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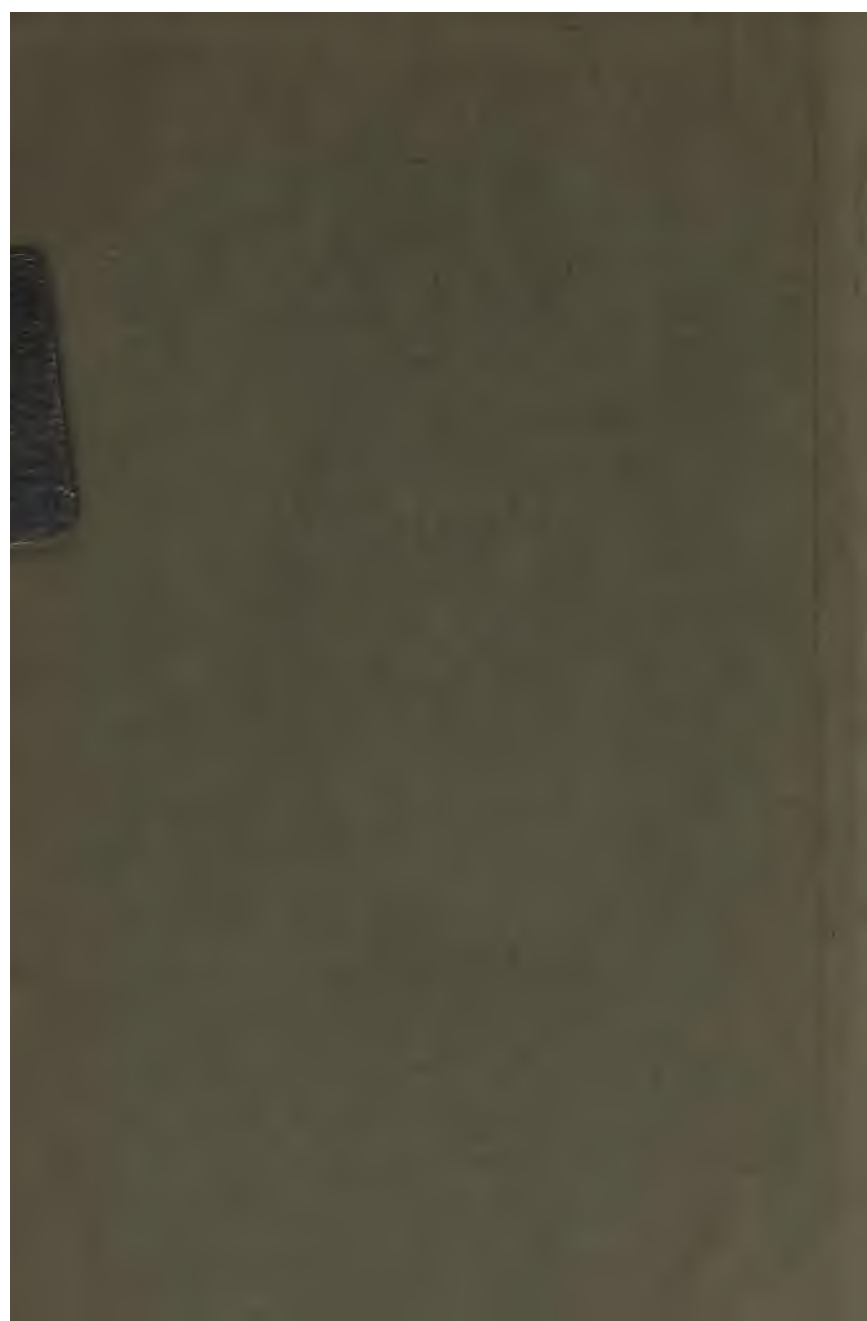
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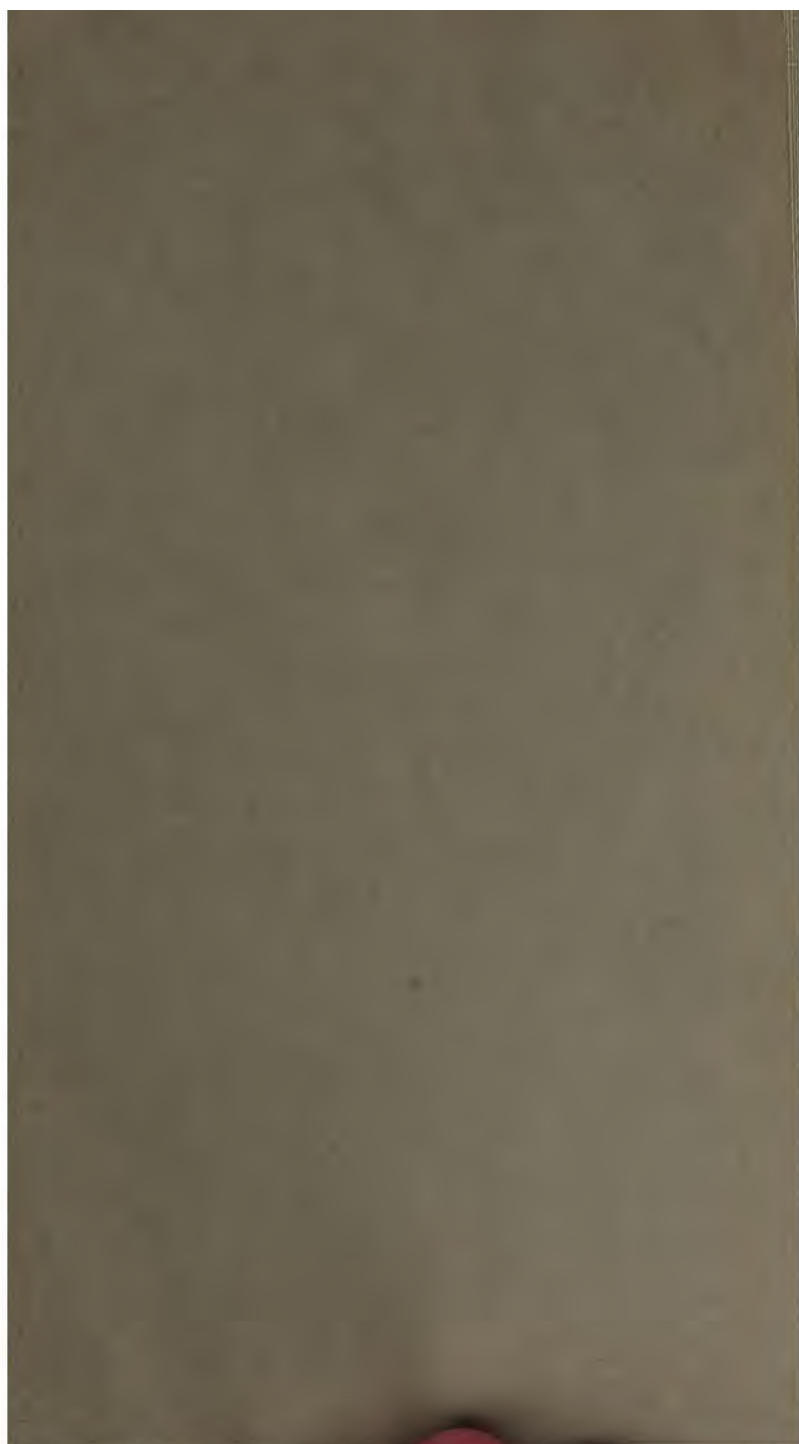
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Great Britain
C/S



THE
NAUTICAL ALMANAC
AND
ASTRONOMICAL EPHEMERIS
FOR THE YEAR
1795.

PUBLISHED BY ORDER OF THE
COMMISSIONERS OF LONGITUDE.

