An Abstract of a Letter from Mr. J. Flamsteed, Math. Reg. *&* F. *of the* R. S. *giving an account of the Eclipses of* ♃ˢ *Satellits, anno* 1686; *and containing a Table of the Parallaxes of* ♃ˢ *Orb, and an Ephemeris of* ♃ˢ *Geocentric Places for the same year.*

Sir,

I Give you here the Eclipfes of *Jupiters Satellits* for the next year 1686, deduced from the fame numbers by which I calculated thofe of the years 1684, and 1685, printed in the *Tranfactions.* I fhall not need to fhew here again, how to find within what limits on our Earth any of them, not vifible with us, will be obfervable; having done it already both in *Englifh* and *Latin* in thofe Tracts; I fhall therefore only tell you that all my obfervations of them fince made, (which have not been many by reafon of our much cloudy weather and my frequent avocations,) have fully made good my affertions concerning them, and that I have not found my numbers at any time fince to err above one minute in the *Eclipfes* of the firft or innermoft *Satellit;* fo that if a way were found of managing a Tube of 8, 10, or 12 foot long at *Sea,* and Obferving the time as exactly as we can at land, Obfervations of thefe *Eclipfes* would certainly give us the difference of Longitude, as exactly as the Latitudes are pretended to be Obferved by our more knowing *Sea-Men,* and certainly much better then the Obfervations of *Lunar Eclipfes.* How the differences of Longitude are gained by them, you will fee by the following Examples, the latter of which I have purpofely produced to

N n n fhew

ſhew the good agreement of my numbers with the heavens.

Anno 1680, *October* 23, old *Stile*, Signior *Joſeph Ponthia*, and *Marco Antonio Cellio* with a Teleſcope of 25 *Palms* long, Obſerved the totall Immerſion of the firſt *Satellit* into $\mathcal{U}^s$ ſhadow at Rome at 10^h. 07'. 53". p. m, which in our Obſervatory here I noted at 9. 15. 41, whoſe difference is the difference of our Meridians $= 52'\text{-}12"$, or 13°. 0'3.

Again, *January* the 28 1685, Signior *Francis Blanchini*, having received my Catalogue of the *Eclipſes* of the *Satellits* for that year, obſerved the totall Immerſion of the 1st at *Rome*, at $\qquad$ 11^h. 19$\frac{3}{4}'$ which I ſaw not here, but my numbers give at $\quad$ 10. 27$\frac{1}{4}$. Therefore the difference of *Meridians* is 0 $\quad$ 52$\frac{1}{2}$; and *Rome* lies ſo much more Eaſterly then the Obſervatory at *Greenwich*, agreeing with the former obſervation, and ſhewing the error of the Tables to be inſenſible.

The noble *Tycho* judged therefore not much amiſs, when he placed *Uraniburg* and *Rome* under the ſame *Meridian*; for by ſeverall obſervations of *Satellit Eclipſes*, it is evident, that the difference of *Meridians* betwixt *Uraniburg* and our Obſervatory is 51'. 10". of time, ſo that *Rome* lies only one minute of time or $\frac{1}{4}$ of a degree to the Eaſt of *Uraniburg*.

Some Ingenuous perſons having often wiſhed that ſuch Tables of the *Satellits* motions were publiſhed, as might ſerve to find their appearences at any given time, tho I think it not fit (by reaſon they are capable of much Correction and great improvement) to publiſh mine at preſent: yet for the ſake of the diligent obſerver, I have contrived a ſmall Inſtrument, whereby with the ſole help of the following Catalogue, and the Table of the *Parallaxes* of $\mathcal{U}^s$ orb, their diſtances from the *Axis* of $\mathcal{U}$ may be found to any given time within the compaſs of the next year, and for any future year by the like Tables. $\qquad$ To

To make the Catalogue of *Eclipses*, as also the Table of the *Parallaxes* of ♃, it was necessary first to make a Table of ♃s *Heliocentrick* places, to which the *Parallaxes* being applied, give the *Geocentrick*. The vulgar Ephemerides are very faulty in this Planet, and no good one being extant this year, I here give you a copy of mine deduced from my own corrected Tables, which I am perswaded will be of good use and very acceptable to the Ingenuous Student of *Astronomy*.

