Tab. 2. F. *A Spider hanging on the Branch of a Tree, with its Head turned against the Wind, and spinning out its Thread, 'till it finds that it adheres to some Body, (as to the Wall here reprefented) by which kind of Bridge it passes over Rivers,* &c.

G. *A Spider having broke the first Thread, by which it hung, and let out several others, is carried by the Wind, and floats in the Air with its Legs extended.*

II. *An Account of the Moon's Eclipse,* February 2. 170$\frac{2}{1}$. *observed at* Streatham *near* London, *and compared with the Calculation.* By the Rev. Mr H. Creffener, *M. A. Fellow of the Royal Society.*

IN the laft Lunar Eclipfe, on the fecond of *February* 1709-10. the time of the end (which was what a- lone the want of a proper *Apparatus* and a favourable Skie would give me leave exactly to determine) I found to be the fame (with but a very inconfiderable Diffe· rence) which the Calculation, according to our moft Learned *Prefidents* admirable Theory, promis'd me to expect.

There being therefore no Examples of any Calcula· tion (that I know of) according to that Theory, nor of the Theory's Agreement with Obfervation yet made Publick ; I thought it proper to offer this one to this Learned Society's Perufal, that the exact confent with Obfervation in this, may prompt fome of them to try the like in others. I have added the Calculation from the famous Mr. *Flamfteed's* Tables, according to *Horrox's* Theory,

Theory, as I find them publifh'd in the Ingenious Mr. *Whifton*'s Aftronomical Lectures, with the *Radix*'s of the Mean Motions, corrected according to their firft Authors later Obfervations, which are the fame with thofe affum'd in Sir *Ifaac Newton*'s Theory,

By comparing thefe two Calculations we may obferve, that tho' moft of the additional Equations in Sir *Ifaac Newton*'s Theory be very fmall in this Situation of the Moon, yet they all confpire fo as to make its Place confiderably more agreeable to Obfervation, than thofe of *Horrox*'s Syftem.

The Obfervation was made at *Streatham*, about fix Miles near direct South of *London*, with a very good Eight foot Telefcope. To correct the Clock, (for want of an Inftrument,) I carried with me next Day two Watches, that were before adjufted to the Clock, and compar'd them with Mr. *Flamfteed*'s at the Royal Obfervatory, having firft noted its Error by an Obfervation of the Sun's Tranfit of the Meridian his Affiftant communicated to me : Upon my return, I found my Watches ftill to agree together, and to my Clock, which prov'd them to have gone true, and gave me the exact Error of my Clock, and the true time at Obfervation.

Mr. *Flamfteed* has fince been pleafed to acquaint me, that by his Obfervation of the Meridional Tranfit of the *Lyons Heart* during the Eclipfe, his Clock needed a yet further Correction of one Minute, which I have here accounted for.

17$\frac{02}{10}$. *Feb.*

	D.	H.	M.	Sec.
The Mean Time of the Mean Oppofition	2	4	9	42
The Mean Time of the True Oppofition	2	10	54	48
At which the True Place of the Sun is	10	24	55	50
And its Æquation to be added.				

The

The Place of the Moon at this Time, from Sir Iſaac
Newton's *Theory.*

	S.	D.	′	″
Mean Motion of the Moon	4	26	57	37
Annual Æquation Subtr.			8	34
The Correct Mean Motion	4	26	49	03
Mean Motion of Apog.	11	18	13	54
Annual Æquation of Apog. Ad.			14	31
Correct Mean Motion of Apog.	11	18	28	25
Second Æq. from the dift. of Ap. from Sun Ad.			2	57
Place of the Moon the 2d time Æquat.	4	26	52	00
Mean Motion of Node	11	01	34	25
Æquation of Node Subt.			06	54
Correct Mean Motion of Node	11	01	27	31
The 3d Æquat. of the Moon from Nodes } Afpect with the Sun Subt.				10
Place of the Moon the 3d time Æquated	4	26	51	50
Second Æquation of Apog. Subtr.		7	45	41
True Place of Apog.	11	10	42	44
Mean Anomaly	05	16	09	06
Æquation of Center Sub.		1	53	31
Moons Place the 4th time Æquated	4	24	58	19
The Variation. Ad.				11
Moons Place the 5th time Æquated	4	24	58	30
The 6th Æquation from the diftance of } the Luminaries and Apog. Ad.			1	20
Moons Place 6th time Æquated	4	24	59	50
The 7th Æquation Ad.				34
True place of the Moon in its Orbit	4	25	00	24
True Place of the Sun	10	24	55	50
Moon beyond the Oppofition			4	34
Which divided by the Horary Motion of } Moon from Sun gives			7	42

		D.	H.	′	″
The Mean Time therefore of Oppofit. *Feb.*	2	10	47	06
And the true Time	2	10	32	20

The

The Place of the Moon at the same time from the Tables in Mr. Whiston's Astronomy, according to Horrox's Theory.

Mean Motion of the Moon	4	26	57	37
Physical Parts Sub.			8	21
Correct Mean Motion	4	26	49	16
Mean Motion of Apog.	11	18	13	54
Æquation of Apog. Sub.		7	25	00
Mean Anomaly	5	16	00	22
Æquation of the Center Sub.		1	53	53
Place of Moon in its Orbit	4	24	55	23
Distance from the Opposition				27
That is in time to be added				45½

		D.	H.		
The Mean time therefore of true Opposition is exactly		2	10	55	33
The Apparent time		2	10	40	41
Place of Moon in Ecliptick		4	24	57	27

		D.	H.		
Reduction between the true Opposition and middle of Eclipse Ad.				2	47
Middle of Eclipse		2	10	43	34
Continuance of Eclipse			2	55	06
Digits Eclips'd				9	55
Beginning of Eclipse		2	9	16	01
End of Eclipse			12	11	07
End of Eclipse by the Moons Place from Sir Isaac Newton's Theory.			12	02	00
End by Observation			12	01	30
End by Calculation from Horrox's Theory			12	11	08

The Error therefore of Sir *Isaac Newton's* Theory is by this Observation but half a Minute, or none; of *Horrox's* System, Nine Minutes and a half.

III. A