EDITION THE SECOND.

L O N D O N :

PRINTED BY C. BUCKTON, GREAT PULTENEY STREET;
AND
SOLD BY P. ELSLEY, STRAND, BOOKSELLER TO THE SAID
COMMISSIONERS.

M DCC XCIV.

[Price Three Shillings and Sixpence.]

EXTRACT from the ACT of PARLIAMENT
concerning the Longitude, made in the Fifth
Year of the Reign of His present Majesty.

WHEREAS the Publication of Nautical Almanacs constructed by proper Persons, under the Direction of the said Commissioners, would greatly contribute to make the said Lunar Tables more generally useful; Be it further Enacted, by the Authority aforesaid, That it shall and may be lawful to and for the said Commissioners to cause such Nautical Almanacs, or other useful Tables, to be constructed, and to print, publish, and vend, or cause to be printed, published, and vended, any Nautical Almanac or Almanacs, or other useful Table or Tables, which they, or the major Part of them, shall, from time to time, judge necessary and useful, in order to facilitate the Method of discovering the Longitude at Sea; any Law, Statute, exclusive Privilege, private Charter, or other Custom, to the contrary thereof notwithstanding.

And be it Enacted, by the Authority aforesaid, That no Person or Persons shall print, publish, or vend, or cause to be printed, published, or vended, any Nautical Almanac or Almanacs, or other Table, or Tables constructed under the Direction of the said Commissioners, without being first licensed by the said Commissioners, or the major Part of them: And if any Person or Persons not so licensed, or not being authorised by the Person or Persons so licensed by the said Commissioners, shall print, publish, or vend, or cause to be printed, published, or vended, any such Nautical Almanac or Almanacs, or other Table or Tables, every such Person or Persons shall, for every Copy of such Nautical Almanac or Table so printed, published, or vended, forfeit and pay the Sum of Twenty Pounds; to be recovered by Action of Debt, Bill, Plaint, or Information, in any of His Majesty's Courts of Record at *Westminster*; and that One Moiety of such Penalty and Forfeiture shall be to His Majesty, his Heirs and Successors, and the other Moiety to him or them that shall prosecute, inform, or sue for the same.

EXTRACT of an Act for the Repeal of all former Acts concerning the Longitude at Sea, except so much thereof as relates to the Appointment and Authority of the Commissioners thereby constituted, and also such Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs and other useful Tables; and for the more effectual Encouragement and Reward of such Person and Persons as shall discover a Method for finding the same, or shall make useful Discoveries in Navigation; and for the better making Experiments relating thereto: Made in the Fourteenth Year of the Reign of His present Majesty.

BE it Enacted by the KING's Most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, That each and every of the said recited Acts (save and except such Clause and Clauses in each or any of them as relate to the Appointment or Authority of all or any of the Commissioners thereby respectively constituted, and also such Clause and Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs, and other useful Tables) shall, from and after the Twenty-fourth Day of *June* One thousand Seven hundred and Seventy-four, be, and are hereby repealed.

And, for a due and sufficient Encouragement to any Person or Persons who shall discover any Method or Methods for finding the said Longitude, Be it Enacted by the Authority aforesaid, That the First Author or Authors, Discoverer or Discoverers, of each and every such Method or Methods, his or their Executors, Administrators, or Assigns, shall be intitled to and have the Rewards or Sums of Money herein-after mentioned; that is to say, In case the Method proposed shall be, by means of a Time-keeper, the Principles whereof have not hitherto been made public, to the Reward or Sum of Five Thousand Pounds, if such Method determines the said Longitude to One Degree of a great Circle, or Sixty geographical Miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it determines the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds, if it determines the same to One Half of the said Distance: Which respective Rewards shall be due and paid when such Method shall have been sufficiently tried by the following Experiments and

EXTRACT, &c.

Voyages to be made and performed by such Persons, and under such Restrictions, as the said Commissioners for the Discovery of Longitude at Sea respectively constituted by the above-recited Acts, or the major Part of them, shall think fit to appoint and direct; (that is to say), When and so soon as Two or more Time-keepers of the same Construction shall have been tried at the same Time, for the Space of Twelve Months, at the Royal Observatory at Greenwich, then in Two Voyages round the Island of Great Britain, in contrary Directions, and in such other Voyages to different Climates as the said Commissioners shall think fit to direct and appoint; and after their Return from such Voyages, or any of them, for such longer Time, at the said Observatory, not exceeding Twelve Months, as the said Commissioners shall judge necessary; and also when and so soon as the said Commissioners, or Two Thirds of them at the least, shall, after such Experiments and Voyages have been made and performed as aforesaid, have declared and determined that such Method is generally practicable and useful, and sufficiently exact to determine the Longitude at Sea within the Degrees or Limits aforesaid, in all Voyages for the Space of Six Months, (Impediments from cloudy and hazy Weather excepted); and also when and so soon as the Principles and Practice of such Method are fully discovered and explained to the Satisfaction of the said Commissioners, or Two Thirds of them at least; and such Author or Authors, Discoverer or Discoverers, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Property of such Time-keepers as shall have been tried by such Experiments and Voyages as aforesaid, together with all Plates, Descriptions, Theories, and Explanations belonging or relating to the same, and which shall contain the Whole of such Discovery of the Longitude; and in case the Method proposed shall be by means of improved Solar and Lunar Tables, then and in such Case the Author or Authors of such improved Solar and Lunar Tables, their Executors, Administrators, or Assigns, shall be intitled to and have the Reward or Sum of Five Thousand Pounds, if such Solar and Lunar Tables shall prove sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens within Fifteen Seconds of a Degree, answering to about Seven Minutes of Longitude, after making an allowance of Half a Degree for the Errors of Observation; and when it shall appear to the Satisfaction of the said Commissioners, or Two Thirds of them at least, that such Tables are constructed intirely upon the Principles of Gravitation laid down by Sir Isaac Newton (except with respect to those Elements which must necessarily be taken from astronomical Observations), and also when the Truth of such Tables shall have been further confirmed and proved by Comparison with a Series of astronomical Observations made during a Period of Eighteen Years and a Half, which is deemed the Period of the Irregularities of the Lunar Motion; which Reward shall be due and paid, when the said Commissioners, or two Thirds of them at least, shall have declared

EXTRACT, &c.

and determined, that such Tables are sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens, within the limits above-mentioned; and also when the Author or Authors of such improved Solar and Lunar Tables, his or their Executors, Administrators, or Assigns, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Right and Property to and in the same, together with the Theory relating thereunto; and in case any other Method shall be proposed for finding the Longitude at Sea besides those before-mentioned, that then and in such Case the First Author or Authors, Discoverer or Discoverers, of any such Method, his or their Executors, Administrators, or Assigns, shall be intitled to and have the Reward or Sum of Five Thousand Pounds, if it shall determine the said Longitude within One Degree of a great Circle or Sixty geographical miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it shall determine the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds, if it shall determine the same to One Half of the same Distance; which respective Rewards shall be due and paid, so soon as the said Commissioners, or Two Thirds of them at least, shall, after proper Trial have been made by their Appointment and Direction, have determined that such Method shall be generally practicable and useful for finding the Longitude at Sea within the respective limits above-mentioned.