Tabula

Tabula Parallaxium Orbitæ Jovialis Anno. 1686.

D	Janu. Parallax. Adde.		Febr. Parall. Adde.		Martii Parall. Adde		Apri. Parall. Adde.		Maii Parall. Sub.		Junii Parall. Sub.	
	°	'	°	'	°	'	°	'	°	'	°	'
1	9	22	10	32	9	18	5	11	0	41	6	29
2	9	26	10	31	9	13	5	00	0	53	6	39
3	9	31	10	31	9	07	4	49	1	05	6	48
4	9	35	10	30	9	01	4	39	1	18	6	58
5	9	39	10	30	8	55	4	28	1	30	7	06
6	9	42	10	29	8	49	4	17	1	42	7	15
7	9	46	19	28	8	43	4	06	1	54	7	24
8	9	50	10	27	8	37	3	55	2	06	7	32
9	9	53	10	26	8	30	3	44	2	18	7	41
10	9	56	10	24	8	24	3	32	2	30	7	49
11	9	59	10	22	8	17	3	21	2	42	7	57
12	10	02	10	20	8	09	3	09	2	54	8	05
13	10	05	10	18	8	02	2	57	3	06	8	12
14	10	08	10	15	7	54	2	45	3	17	8	20
15	10	10	10	13	7	47	2	33	3	29	8	27
16	10	13	10	10	7	39	2	22	3	40	8	34
17	10	15	10	07	7	31	2	10	3	52	8	41
18	10	17	10	04	7	23	1	58	4	03	8	48
19	10	19	10	01	7	14	1	46	4	14	8	55
20	10	21	9	57	7	06	1	34	4	25	9	01
21	10	23	9	54	6	57	1	22	4	36	9	07
22	10	25	9	50	6	48	1	09	4	47	9	13
23	10	26	9	46	6	39	0	57	4	58	9	19
24	10	27	9	42	6	29	0	45	5	09	9	25
25	10	29	9	37	6	20	0	32	5	19	9	31
26	10	30	9	33	6	11	0	21	5	30	9	36
27	10	31	9	28	6	01	0	09	5	40	9	41
28	10	32	9	23	5	51	Sub.04		5	50	9	46
29	10	32			5	42	0	16	6	00	9	51
30	10	32			5	31	0	28	6	10	9	55
31	10	32			5	21			6	19		

Julii

D	Julii Parall. Sub.		Augu. Parall. Sub.		Sept. Parall. Sub.		Octob. Parall. Sub.		Nov. Parall. Sub.		Decem. Parall. Addc.	
	°	'	°	'	°	'	°	'	°	'	°	'
1	10	00	10	51	9	17	6	10	2	00	2	21
2	10	04	10	49	9	12	6	03	1	51	2	30
3	10	08	10	48	9	07	5	55	1	43	2	38
4	10	12	10	47	9	02	5	48	1	34	2	47
5	10	16	10	46	8	57	5	41	1	25	2	55
6	10	19	10	44	8	52	5	33	1	17	3	04
7	10	23	19	42	8	46	5	25	1	08	3	12
8	10	26	10	41	8	40	5	17	0	59	3	21
9	10	29	10	39	8	35	5	09	0	51	3	29
10	10	32	10	36	8	29	5	02	0	42	3	38
11	10	34	10	34	8	23	4	53	0	33	3	46
12	10	37	10	32	8	17	4	46	0	24	3	54
13	10	39	10	29	8	12	4	38	0	16	4	02
14	10	41	10	26	8	06	4	29	0	07	4	10
15	10	43	10	24	7	59	4	21	Add:	2	4	18
16	10	45	10	21	7	53	4	13	0	11	4	26
17	10	46	10	18	7	47	4	06	0	20	4	35
18	10	48	10	15	7	40	3	57	0	28	4	43
19	10	49	10	11	7	34	3	49	0	37	4	51
20	10	50	10	08	7	27	3	41	0	46	4	59
21	10	51	10	04	7	21	3	32	0	55	5	07
22	10	51	10	00	7	14	3	24	1	03	5	15
23	10	52	9	56	7	07	3	16	1	12	5	22
24	10	52	9	53	7	00	3	08	1	21	5	30
25	10	53	9	49	6	53	2	59	1	29	5	38
26	10	53	9	45	6	46	2	51	1	38	5	46
27	10	53	9	40	6	39	2	43	1	47	5	52
28	10	53	9	36	6	32	2	34	1	55	6	00
29	10	53	6	31	6	25	2	25	2	04	6	08
30	10	52	9	27	6	18	2	17	2	13	6	15
31	10	51	9	22			2	08			6	23

