled as it were with a nebulous but very thin and transparent mass of light, through which stars continued visible. The colour of this light was continually changing, with successive hues of blue, violaceous and rosaceous light, singularly and beautifully contrasting with the steady dark colour of that part of the heavens where Orion and Procyon were shining with all their majestic lustre. The utmost boundary to which the light extended were α and γ Orionis, beyond these the sky was dark and the starlight very vivid. At length that striking phenomenon of the Aurora Borealis, which is sometimes called the pavillion, and which with more propriety might be termed the canopy was exhibited. From the zenith several Zones of corruscating light extended towards the points of the horizon containing the East, North and West, but none more to the southward, forming thus a semi canopy of splendid and varying light, the vertex of which was in the zenith. This sublime appearance was

visible only a few moments. Several times afterwards, the same luminous belt, was attempting as it were, to form itself a new. In one of these attempts a mass of white light, rising from the north East, travelled with great rapidity through that part of the heavens, which had formerly been occupied by the first belt. Its fore part was of a round obtuse form, ending in a sort of long changeable, ensiform tail, about of this figure

Its appearance cannot be better describes but in the words of *Lucanus*:

Ignota viderunt obscurae sidera noctes:

Ardentemque polum flammis; coeloque volantes

Obliquas per inane faces:

Nearly about ten, the corruscations and emissions of vivid light had ceased, but the luminous arch continued in that direction towards which the needle points, shedding a sufficient light to make my path on the brown heath clearly visible. The next day, the 8th, the weather was overcast, thawing and snowing, and nothing more was discernible, except that the northern region of the sky was perhaps a little less dark than the other parts.

I only once, saw a phenomenon approaching to the splendid illumination which I have now witnessed, it was the luminous arch observed in 1828 at Chesfield in Hertfordshire with Capt. *Kater*, and of which an account has been given in your *Nachrichten* and else where.

During my stay in your vicinity this last summer, we had some conversation about the real value of the Kilogramme expressed in British Imperial Troy weight. You are aware that each of the Governments who sent Commissioners to the Committee of weights and measures in Paris were presented with a Kilogramme and a meter, by the french Government, and that a similar present was made to each of the Commissioners. These weights and measures were fabricated under the eyes of the united Commission, and marked with their particular stamp, after being previously examined, it is said with great care. The Kilogramme, the meter of the late Mr. *Van Swinden* are now in my hands, as also that Copy of the old dutch Troy weight, on which the comparison of dutch Troy, and metric weight was made in Paris, by our Commissioners MM. *Van Swinden* et *Aeneas* with Mr. *Lefevre Gineau*. By means of a pair of scales and weights of *Robinson*, similar to yours, I have compared *Van Swinden's* Kilogramme and several standards of the same weight with the English Troy weights of *Robinson*, and I am very sorry to say that the

result has left me in an entire darkness as to the real value of the Kilogramme. I need scarcely say, that in using the scales, I constantly employed *Borda's* method.

British Imp.
Troy grains.

A mean of several experiments on <i>Van Swinden's</i>	
Kilog. gave	15432,295
A Kilogramme modele made by <i>Fortin</i> and belonging to Government	
	15432,752
A Kilogramme modele made by <i>Gandolfe</i> , balancier de la monnaie de Paris, and sent during the french occupation of this country by the Parisian Mint-administration to the Mint at Utrecht	
	15432,730
Another Kilogramme by the same artist, and also belonging to the Mint of Utrecht	
	15433,752
One Kilogramme made by <i>Nagel</i> , balance maker at Amsterdam, and serving as standard in the Mint	
	15432,920
Another one, made as a Standard for the Royal Institute of Holland	
	15432,985
Another one, by the same in my possession	
	15433,420
Another also said to be a standard	
	15434,91
But Mr. <i>Mathieu</i> , in the annuaire du Bureau des longitudes calculates the value of the Kilog. in British Imperial Troy	
	15438,355
And Mr. <i>Kelly</i> concludes from actual experiments on a Standard Kilogramme	
	15433,

From all this I conclude that I am quite ignorant of the real value of the metrical weight.

M. M. Van Swinden, Aeneae and Lefevre Gineau compared in Paris, the identical Standard of the dutch Troy weight, now in my possession, with the original Kilog. They found the pound Dutch Troy aqual to 492,16772. I weighed, very repeatedly both the dutch Troy pound, and the Kilog. of *Van Swinden* in english Troy grains of *Robinson*, by these means I found the dutch Troy weight equal to 492,14908!!! I see no possibility of explaining this enormous difference but by supposing that the original Kilogramme, which they had in Paris, was different from *Van Swinden's*.

In order to acquire some additional evidence of the accuracy of *Robinson's* British Imperial Troy, I procured a copy of the Imperial Troy pound from Mr. *Bate*, who, as you well know, made the standards of the new British weights and measures. I found by several ponderations, the weight of the Mr. *Bate's* pound to be 5759,935 of *Robinson's* grains.

In 1818 the Administration of the Mint in this country obtained from the Administration of the English Mint in London, two copies of the British Troy pound = 5760 Grains, from His Majesty's Mint; I examined both copies, and one of them is actually in my possession. They are of unequal weight and very different from 5760 Grains of *Robinson*, or from Mr. *Bate's* Troy pounds. One of them kept in the Mint here weighs 5758,57 of *Robinson's* grains, the other in my possession 5758,40 gr.

I forgot to mention that the dutch pound Troy weighs 7594,975. You will, of course, observe that the Dutch pound Troy is of 16 oz.

M o l l.

Astronomical Observations made at the Observatory on the Cantonhill, Edinburgh.

Continued from Astron. Nachrichten Nr. 176.

(Von Herrn *Th. Henderson* unter dem 30^{sten} Novbr. 1830 an den Herausgeber gesandt.)

Observed Transits of the Moon and Planets over the Meridian.

Moon and Stars nearly in her parallel.

Date 1830.		No. of Wire's.	True Sidereal time.	Corr. of Berlin. Ephem.	Date 1830.		No. of Wire's.	True Sidereal time.	Corr. of Berlin. Ephem.
			^h ['] ["]					^h ['] ["]	
March 4	o Geminorum	5	6 58 37,62		April 2	Moon 1 Limb	5	8 55 46,39	— 0,40
	51 ———	5	7 3 37,15		6	(213) Virg.	5	11 52 21,29	
	λ ———	5	7 8 19,96			(230) ———	5	11 57 19,54	
	Moon 1 Limb	5	7 25 36,98	— 0,67		Moon 1 Limb	5	12 8 45,03	— 0,10
5	1 Cancri	5	7 47 21,11			γ' Virginis	3	12 33 4,70	
	r ———	5	7 51 49,81		May 2	d Leonis	5	10 51 48,02	
	s ———	5	7 59 13,19			Moon 1 Limb	5	11 7 0,09	— 0,59
	Moon 1 Limb	5	8 19 40,00	— 0,29		80 Leonis	5	11 17 7,02	
						b Virginis	5	11 51 16,05	