And be it further Enacted, by the Authority aforesaid, That when and so soon as any such Method or Methods, for the Discovery of the said Longitude, shall be tried, as before-mentioned, and found practicable and useful at Sea, and sufficiently exact to determine the Longitude within any of the Degrees or Limits aforesaid, the said Commissioners, or Two Thirds of them, shall certify the same, under their Hands and Seals, to the Commissioners of the Navy for the Time being, together with the Name or Names of the Person or Persons who shall be the Author or Authors of such Method or Methods; and upon the Receipt of such Certificate, the said Commissioners of the Navy are hereby authorised and required to make out a Bill or Bills upon the Treasurer of the Navy for the respective Sum or Sums of Money to which the Author or Authors of such Proposal, his or their Executors, Administrators, or Assigns, shall be intitled by virtue of this Act; which Sum or Sums the said Treasurer is hereby required to pay to the said Author or Authors, their Executors, Administrators, or Assigns accordingly, out of any Money that may be in his Hands unapplied to the Use of the Navy, according to the true Intent and Meaning of this Act.

And be it further Enacted, by the Authority aforesaid, That the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall have full Power and Authority to hear and receive any Proposal or Proposals that shall be made to them

EXTRACT, &c.

for discovering the said Longitude, or for making any other useful Improvement in Navigation; and in case the said Commissioners, or any Five or more of them, shall be so far satisfied of the Probability of any such Discovery or Improvement as to think it proper to cause Experiments to be made thereof, they shall certify the same, together with the Names of the Author or Authors of such Proposal or Proposals, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for any Sum or Sums of Money as the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall think necessary for making such Experiments; which Sum or Sums the Treasurer of the Navy is hereby required to pay immediately to such Person or Persons as shall be appointed by the said Commissioners to make those Experiments out of any Money which shall be in his the said Treasurer's Hands unapplied as aforesaid.

And be it further Enacted, by the Authority aforesaid, That if any Person or Persons shall make any Discovery for finding the Longitude at Sea, which, though not of so great Use as to be intitled to any of the great Rewards above specified, shall nevertheless be adjudged by the said Commissioners for the Discovery of Longitude at Sea, or the major Part of them, to be of considerable Use to the Public, or shall make any other Discovery or Discoveries, Improvement or Improvements, useful to Navigation; then, and in such Case, such Person or Persons, his or their Executors, Administrators, or Assigns, shall, from time to time, have and receive such less Reward or Sum or Sums of Money as the said Commissioners, or the major Part of them, shall think reasonable; and certify accordingly, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for any such Sum or Sums of Money, which the said Treasurer is hereby authorized and required to pay immediately to such Person or Persons, his or their Executors, Administrators, or Assigns, out of any Money that shall be in his the said Treasurer's Hands unapplied as aforesaid.

Provided also, and it is hereby further Enacted, That in case any Person or Persons who shall and may have received any Sum or Sums of Money, by virtue of this Act, as a Reward for any Method of discovering the Longitude at Sea, shall afterwards become intitled to any of the greater Rewards appointed by this Act, for or on account of the same Method; that then, and in such Case, such Sum or Sums of Money as they shall or may have received as aforesaid shall be considered as Part of such greater Reward, and deducted therefrom accordingly; and that no Person shall receive more in the Whole for any One Method for discovering the Longitude at Sea than the greatest Reward appointed for such Method by the Act.

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea; and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

WHEREAS we think fit to employ you to re-print the Nautical Almanacs and Astronomical Ephemerides for the Years 1791, 1792, 1793, 1794, and 1795; We do, in pursuance of the power vested in us by Acts of Parliament, hereby license, authorize and empower you to re-print the Nautical Almanacs and Astronomical Ephemerides for those Years accordingly, together with such other useful Tables for facilitating the method of discovering the Longitude at Sea as have been constructed under our direction, and will be delivered to you by the Rev. Dr. NEVIL MASKELYNE, His Majesty's Astronomer Royal, at *Greenwich*; and for so doing this shall be your sufficient Warrant. Given under our Hands and Seals the 12th Day of *July*, 1788.

To Mr. CHRISTOPHER BUCKTON,
Printer,
*Great Pulteney-Street,
Golden-Square.*

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J. SMITH	(L. S.)

By Command of the Commissioners,

H. PARKER, Secretary.

By the COMMISSIONERS appointed by Act
of Parliament for the Discovery of the Long-
itude at Sea; and for examining, trying,
and judging of all Proposals, Experiments,
and Improvements relating to the same.

WHEREAS we think fit to employ you to publish and vend,
and to cause to be published and vended, all such Nautical
Almanacs and Astronomical Ephemerides, and such other useful Tables,
constructed under our Direction, as have hitherto been printed and
shall hereafter be printed for the several Years next ensuing, down to
the Year 1800 inclusive. We do therefore, in pursuance of the
power vested in us by Act of Parliament, hereby license, authorize,
and empower you to publish and vend, and to cause to be published
and vended, such Nautical Almanacs, and Astronomical Ephemerides,
as well as such other useful Tables, constructed under our Direction,
as have hitherto been printed, or shall hereafter be printed for the
several Years next ensuing, down to the Year 1800 inclusive. For
which this shall be your Warrant. Given under our Hands and
Seals the 5th Day of *December*, 1789.

To Mr. PETER ELSLEY,
Bookseller,
In the STRAND.

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J. SMITH	(L.S.)

By Command of the Commissioners.

H. PARKER, Secretary.

P R E F A C E.

THE Commissioners of Longitude, in pursuance of the Powers vested in them by Act of Parliament, present the Public with the NAUTICAL ALMANAC and ASTRONOMICAL EPHEMERIS for the Year 1795, being the Twenty-ninth Impression, to be continued annually; a Work which must greatly contribute to the Improvement of Astronomy, Geography, and Navigation. This EPHEMERIS contains every thing essential to general Use that is to be found in any Ephemeris hitherto published, with many other useful and interesting Particulars never yet offered to the Public in any Work of this Kind. The Tables of the Moon had been brought by the late Professor Mayer of *Gottingen* to a sufficient Exactness to determine the Longitude at Sea, within a Degree, as appeared by the Trials of several Persons who made Use of them. The Difficulty and

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Length

P R E F A C E.

Length of the necessary Calculations seemed the only Obstacles to hinder them from becoming of general Use: To remove which this EPHEMERIS was made; the Mariner being hereby relieved from the Necessity of calculating the Moon's Place from the Tables, and afterwards computing the Distance to Seconds by Logarithms, which are the principal and only very delicate Part of the Calculus; so that the finding the Longitude by the Help of the EPHEMERIS is now in a Manner reduced to the Computation of the Time, an Operation equal to that of an Azimuth, and the Correction of the Distance on account of Refraction and Parallax, which is also rendered very easy by either of the Two Methods invented by Mr. LYONS and Mr. DUNTHORNE, and published in the First Edition of the Tables requisite to be used with the EPHEMERIS, and since, with Improvements, in the Second Edition of the same Tables; or by either of the Two Methods annexed to the EPHEMERIS of 1772, being both Improvements of the Method which I formerly published in the BRITISH MARINER'S GUIDE and PHILOSOPHICAL TRANSACTIONS, the First by myself, and the Second by Mr. GEORGE WITCHELL, which are now also annexed to the Second Edition of the REQUISITE TABLES,

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TABLES, but still more so by the GENERAL TABLES for correcting the apparent Distance of the Moon and a Star or the Sun from the Effects of Refraction and Parallax, computed at great Expence by Order of the Commissioners of Longitude, and published under the Care of Dr. SHEPHERD, Plumian Professor of Astronomy and Experimental Philosophy at CAMBRIDGE, in 1772.