Catalogus Eclipsium Comitum Jovialium ubique terrarum Anno 1686 visibilium, tempora apparentia Ingressuum illorum in Jovis Umbram & ab ea Emersionum, ad Meridianum Observatorii Grenovisani supputata exhibens, à *Johanne, Flamsteedio* Math. Reg. & R. S. S.

Januarii

d.	h.	'		
1	08	18	2	i
	11	27	1	i
2	20	47	3 {	i
	23	23		e
3	05	55	1	i
4	21	35	2	i
5	00	22	1	i
6	18	50	1 *	i
8	10	50	2	i
	13	18	1	i
10	00	42	3 {	i
	3	18		e
	7	45	1	i
12	0	07	2	i
	2	13	1	i
13	20	41	1	i
15	13	22	2	i
	15	09	1 *	i
17	05	37	3 {	i
	08	13		e
	09	37	1	i
19	02	39	2	i
	4	04	1	i
20	22	32	1	i
22	15	55	2 *	i
	17	00	1 *	i
24	08	33	3 {	i
	11	09		e
	11	28	1	
26	05	12	2	i
	5	57	1	i
28	0	25	1	i
29	18	29	2 *	i
	18	53	1 *	i
31	12	30	3	i
	13	21	1	i
	15	06	3 *	e

Februarii

d.	h.	'		
2	07	45	2	i
	7	49	1	i
4	02	18	1	i
5	20	46	1	i
	21	03	2	i
7	15	14	1 *	i
	16	27	1 *	i
	19	04	3 *	e
9	09	43	1	i
	10	20	2	i
11	04	11	1	i
12	22	40	1	i
	23	38	2	i
14	17	08	1 *	i
	20	24	3 {	i
	23	01		e
16	11	37	1	i
	12	55	2 *	i
18	06	06	1	i
20	00	34	1	i
	2	13	2	i
21	19	03	1	i
22	00	24	3	i
22	03	01	3	e
23	13	31	1 *	i
	15	31	2 *	i
25	8	00	1	i
27	02	34	1	i
	4	49	2	i
28	20	57	1	i

Martii

d.	h.	'		
1	4	23	3	i
2	15	26	1 *	i
	18	07	2 *	i
4	09	55	1	i
6	04	24	1	i
	7	25	2	i
7	22	53	1	i
8	08	22	3	i
9	17	22	1 *	i
	20	43	2	i
11	11	50	1 *	i
13	06	19	1	i
	9	52	2	i
15	00	48	1	i
	12	22	3 *	i
16	19	17	1	i
	23	20	2	i
18	13	46	1 *	i
20	08	15	1	i
	12	38	2 *	i
22	02	44	1	i
	16	22	3 *	i
23	21	13	1	i
24	01	54	2	i
25	15	50	1 *	i
27	10	10	1 *	i
	15	15	2 *	i
29	04	39	1	i
	20	21	3	i
30	23	08	1	i
31	04	33	2	i

Apr.

