

It lived with me about a Fortnight, but I could never perceive that it beat, after it was confin'd in the Box.

II. *Observations of the Eclipses of the first Satellite of Jupiter, communicated by his Excellency William Burnet, Esq; Governor of New York, F. R. S.*

These Observations were made in the Fort of *New York*, for determining the Longitude of that Place by us,

William Burnet, Cadwallader Colden, James Alexander, and calculated by Cadwallader Colden.

The Latitude of the Fort, was formerly determin'd to be $40^{\circ} 40'$.

August the 9th, 1723.

T IME of Emerfion at <i>London</i> , according to Mr. <i>Pound's</i> Tables,	H.	?	''
reduced to apparent Time	16	09	25
Time as it was feen at <i>New York</i>	11	10	43
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Difference of Meridians	4	58	42

I neglected to write down the Altitudes which were taken of the Sun, for correcting the Clock.

August

August the 25th.

Altitude of the Sun's Upper Limb.	Time by the Clock,		Time by Calculat.	
	°	' "	H.	' "
Sun's Declin. } 49 30 00			10 17 52	10 17 28
6° 55' } 51 13 30			10 33 10	10 32 8
<i>Aug.</i> 26. Sun's Declin. } 46 24 00			9 57 40	9 56 25
6° 33' } 47 50 00			10 8 22	10 6 57

	H.	'	"
Time of Emerfion by Mr. <i>Pound's</i> Tables	14	31	25
Equation of Time to be added	00	01	22
	<hr/>		
	14	32	47
Time observ'd by the Clock	09	35	14
The fame corrected	09	34	14
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The Difference of Meridians	04	58	33

This I look upon as the moft diftinct and beft Obfer-
vation.

September the 10th.

Altitude of the Sun's Upper Limb.	Time by the Clock,		Time by Calculat.	
	°	' "	H.	' "
Sun's Declin. } 33 21			09 01 00	09 00 16
49' } 34 06			09 06 01	09 04 49
<i>Sept.</i> 17th Sun's Declin. } 17 17			04 21 40	04 21 44
1° 54' } 15 15			04 33 05	04 32 47

Time

Time of Emerfion by the Clock <i>Septem-</i>	H.	'	"
<i>ber</i> 10th	08	00	10
Time of Emerfion by Mr. <i>Pound's</i> Tables	12	50	36
Equation of Time to be added	00	06	54
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Corrected Time at <i>New York</i>	12	57	30
	07	59	08
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Difference of Meridians	04	58	22

June 26th, 1724.

Altitude of the Sun's Upper Limb.	Time by the Clock.	Time by Calculat.
° ' "	H. ' "	H. ' "
<i>June</i> 20th, { 56 44	09 48 03	09 43 37
Sun's Declin. { 60 27	10 09 40	10 05 05
23 . 7		
<i>June</i> 27th, { 63 31	10 27 43	10 27 05
Sun's Declin. { 65 21	10 40 00	10 39 27
22 . 26.		

<i>June</i> the 26th, Time of Immerfion by	H.	'	"
the Clock	11	41	12
Time of Immerfion by Mr. <i>Pound's</i> Tables	16	43	02
Equation of Time to be fubtracted	00	04	26
	<hr/>		
Time at <i>New York</i> corrected	16	38	36
	11	40	15
	<hr/>		
Difference of Meridians	04	58	21

The Mean of all thefe Observations is 4^h 58' 30'' which agrees to 3'' with that Obfervation, which I thought the moft exact, and therefore the Longitude of *New York*, is nearly 74° 57' 30'' West from *Lon-*
don.

The

The Variation of the Magnetick Needle was observ'd, this Year, to be $7^{\circ} 20'$ West. *Philip Wells*, Surveyor General of this Province, in the Year 1686, observ'd it to be $8^{\circ} 45'$; by which, it appears to decrease about $1^{\circ} 25'$ in 38 Years, or a little more than two Minutes in a Year.

III. *A New Contrivance for taking Levels, by the Reverend John Theophilus Desaguliers, L. L. D.*
R. S. S.

THAT the Air Thermometer is also a Barometer, has been observ'd long ago; and, because the Liquor in it will rise and fall, as well by the Change of the Weight of the Air, as by the Air's Rarefaction by Heat and Cold, this Instrument has no longer been made use of as a Thermometer, and, in its stead, Spirit of Wine Thermometers, hermetically seal'd, have been us'd ever since.

But, because the Errors of the Air Thermometer (or its Difference from the Spirit Thermometer) depend only upon the Change of the Weight of the Atmosphere from what it was, when the two Thermometers were set at the same Degree of their respective Scales; the late Dr. *Hook* contriv'd an Instrument, that he call'd a Marine Barometer, made of a Combination of the two abovemention'd Thermometers; in such Manner, that a third Scale being made use of, to observe the Difference of the two Thermometers, thereby the Change of the Air's Gravity, and consequently Storms, Rains, and fair Weather, might be foretold at Sea, where the Quicksilver Barometer becomes useles by the shaking of the Ship.