All the Calculations of the EPHEMERIS relating to the Sun were made from Mr. MAYER's last manuscript Tables, received by the Board of Longitude after his Decease, which have been printed under my inspection, and published in 1770; but the Calculations of the Moon which had been made since the Year 1777 inclusive from new Tables, improved from MAYER's Tables, composed by Mr. CHARLES MASON, under my Direction, from Calculations made by Order of the Board of Longitude, upon the Series of Lunar Observations made by the late Dr. BRADLEY, and published in the Nautical Almanac of 1774, are in this EPHEMERIS, for the Seventh Time, computed from Tables still farther corrected by Mr. MASON, and rendered more exact by the Addition of Eight Equations to the number in MAYER's Tables, taken from

P R E F A C E,

MAYER'S Theory, but settled as to the *Maxima* from the said Observations, and the whole being calculated to Tenths of a Second. These new Tables, when compared with the above-mentioned Series of Observations, a proper Allowance being made for the unavoidable Error of Observation, seem to give always the Moon's Longitude in the Heavens correctly within 30 Seconds of a Degree; which greatest Error, added to a possible Error of One Minute in taking the Moon's Distance from the Sun or a Star at Sea, will at a Medium only produce an Error of 42 Minutes of Longitude. The Error of the same Tables in Latitude seems never to exceed a Minute, which will but triflingly affect the computed Distances of the Moon from the Sun and zodiacal Stars set down in the EPHEMERIS.

The Calculations of the Planets Places were made from M. DE LA LANDE's Tables contained in the Second Edition of his Astronomy, as they have been for every EPHEMERIS beginning with that of 1780; and those of the Eclipses of Jupiter's Satellites were made from Mr. WARGENTIN's Tables annexed to the same Tables of M. De LA LANDE, excepting the Eclipses of Jupiter's Second Satellite,

P R E F A C E.

Satellite, which were inserted in this EPHEMERIS for the Fifteenth Time from new Tables transmitted to me from their learned Author Mr. WARGENTIN, Secretary to the Royal Academy of Sciences at STOCKHOLM, and published at the End of the Nautical Almanac of 1779.

All the Articles of the EPHEMERIS were computed by Two separate Persons, and examined by a Third, except the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, and Parallax, which for Noon were computed by One Person, and for Midnight by another, and the Truth of these Calculations ascertained by means of Differences, which for the Moon's Longitude were carried as far as the Fourth Order.

NEVIL MASKELYNE,

ASTRONOMER ROYAL.

GREENWICH,
April 26, 1790.

EXPLANATION OF THE CHARACTERS

USED IN THE

ASTRONOMICAL EPHEMERIS.

The P L A N E T S, &c.

☉ The Sun.	♂ Mars.
☾ The Moon.	♃ Jupiter.
☿ Mercury.	♄ Saturn.
♀ Venus.	♅ Georgian.
♁ The Earth.	

- ♊ The Moon's, or any other Planet's Ascending Node.
- ♋ The Descending Node.
- ♌ Conjunction, or Planets situated in the same Longitude.
- ♍ Quadrature, or Planets situated in Longitudes differing 3 Signs from each other.
- ♎ Opposition, or Planets situated in opposite Longitudes, or differing 6 Signs from each other.

N. North.	Inf. Inferior.	Im. Immersion.
S. South.	Sup. Superior.	Em. Emerlion.

S I G N S of the Z O D I A C.

S.	S.
0 ♈ Aries.	6 ♎ Libra
1 ♉ Taurus.	7 ♏ Scorpio.
2 ♊ Gemini.	8 ♐ Sagittarius.
3 ♋ Cancer.	9 ♑ Capricornus.
4 ♌ Leo.	10 ♒ Aquarius.
5 ♍ Virgo.	11 ♓ Pisces.

PRINCIPAL ARTICLES

OF

THE ALMANAC OF 1795.

<i>Chronological Cycles.</i>			<i>Ember Days.</i>		
Dominical Letter	- - - -	D	Feb.	- - -	25, 27, and 28
Lunar Cycle, or Golden Numb.	10		May	- - -	27, 29, and 30
Epact	- - - -	9	September	- - -	16, 18, and 19
Solar Cycle	- - - -	12	December	- - -	16, 18, and 19
Roman Indiction	- - - -	13			

MOVEABLE FEASTS.

Septuagesima Sunday	- Feb.	1	Low Sunday	- - - -	Apr. 12
Quinq. or Shrove Sunday		15	Rogation Sunday	- - -	May 10
Ash Wed. or 1st Day of Lent		18	Asc. Day, or Holy Thurs.	- -	14
Middle Lent Sunday	- Mar.	15	Whit Sunday	- - - - -	24
Palm Sunday	- - - - -	29	Trinity Sunday	- - - - -	31
EASTER DAY	- - - - -	Apr. 5	Advent Sunday	- - -	Nov. 29

T E R M S.

Names	<i>London.</i>		<i>Oxford.</i>		<i>Cambridge.</i>	
	Begins	Ends	Begins	Ends	Begins	Ends
Hilary, or Lent.	Jan. 23	Feb. 12	Jan. 14	Mar. 28	{ Jan. 13 Div. Feb. 18 Midn. Mar. 27	
Easter	Apr. 22	May 18	April 15	May 21	{ April 15 Div. May 28 Noon. July 10	
Trinity	June 5	June 24	June 3	July 18		
Michael.	Nov. 6	Nov. 28	Oct. 10	Dec. 17	{ Oct. 10 Div. Nov. 12 Midn. Dec. 16	

Oxford Aet July 13. — Camb. Commencement July 7.

O B L I Q U I T Y, &c.

Obliquity of the Ecliptic.	1795	Equation of Equinoctial Points.
D. M. S.		S.
23.27.50,5	Jan. 1.	13, 0
23.27.51,0	Apr. 1.	14, 7
23.27.51,6	July 1.	15, 6
23.27.52,2	Oct. 1.	16, 2
23.27.52,9	Dec. 31.	16, 8

SOLAR AND LUNAR ECLIPSES IN THE YEAR 1795.

Jan. 20. *SUN eclipsed, invisible at Greenwich.*

♂ at 12^h. 9'. in Long. 10°. 1°. 2'. ♀'s Lat. 40' 55". N.
 ☉ is centrally eclipsed on the Meridian, at 12^h. 26'.
 in Long. 173°½ East, and Lat. 25°¼ North.

Feb. 3. *MOON eclipsed, visible at Greenwich.*

	H. M.
Beginning	10. 59
Middle	12. 25
Ecliptic Opposition	12. 32
End	13. 51
Digits eclipsed, 7°. 27' on ♀'s South Limb.	

July 15. *SUN eclipsed, invisible at Greenwich.*

♂ at 19^h. 31'. in Long. 3°. 23°. 38'. ♀'s Lat 30°¼ S.
 ☉ will be centrally eclipsed on the Meridian at
 19^h. 41'. in Long. 64°¼ East, and Lat. 10°¼ South.

July 31. *MOON eclipsed, partly visible at Greenwich.*

	H. M.
Beginning	6. 46½
Middle	7. 42½
♂ rises	
Ecliptic Opposition	7. 53
End	8. 38
Digits eclipsed, 2°. 52' on ♀'s North Limb.	

JANUARY 1795.