Aprilis d.	h.	'			Maii d.	h.	'			Junii d.	h.	'		
1	17	37	1	*i	1	21	59	1	e	1	00	03	1	e
3	12	05	1	*i	2	06	54	2	e	2	10	49	3	*e
	17	51	2	i	3	16	28	1	e		18	30	1	e
5	06	35	1	i	4	18	57	3	e	3	06	31	2	e
6	00	21	3	i	5	10	56	1	*e	4	13	00	1	*e
7	01	03	1	i		20	12	2	e	6	07	28	1	e
	7	09	2	i	7	05	25	1	e		19	48	2	e
8	19	32	1	i	8	23	53	1	e	8	01	55	1	e
10	14	01	1	*i	9	09	30	2	*e	9	14	47	3	e
	20	28	2	i	10	18	22	1	e		20	25	1	e
12	08	10	1	i	11	22	55	3	e	10	09	06	2	*e
13	04	20	3	i	12	12	50	1	*e	11	14	53	1	e
14	02	58	1	i		22	47	2	e	13	09	21	1	*e
	9	46	2	*i	14	07	19	1	e		22	23	2	e
15	21	27	1	i	16	01	47	1	e	15	03	49	1	e
17	15	57	1	*i		12	06	2	*e	16	18	45	3	e
	23	04	2	i	17	20	15	1	e		22	18	1	e
19	10	25	1	*i	19	02	53	3	e	17	11	40	2	*e
20	08	20	3	*i	19	14	44	1	*e	18	16	46	1	e
21	04	54	1	i	20	01	22	2	e	20	11	15	1	*e
	12	22	2	*i	21	09	12	1	*e	21	00	58	2	e
22	23	22	1	i	23	03	41	1	e	22	05	43	1	e
24	17	51	1	i		14	39	2	*e	23	22	43	3	e
25	01	40	2	i	24	22	09	1	e	24	00	12	1	e
26	12	19	1	*i	20	06	51	3	e		14	15	2	e
27	12	18	3	*i		16	37	1	e	25	18	40	1	e
☍ ☉ ♃					27	03	57	2	e	27	13	09	1	e
28	09	02	1	*e	28	11	05	1	*e	28	03	33	2	e
	17	37	2	e	30	05	34	1	e	29	07	37	1	e
30	03	31	1	e		16	14	2	e	30	23	58	3	i

Julii

Julii d.	h.	'			Augusti d.	h.	'			Septemb. d.	h.	'		
1	02	06	1	e	1	22	44	1	e	1	01	02	1	e
	2	42	3	e	2	16	35	2	e	2	19	31	1	e
	16	50	2	e	3	17	14	1	e	3	12	02	3 {	i
2	20	34	1	e	5	11	43	1	e		13	50	{	e
4	15	03	1	e		19	57	3 {	i		16	27	2	e
5	06	08	2	e		22	43	{	e	4	14	00	1	e
6	09	31	1 *	e	6	05	53	2	e	6	08	30	1	e
8	03	59	3	i	7	06	12	1	e	7	05	46	2	e
	3	59	1	e	9	00	41	1	e	8	02	59	1	e
	6	41	3	e		18	12	2	e	9	21	29	1	e
	19	26	2	e	10	19	10	1	i	10	16	04	3 {	i
9	22	29	1	e	12	13	39	1	i		18	52	{	e
11	16	57	1	e		23	58	3 {	i		19	05	2	e
12	08	44	2 *	e	13	02	44	{	e	11	15	58	1	e
13	11	26	1	e		8	51	2 *	e	13	10	27	1	e
15	05	55	1	e	14	8	09	1 *	e	14	08	25	2	e
	7	57	3 *	i	16	02	38	1	e	15	04	57	1	e
	10	40	3 *	e		21	51	2	e	16	23	26	1	e
	22	02	2	e	17	21	07	1	e	17	21	44	2	e
17	00	24	1	e	19	15	36	1	e		22	54	3	e
18	18	53	1	e	20	03	59	3 {	i	18	17	55	1	e
19	11	21	2	e		6	45	{	e	20	12	25	1	e
20	13	21	1	e		11	10	2	e	21	11	03	2	e
22	07	51	1 *	e	21	10	05	1	e	22	06	44	1 *	e
	11	56	3 {	i	23	04	35	1	e	24	01	23	1	e
	14	41	{	e	24	00	29	2	e	25	00	23	2	e
23	00	39	2	e		23	04	1	e		2	56	3	e
24	02	19	1	e	26	17	33	1	e		19	52	1	e
25	20	49	1	e	27	08	01	3 * {	i	27	14	22	1	e
27	13	57	2	e		10	48	{	e	28	13	42	2	e
	15	17	1	e		13	48	2	e	29	08	51	1	e
29	09	47	1 *	e	28	12	03	1	e					
	15	56	3 {	i	30	06	32	1	c					
	18	41	{	e	31	03	08	2	e					
30	03	16	2	e										
31	04	15	1	e										