1

Days of the Month.	<i>Sundays, Holidays, Terms, &c.</i>	<i>Phases of the MOON.</i>
		D. H. M. ○ Full Moon ----- 4. 21. 33 ☾ Last Quarter ----- 12. 16. 51 ● New Moon ----- 20. 12. 9 ☽ First Quarter ----- 27. 9. 3
1	Circumcision.	<i>Other Phenomena.</i>
2		
3		
4	2d Sunday aft. Christmas.	D. H. M. 1. 21. 26 ☽ γ δ 23. 14 ☽ ι ad δ δ 23. 40 ☽ 2 ad δ δ 2. 2. 53 I. α δ, * 2' S. of δ's C. 3. 44 1/2 E. α δ, * 3 1/2 S. of δ's C. 4. 2. 26 ☽ ν π 16. 19 ☽ ζ π 6. 10. 35 ☽ δ ε 8. 1. 52 ☽ α Ω 10. 19. 21 ☽ c η 13. - - δ λ ≈ diff. Lat. 19'. 15. 3. 27 ☽ γ ≈ 7. 53 ☽ η ≈ 19. 11. 46 ☽ enters ≈ 20. - - δ φ ≈ diff. Lat. 16'. ☽ eclipsed, invisible. 22. - - ♀ Stationary. 23. - - ♀ Stationary. 13. 4 ☽ ι ad ↓ ≈ 27. 3. 15 ☽ 2 ad ξ Ceti. 11. 59 1/2 I. μ Cc. * 14 1/2 N. of δ's C. 12. 23 1/2 E. μ Cc. * 14 1/2 N. of δ's C. 29. 3. 33 ☽ γ δ 5. 23 ☽ ι ad δ δ 5. 49 ☽ 2 ad δ δ 10. 25 ☽ α δ 31. 9. 35 ☽ ν π
5	Epiphany.	
6		
7		
8	Lucian.	
9		
10		
11	1st Sunday aft. Epiphany.	
12		
13	Hilary Camb. Term beg.	
14	Oxford Term begins.	
15		
16		
17		
18	2d Su. aft. Epi. Qu. Charl.	
19	[Birth-day kept. Prisca.	
20	Fabian. In 8 days of St.	
21	Agnes. [Hil. 1 ret.	
22	Vincent.	
23	Hilary Term begins.	
24		
25	3d Sun. after Epiph. Con-	
26	version of St. Paul.	
27	Pr. Aug. Fr. born. In 15	
28	[days of St. Hil. 2 ret.	
29		
30	K. Charles. I. Martyr.	
31		

Days of the Week.	Days of the Month.	THE SUN'S			Equation	Diff.
		Longitude.	R'. Alcen.	Declin.	of Time.	
			<i>in Time.</i>	<i>South.</i>	<i>Add.</i>	
		S. D. M. S.	H. M. S.	D. M. S.	MA S.	. S.
Th.	1	9. 11. 9. 37	18. 48. 33. 0	22. 59. 40	4. 8. 4	28. 1
F.	2	9. 12. 10. 47	18. 52. 57. 7	22. 54. 19	4. 36. 5	27. 6
Sa.	3	9. 13. 11. 57	18. 57. 22. 0	22. 48. 31	5. 4. 1	27. 3
Sun.	4	9. 14. 13. 6	19. 1. 45. 8	22. 42. 15	5. 31. 4	26. 8
M.	5	9. 15. 14. 15	19. 6. 9. 3	22. 35. 33	5. 58. 2	26. 4
Tu.	6	9. 16. 15. 24	19. 10. 32. 3	22. 28. 23	6. 24. 6	25. 9
W.	7	9. 17. 16. 32	19. 14. 54. 8	22. 20. 47	6. 50. 5	25. 3
Th.	8	9. 18. 17. 41	19. 19. 16. 8	22. 12. 46	7. 15. 8	24. 9
F.	9	9. 19. 18. 50	19. 23. 38. 3	22. 4. 17	7. 40. 7	24. 3
Sa.	10	9. 20. 19. 58	19. 27. 59. 3	21. 55. 23	8. 5. 0	23. 7
Sun.	11	9. 21. 21. 6	19. 32. 19. 6	21. 46. 3	8. 28. 7	23. 2
M.	12	9. 22. 22. 14	19. 36. 39. 4	21. 36. 18	8. 51. 9	22. 6
Tu.	13	9. 23. 23. 21	19. 40. 58. 6	21. 26. 8	9. 14. 5	22. 0
W.	14	9. 24. 24. 29	19. 45. 17. 2	21. 15. 32	9. 36. 5	21. 3
Th.	15	9. 25. 25. 36	19. 49. 35. 0	21. 4. 33	9. 57. 8	20. 6
F.	16	9. 26. 26. 43	19. 53. 52. 3	20. 53. 9	10. 18. 4	19. 9
Sa.	17	9. 27. 27. 50	19. 58. 8. 8	20. 41. 21	10. 38. 3	19. 2
Sun.	18	9. 28. 28. 56	20. 2. 24. 7	20. 29. 10	10. 57. 5	18. 5
M.	19	9. 29. 30. 2	20. 6. 39. 8	20. 16. 35	11. 16. 0	17. 8
Tu.	20	10. 0. 31. 7	20. 10. 54. 2	20. 3. 38	11. 33. 8	17. 0
W.	21	10. 1. 32. 11	20. 15. 7. 7	19. 50. 18	11. 50. 8	16. 2
Th.	22	10. 2. 33. 14	20. 19. 20. 6	19. 36. 35	12. 7. 0	15. 5
F.	23	10. 3. 34. 17	20. 23. 32. 6	19. 22. 31	12. 22. 5	14. 6
Sa.	24	10. 4. 35. 18	20. 27. 43. 8	19. 8. 6	12. 37. 1	13. 7
Sun.	25	10. 5. 36. 17	20. 31. 54. 2	18. 53. 21	12. 50. 8	13. 0
M.	26	10. 6. 37. 16	20. 36. 3. 7	18. 38. 13	13. 3. 8	12. 1
Tu.	27	10. 7. 38. 13	20. 40. 12. 5	18. 22. 47	13. 15. 9	11. 3
W.	28	10. 8. 39. 9	20. 44. 20. 3	18. 7. 0	13. 27. 2	10. 5
Th.	29	10. 9. 40. 3	20. 48. 27. 3	17. 50. 54	13. 37. 7	9. 6
F.	30	10. 10. 40. 56	20. 52. 33. 5	17. 34. 29	13. 47. 3	8. 7
Sa.	31	10. 11. 41. 48	20. 56. 38. 9	17. 17. 45	13. 56. 0	

Time of Q's Semidiam. pass ^s Merid.	THE SUN'S			Place of the D's Node.
	Semi- diameter	Hourly Motion.	Logar. Distance.	
M. S.	M. S.	M. S.		S. D. M.
1. 10, 9	16. 19, 2	2. 32, 9	9. 992641	4. 9. 55
1. 10, 6	16. 19, 1	2. 32, 8	9. 992699	4. 9. 35
1. 10, 1	16. 18, 9	2. 32, 8	9. 992860	4. 9. 16
1. 9, 5	16. 18, 3	2. 32, 6	9. 993098	4. 8. 57
1. 8, 9	16. 17, 6	2. 32, 4	9. 993390	4. 8. 38

ECLIPSES of JUPITER'S SATELLITES

are not *visible* this Month,

JUPITER being *too near* the SUN.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
♿ MERCURY.							
1	7. 6. 15	1. 11 N	8. 22. 17	0. 25 N	22. 49 S	22. 40	
4	7. 15. 12	0. 5 N	8. 26. 32	0. 2 N	23. 23	22. 45	
7	7. 23. 49	0. 58 S	9. 0. 55	0. 20 S	23. 48	22. 51	
10	8. 2. 12	1. 58	9. 5. 22	0. 41	24. 2	22. 58	
13	8. 10. 28	2. 55	9. 9. 55	1. 0	24. 5	23. 5	
16	8. 18. 42	3. 48	9. 14. 32	1. 17	23. 57	23. 12	
19	8. 27. 0	4. 37	9. 19. 15	1. 32	23. 36	23. 20	
22	9. 5. 28	5. 20	9. 24. 3	1. 44	23. 2	23. 28	
25	9. 14. 11	5. 58	9. 28. 56	1. 54	22. 15	23. 37	
28	9. 23. 16	6. 28	10. 3. 55	2. 1	21. 15	23. 45	
31	10. 2. 40	6. 49	10. 0. 1	2. 4	20. 1	23. 54	
♀ VENUS. Int. ♂ 1 ^d . 17 ^h .							
1	3. 10. 44	1. 29 N	9. 12. 19	4. 2 N	18. 53 S	0. 4	
7	3. 20. 28	1. 59	9. 8. 44	5. 16	17. 56	23. 16	
13	4. 0. 13	2. 25	9. 5. 55	6. 5	17. 15	22. 39	
19	4. 9. 58	2. 47	9. 4. 27	6. 28	16. 56	22. 8	
25	4. 19. 43	3. 4	9. 4. 26	6. 29	16. 54	21. 43	
♂ MARS.							
1	0. 1. 0	1. 21 S	10. 29. 20	1. 2 S	12. 41 S	3. 18	
7	0. 4. 43	1. 16	11. 3. 58	0. 57	10. 56	3. 9	
13	0. 8. 25	1. 11	11. 8. 36	0. 52	9. 10	3. 1	
19	0. 12. 5	1. 5	11. 13. 13	0. 47	7. 20	2. 52	
25	0. 15. 44	0. 59	11. 17. 50	0. 42	5. 28	2. 44	
♃ JUPITER. ♂ 5 ^d . 4 ^h .							
1	9. 15. 3	0. 8 S	9. 14. 26	0. 7 S	22. 48 S	0. 14	
7	9. 15. 33	0. 9	9. 15. 50	0. 7	22. 39	23. 51	
13	9. 16. 4	0. 10	9. 17. 14	0. 8	22. 29	23. 31	
19	9. 16. 34	0. 10	9. 18. 37	0. 9	22. 19	23. 11	
25	9. 17. 4	0. 11	9. 20. 0	0. 9	22. 8	22. 52	
♄ SATURN.							
1	1. 27. 46	2. 2 S	1. 23. 9	2. 12 S	16. 27 N	8. 35	
7	1. 28. 0	2. 1	1. 22. 57	2. 10	16. 26	8. 8	
13	1. 28. 13	2. 1	1. 22. 48	2. 9	16. 25	7. 41	
19	1. 28. 26	2. 1	1. 22. 43	2. 7	16. 25	7. 16	
25	1. 28. 39	2. 0	1. 22. 43	2. 5	16. 27	6. 50	
♅ GEORGIAN.							
1	5. 0. 38	0. 45 N	5. 3. 4	0. 47 N	11. 7 N	15. 30	
11	5. 0. 46	0. 45	5. 2. 49	0. 47	11. 13	14. 45	
21	5. 0. 54	0. 45	5. 2. 30	0. 47	11. 20	14. 1	

Days of the Week.	Days of the Month.	THE MOON'S							
		Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S.	D. M. S.	S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Th.	1	1.	20. 8. 28	1.	27. 18. 29	5. 6. 58 S	4. 56. 52 S		
F.	2	2.	4. 27. 40	2.	11. 35. 24	4. 42. 7	4. 23. 6		
Sa.	3	2.	18. 41. 4	2.	25. 44. 4	4. 0. 5	3. 33. 30		
Sun.	4	3.	2. 43. 48	3.	9. 39. 47	3. 3. 55	2. 31. 49		
M.	5	3.	16. 31. 31	3.	23. 18. 43	1. 57. 49	1. 22. 29		
Tu.	6	4.	0. 1. 3	4.	6. 38. 24	0. 46. 22 S	0. 10. 2 S		
W.	7	4.	13. 10. 42	4.	19. 37. 56	0. 26. 0 N	1. 1. 15 N		
Th.	8	4.	26. 0. 20	5.	2. 18. 2	1. 35. 19	2. 7. 48		
F.	9	5.	8. 31. 26	5.	14. 40. 50	2. 38. 23	3. 6. 49		
Sa.	10	5.	20. 46. 41	5.	26. 49. 29	3. 32. 50	3. 56. 15		
Sun.	11	6.	2. 49. 46	6.	8. 48. 5	4. 16. 54	4. 34. 39		
M.	12	6.	14. 45. 0	6.	20. 41. 13	4. 49. 23	5. 0. 58		
Tu.	13	6.	26. 37. 14	7.	2. 33. 41	5. 9. 20	5. 14. 26		
W.	14	7.	8. 31. 12	7.	14. 30. 19	5. 16. 9	5. 14. 28		
Th.	15	7.	20. 31. 37	7.	26. 35. 36	5. 9. 19	5. 0. 42		
F.	16	8.	2. 42. 46	8.	8. 53. 30	4. 48. 35	4. 33. 2		
Sa.	17	8.	15. 8. 13	8.	21. 27. 9	4. 14. 4	3. 51. 49		
Sun.	18	8.	27. 50. 34	9.	4. 18. 37	3. 26. 23	2. 58. 2		
M.	19	9.	10. 51. 19	9.	17. 28. 41	2. 26. 59	1. 53. 36		
Tu.	20	9.	24. 10. 36	10.	0. 56. 52	1. 18. 14	0. 41. 23 N		
W.	21	10.	7. 47. 14	10.	14. 41. 24	0. 3. 33 N	0. 34. 41 S		
Th.	22	10.	21. 38. 57	10.	28. 39. 26	1. 12. 45 S	1. 49. 58		
F.	23	11.	5. 42. 26	11.	12. 47. 25	2. 25. 43	2. 59. 24		
Sa.	24	11.	19. 53. 57	11.	27. 1. 31	3. 30. 27	3. 58. 17		
Sun.	25	0.	4. 9. 41	0.	11. 18. 4	4. 22. 27	4. 42. 34		
M.	26	0.	18. 26. 11	0.	25. 33. 44	4. 58. 17	5. 9. 24		
Tu.	27	1.	2. 40. 25	1.	9. 45. 52	5. 15. 44	5. 17. 14		
W.	28	1.	16. 49. 52	1.	23. 52. 10	5. 13. 57	5. 5. 57		
Th.	29	2.	0. 52. 34	2.	7. 50. 51	4. 53. 27	4. 36. 38		
F.	30	2.	14. 46. 49	2.	21. 40. 15	4. 15. 52	3. 51. 32		
Sa.	31	2.	28. 30. 59	3.	5. 18. 56	3. 24. 1	2. 53. 48		

THE MOON'S							
Days of the Week.	Days of the Month.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
		D	H. M.	D. M.	D. M.	D. M.	D. M.
Th.	1	12	8. 47	49. 6	56. 11	12. 52 N	14. 46 N
F.	2	13	9. 42	63. 23	70. 41	16. 26	17. 51
Sa.	3	14	10. 39	78. 3	85. 29	18. 59	19. 50
Sun.	4	15	11. 36	92. 55	100. 19	20. 22	20. 35
M.	5	16	12. 33	107. 40	114. 55	20. 29	20. 5
Tu.	6	17	13. 27	122. 2	129. 0	19. 25	18. 29
W.	7	18	14. 17	135. 47	142. 23	17. 18	15. 55
Th.	8	19	15. 4	148. 49	155. 4	14. 21	12. 39
F.	9	20	15. 49	161. 10	167. 7	10. 50	8. 55
Sa.	10	21	16. 32	172. 56	178. 39	6. 55	4. 52
Sun.	11	22	17. 14	184. 18	189. 53	2. 48 N	0. 43 N
M.	12	23	17. 55	195. 27	201. 0	1. 22 S	3. 26 S
Tu.	13	24	18. 37	206. 34	212. 10	5. 28	7. 27
W.	14	25	19. 20	217. 51	223. 37	9. 22	11. 12
Th.	15	26	20. 5	229. 29	235. 29	12. 56	14. 32
F.	16	27	20. 53	241. 37	247. 55	16. 0	17. 18
Sa.	17	28	21. 44	254. 21	260. 57	18. 25	19. 20
Sun.	18	29	22. 37	267. 42	274. 36	20. 0	20. 25
M.	19	30	23. 31	281. 36	288. 41	20. 35	20. 27
Tu.	20	1	0	295. 50	303. 1	20. 1	19. 17
W.	21	2	0. 26	310. 11	317. 20	18. 17	17. 0
Th.	22	3	1. 21	324. 26	331. 28	15. 27	13. 40
F.	23	4	2. 15	338. 25	345. 18	11. 41	9. 32
Sa.	24	5	3. 7	352. 6	358. 51	7. 14	4. 50 S
Sun.	25	6	3. 58	5. 33	12. 14	2. 22 S	0. 8 N
M.	26	7	4. 49	18. 54	25. 35	2. 38 N	5. 5
Tu.	27	8	5. 41	32. 17	39. 3	7. 28	9. 44
W.	28	9	6. 33	45. 53	52. 47	11. 52	13. 49
Th.	29	10	7. 27	59. 46	66. 51	15. 34	17. 5
F.	30	11	8. 22	73. 59	81. 11	18. 21	19. 21
Sa.	31	12	9. 18	88. 25	95. 40	20. 3	20. 27