Octobris

Octobris				Decemb.						
d.	h.			d.	h.					
1	02 20	1	e	1	10 12	2	i			
2	03 01	2	e		23 38	1	i			
	4 58	3	e	3	18 06	1	i			
	21 49	1	e	4	23 28	2	i			
4	16 18	1	e	5	12 33	1	i			
5	16 19	2	e		15 45	3	i			
6	10 47	1	e	7	07 00	1	i			
8	05 16	1*e		8	12 15	2	i			
9	05 38	2*e		9	01 29	1	i			
	10 58	3	e	10	19 56	1*i				
	23 45	1	e	12	02 00	2	i			
11	18 14	1	e		14 24	1	i			
12	18 56	2	e		19 40	3*i				
13	12 43	1	e	14	c8 51	1	i			
15	07 12	1	e	15	15 15	2	i			
16	8 15	2	e	16	03 18	1	i			
	14 58	3	e	17	21 46	1	i			
17	01 41	1	e	19	04 31	2	i			
18	20 09	1	e		16 14	1	i			
19	21 33	2	e		23 34	3	i			
20	14 38	1	e	21	10 42	1	i			
22	09 07	1	e	22	17 46	2*i				
23	10 51	2	e	23	05 09	1	i			
	18 58	3 -	e	24	23 37	1	i			
24	03 35	1	e	26	07 03	2	i			
25	02 04	1	e		18 04	1 * i				
27	00 08	2	e	27	02 29	3	i			
	16 32	1	e	28	12 32	1	i			
29	11 01	1	e	20	20 18	2 * i				
30	13 26	2	e	30	07 00	1	i			
	22 57	3	e							
31	05 29	1*e								

Novembre toto ♃
latet sub Radiis solis

Quartus hoc Anno Umbram non ingreditur, sed ♃ e sole emergente, in penumbram solummodo incidit. Interea planum ad Axem Umbræ & Jovis orbitam perpendiculare pertransit temporibus infra notatis. 1686.

	d.	h.
Janua.	12	12 07
	29	6 0
Februa	15	0 0
Martii	3	17 56
	20	11*57
Aprilis	6	5 59
	23	0 00
Maii	9	17 59
	26	11*57
Junii	12	5 54
	28	23 52
Julii	15	17 52
Augusti	1	11 55
	18	6 00
Septemb.	4	0 08
	20	18 15
Octob.	7	12 21
	24	6 23
Decemb.	13	12 8
	30	5 39

2* post. in penumbra.

Jovis Loca Geocentrica Anno 1686.