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
Th.	1	16. 14	16. 13	59. 35	59. 32	4801	4805
F.	2	16. 12	16. 10	59. 27	59. 20	4811	4820
Sa.	3	16. 7	16. 4	59. 10	58. 58	4832	4846
Sun.	4	16. 0	15. 56	58. 44	58. 29	4864	4882
M.	5	15. 51	15. 46	58. 12	57. 53	4903	4927
Tu.	6	15. 41	15. 35	57. 33	57. 12	4952	4979
W.	7	15. 29	15. 24	56. 51	56. 30	5005	5032
Th.	8	15. 18	15. 13	56. 10	55. 51	5058	5082
F.	9	15. 8	15. 4	55. 33	55. 16	5106	5128
Sa.	10	15. 0	14. 56	55. 1	54. 49	5148	5163
Sun.	11	14. 54	14. 51	54. 39	54. 31	5177	5187
M.	12	14. 50	14. 49	54. 25	54. 22	5195	5199
Tu.	13	14. 49	14. 50	54. 22	54. 25	5199	5195
W.	14	14. 51	14. 53	54. 30	54. 38	5189	5178
Th.	15	14. 56	14. 59	54. 48	55. 0	5165	5149
F.	16	15. 3	15. 8	55. 15	55. 31	5129	5108
Sa.	17	15. 13	15. 18	55. 49	56. 8	5085	5060
Sun.	18	15. 23	15. 29	56. 28	56. 49	5035	5008
M.	19	15. 34	15. 40	57. 9	57. 29	4983	4957
Tu.	20	15. 45	15. 50	57. 49	58. 8	4932	4908
W.	21	15. 55	15. 59	58. 25	58. 41	4887	4867
Th.	22	16. 3	16. 7	58. 55	59. 7	4850	4835
F.	23	16. 9	16. 11	59. 10	59. 24	4824	4815
Sa.	24	16. 13	16. 13	59. 29	59. 42	4809	4805
Sun.	25	16. 14	16. 14	59. 33	59. 33	4804	4804
M.	26	16. 13	16. 12	59. 31	59. 27	4806	4811
Tu.	27	16. 11	16. 10	59. 23	59. 18	4816	4822
W.	28	16. 8	16. 6	59. 11	59. 4	4831	4839
Th.	29	16. 3	16. 1	58. 55	58. 46	4850	4861
F.	30	15. 58	15. 55	58. 36	58. 25	4874	4887
Sa.	31	15. 52	15. 49	58. 14	58. 1	4901	4917

DISTANCES of MOON'S Center from SUN, and from STARS EAST of her

Stars Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
Pollux.	1	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
	2	61. 17. 8	59. 31. 28	57. 45. 53	56. 0. 22	54. 14. 56	52. 29. 36	50. 44. 25	48. 59. 23
	3	47. 14. 30	45. 29. 46	43. 45. 18	42. 1. 3	40. 17. 3	38. 33. 23	36. 50. 2	35. 7. 3
	3	33. 24. 28							
Regulus.	3	68. 23. 23	66. 37. 27	64. 51. 49	63. 6. 2	61. 20. 35	59. 35. 18	57. 50. 13	56. 5. 20
	4	54. 20. 38	52. 36. 9	50. 51. 53	49. 7. 52	47. 24. 4	45. 40. 32	43. 57. 14	42. 14. 13
	5	40. 31. 27	38. 48. 57	37. 6. 43	35. 24. 47	33. 43. 8	32. 1. 47	30. 20. 45	28. 40. 1
	6	26. 59. 36	25. 19. 30	23. 39. 44	22. 0. 17	20. 21. 10			
	6	-	-	-	-	-	-	-	-
Spica η .	7	67. 49. 59	66. 13. 11	64. 36. 43	63. 0. 35	61. 24. 48	59. 49. 20	58. 14. 13	56. 39. 27
	8	55. 5. 1	53. 30. 56	51. 57. 12	50. 23. 49	48. 50. 46	47. 18. 3	45. 45. 40	44. 13. 39
	9	42. 41. 59	41. 10. 40	39. 39. 43	38. 9. 8	36. 38. 55	35. 9. 3	33. 39. 35	32. 10. 33
	10	30. 41. 55	29. 13. 39	27. 45. 56	26. 18. 45	24. 52. 7	23. 26. 7	22. 0. 49	20. 36. 13
	11	19. 12. 24							
	11	64. 36. 20	63. 8. 9	61. 40. 8	60. 12. 16	58. 44. 34	57. 17. 1	55. 49. 37	54. 22. 21
Antares.	12	52. 55. 14	51. 28. 13	50. 1. 19	48. 34. 34	47. 7. 56	45. 41. 25	44. 15. 2	42. 48. 46
	13	41. 22. 37							
	10	110. 29. 33	118. 6. 14	116. 43. 6	115. 20. 10	113. 57. 26	112. 34. 52	111. 12. 28	100. 50. 13
The Sun.	11	108. 28. 8	107. 6. 11	105. 44. 21	104. 23. 38	103. 1. 3	101. 39. 34	100. 18. 10	98. 56. 51
	12	97. 35. 37	96. 14. 25	94. 53. 15	93. 32. 8	92. 11. 4	90. 50. 2	89. 28. 59	88. 7. 57

Stars Names.	Days	Naon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVII ^h .	XX ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	13	86. 46. 55	85. 25. 51	84. 4. 45	82. 43. 36	81. 22. 25	80. 1. 10	78. 39. 50	77. 18. 25
	14	75. 50. 56	74. 35. 20	73. 13. 37	71. 51. 47	70. 29. 49	69. 7. 43	67. 45. 28	66. 23. 4
	15	65. 0. 30	63. 37. 45	62. 14. 48	60. 51. 40	59. 28. 20	58. 4. 48	56. 41. 2	55. 17. 3
	16	53. 52. 50	52. 28. 23	51. 3. 40	49. 38. 43	48. 13. 30	46. 48. 1	45. 22. 15	43. 56. 13
	17	42. 29. 54	41. 3. 18	39. 36. 24					
α Arietis.	22	73. 37. 42	71. 50. 32	70. 15. 16	68. 33. 56	66. 52. 33	65. 11. 14	63. 29. 52	61. 48. 30
	23	60. 7. 5	58. 25. 49	56. 44. 41	55. 3. 42	53. 22. 51	51. 42. 13	50. 1. 50	48. 21. 43
	24	46. 41. 53							
Aldebaran.	24	76. 46. 2	74. 59. 11	73. 12. 20	71. 25. 27	69. 38. 32	67. 51. 37	66. 4. 42	64. 17. 47
	25	62. 30. 52	60. 43. 58	58. 57. 5	57. 10. 14	55. 23. 25	53. 36. 39	51. 49. 55	50. 3. 15
	26	48. 16. 37	46. 39. 2	44. 43. 31	42. 57. 4	41. 10. 40	39. 24. 21	37. 38. 6	35. 51. 56
	27	34. 5. 51	32. 19. 50	30. 33. 55	28. 48. 5	27. 2. 21	25. 16. 42	23. 31. 10	21. 45. 44
	28	20. 0. 25							
Pollux.	28	64. 33. 4	62. 49. 7	61. 5. 19	59. 21. 40	57. 38. 9	55. 54. 47	54. 11. 37	52. 28. 37
	29	50. 45. 49	49. 3. 12	47. 20. 49	45. 38. 39	43. 56. 44	42. 15. 5	40. 33. 43	38. 52. 38
	30	37. 11. 52							
Regulus.	30	72. 17. 34	70. 34. 6	68. 50. 47	67. 7. 36	65. 24. 34	63. 41. 40	61. 58. 55	60. 16. 19
	31	58. 33. 51	56. 51. 32	55. 9. 22	53. 27. 22	51. 45. 32	50. 3. 52	48. 22. 23	46. 41. 4
	F. 1	44. 59. 56							