D	Janu. ° m ′	Feb. ° m ′	Martii. ° m ′	April. ° m ′	Maii. ° m ′	Junii ° m ′
1	18 12	21 45	22 40	20 56	17 23	13 59
2	18 21	21 49	22 39	20 50	17 16	13 54
3	18 30	21 53	22 38	20 44	17 08	13 49
4	18 38	21 57	22 37	20 38	17 1	13 45
5	18 47	22 01	22 36	20 32	16 53	13 41
6	18 55	22 04	22 34	20 25	16 48	13 37
7	19 03	22 08	22 33	20 19	16 38	13 33
8	19 12	22 12	22 31	20 12	16 31	13 29
9	19 20	22 15	22 29	20 06	16 24	13 25
10	19 27	22 18	22 27	19 59	16 16	13 22
11	19 35	22 21	22 25	19 52	16 9	13 18
12	19 43	22 24	22 22	19 45	16 2	13 15
13	19 50	22 26	22 19	19 38	15 54	13 12
14	19 51	22 28	22 17	19 31	15 47	13 9
15	20 05	22 30	22 13	19 24	15 40	13 7
16	20 12	22 32	22 10	19 16	15 34	13 4
17	20 19	22 34	22 06	19 9	15 27	13 2
18	20 25	22 35	22 03	19 2	15 20	13 0
19	20 32	22 37	21 59	18 55	15 14	12 58
20	20 38	22 38	21 55	18 47	15 07	12 56
21	20 45	22 39	21 51	18 40	15 1	12 54
22	20 51	22 40	21 47	18 32	14 55	12 53
23	20 57	22 40	21 43	18 25	14 48	12 52
24	21 03	22 41	21 38	18 17	14 42	12 51
25	21 09	22 41	21 33	18 9	14 36	12 50
26	21 15	22R 41	21 28	18 2	14 31	12 49
27	21 20	22 41	21 23	17 54	14 25	12 49
28	21 26	22 40	21 18	17 47	14 20	12 48
29	21 31		21 13	17 39	14 14	12 48
30	21 36		21 8	17 31	14 9	12D 48
31	21 40		21 2		14 4	

Julii

D	Julii ° ♍	Aug. ° ♍	Septem. ° ♍	Octob. ° ♍	Novem ° ♐	Decem. ° ♐
1	12 48	14 22	18 21	23 49	0 26	7 10
2	12 49	14 28	18 31	24 1	0 39	7 23
3	12 49	14 34	18 41	24 14	0 53	7 36
4	12 50	14 40	18 51	24 26	1 6	7 49
5	12 51	14 46	19 0	24 38	1 20	8 3
6	12 52	14 52	19 10	24 50	1 33	8 16
7	12 54	14 59	19 20	25 03	1 46	8 29
8	12 55	15 5	19 31	25 15	2 0	8 42
9	12 57	15 12	19 41	25 28	2 13	8 55
10	12 59	15 18	19 51	25 41	2 27	9 8
11	13 01	15 25	20 2	25 53	2 40	9 21
12	13 3	15 33	20 13	26 6	2 54	9 35
13	13 5	15 40	20 23	26 19	3 7	9 48
14	13 8	15 47	20 34	26 32	3 20	10 1
15	13 11	15 55	20 45	26 45	3 34	10 13
16	13 13	16 2	20 56	26 58	3 48	10 26
17	13 17	16 10	21 7	27 10	4 2	10 39
18	13 20	16 18	21 18	27 22	4 15	10 52
19	13 23	16 26	21 29	27 35	4 28	11 05
20	13 27	16 34	21 41	27 48	4 42	11 17
21	13 31	16 43	21 52	28 1	4 55	11 30
22	13 35	16 51	22 3	28 14	5 8	11 42
23	13 40	17 0	22 15	28 27	5 21	11 55
24	13 44	17 8	22 26	28 40	5 35	12 08
25	13 48	17 17	22 38	28 53	5 49	12 20
26	13 52	17 26	22 50	29 6	6 3	12 32
27	13 57	17 35	23 1	29 20	6 16	12 44
28	14 01	17 44	23 13	29 33	6 29	12 57
29	14 6	17 53	23 25	29 46	6 43	13 09
30	14 11	18 3	23 38	29 59	6 56	13 21
31	14 17	18 12		0 ♐ 13		13 34

O o o 2   A Correct