DISTANCES of MOON's Center from SUN, and from STARS WEST of her.

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Fomalhaut.	1	78.	4. 39	79.	45. 42	81.	26. 48	83.	7. 55	84.	49. 4	86.	30. 15	88.	11. 22	89.	52. 26
	2	91.	33. 20														
α Arietis.	2	32.	59. 20	34.	33. 47	36.	8. 55	37.	44. 50	39.	21. 33	40.	58. 51	42.	36. 36	44.	14. 48
	3	45.	53. 28	47.	32. 21	49.	11. 25	50.	50. 43	52.	30. 14	54.	9. 51	55.	49. 25	57.	29. 0
	4	59.	8. 37														
Aldebaran.	4	25.	50. 33	27.	35. 0	29.	19. 15	31.	3. 15	32.	47. 3	34.	30. 36	36.	13. 53	37.	56. 56
	5	39.	39. 44	41.	22. 16	43.	4. 30	44.	46. 29	46.	28. 11	48.	9. 35	49.	50. 40	51.	31. 29
	6	53.	11. 59	54.	52. 11	56.	32. 4	58.	11. 39	59.	59. 55	61.	29. 52	63.	8. 30	64.	46. 49
	7	66.	24. 48														
Pollux.	7	23.	33. 54	25.	5. 33	26.	37. 26	28.	9. 30	29.	41. 50	31.	14. 16	32.	46. 44	34.	19. 13
	8	35.	51. 44	37.	24. 6	38.	56. 20	40.	28. 29	42.	0. 31	43.	32. 22	45.	4. 4	46.	35. 36
	9	48.	6. 59	49.	38. 9	51.	9. 9	52.	39. 58	54.	10. 37	55.	41. 4	57.	11. 21	58.	41. 26
	10	60.	11. 21														
Regulus.	10	23.	58. 34	25.	29. 27	27.	0. 8	28.	30. 39	30.	0. 58	31.	31. 7	33.	1. 6	34.	30. 57
	11	36.	0. 38	37.	30. 11	38.	59. 36	40.	28. 55	41.	58. 6	43.	27. 11	44.	56. 11	46.	25. 7
	12	47.	53. 58	49.	22. 46	50.	51. 32	52.	20. 15	53.	48. 56	55.	17. 35	56.	46. 14	58.	14. 53
	13	59.	42. 22	61.	12. 10	62.	40. 54	64.	0. 20	65.	38. 27	67.	7. 19	68.	36. 15	70.	5. 17

Stars Names.	Days	Noon.		III ^a .		VI ^a .		IX ^a .		Midnight.		XV ^a .		XVIII ^b .		XXI ^c .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Spica μ	14	-	-	-	-	-	-	-	-	24.36.	4	26.	2.	27.28.30		28.55.24	
	15	30.22.45		31.50.31	33.18.40			34.47.13		36.16.	8	37.45.23		39.14.58		40.44.53	
	16	42.15.9		43.45.43	45.16.37			46.47.50		48.19.23		49.51.15		51.23.27		52.55.58	
	17	54.28.49		56.1.59	57.35.27			59.9.16		60.43.24		62.17.53		63.52.41		65.27.49	
	18	67.3.16		68.39.3	70.15.11			71.51.37		73.28.24		75.5.30		76.42.55		78.20.39	
	19	79.58.44															
The Sun.	23	-	-	-	-	-	-	-	-	38.48.29		40.27.32		42.6.39		43.45.48	
	24	45.25.1		47.4.17	48.43.32			50.22.51		52.2.10		53.41.30		55.20.50		57.0.11	
	25	58.39.31		60.18.50	61.58.8			63.37.25		65.16.40		66.55.52		68.35.0		70.14.7	
	26	71.53.10		73.32.10	75.11.7			76.50.0		78.28.50		80.7.36		81.46.18		83.24.55	
	27	85.3.28		86.41.55	88.20.17			89.58.34		91.36.46		93.14.52		94.52.54		96.30.49	
	28	98.8.39		99.46.23	101.24.1			103.1.34		104.39.0		106.16.20		107.53.33		109.30.40	
	29	111.7.40		112.44.33	114.21.20			115.57.59		117.34.32		119.10.57		120.47.15			
Fomalhaut.	27	-	-	-	-	-	-	-	-	68.20.27		69.59.32		71.38.37		73.17.46	
	28	74.56.58		76.36.6	78.15.16			79.54.27		81.33.39		83.12.44		84.51.45		86.30.42	
	29	88.9.35		89.48.21	91.27.2			93.5.35		94.44.1							
♈ Aries.	29	-	-	-	-	-	-	-	-	36.0.23		37.33.56		39.7.58		40.42.32	
	30	42.17.38		43.53.8	45.28.58			47.5.6		48.41.32		50.18.7		51.54.50		53.31.42	
	31	55.8.43		56.45.47	58.22.53			60.0.2		61.37.12		63.14.20		64.51.27		66.28.30	
	F. 1	68.5.27															

The SATELLITES of JUPITER

are *not visible* this Month,

JUPITER being *too near* the SUN.

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			○ Full Moon	----- 3. 12. 32
			☾ Last Quarter	----- 11. 14. 8
			● New Moon	----- 19. 1. 5
			☽ First Quarter	----- 25. 17. 3
			Other Phenomena.	
			D. H. M.	
Sun.	1	Septuagesima-Sunday.	1. 0. 7	☽ ζ II
M.	2	Purif. of B. V. Mary.	2. 19. 6	☽ ♄
Tu.	3	Blas. On mor. of Pur. 3 ret.	3 - -	☽ eclipsed, visible.
W.	4		4. 10. 34	☽ α ♂
Th.	5	Agatha.	7. 3. 41	☽ c ♃
F.	6		11. 11. 50	☽ γ ♌
Sa.	7		16. 18	☽ η ♌
Sun.	8	Sexagesima-Sunday.	14. 14. 7	☽ i ad μ ♄
M.	9	In 8 days of Purif. 4 ret.	15. 14. 19	☽ π ♄
Tu.	10		16. 11. 20	☽ 21
W.	11		18. 2. 33	☽ enters ♋
Th.	12	Hilary Term ends.	23. 9. 21	☽ 2 ad ξ Ceti.
F.	13		16. 45	☽ μ Ceti.
Sa.	14	Valentine.	25. 8. 57	☽ γ ♂
Sun.	15	Quinquagesima-Sunday.	10. 47	☽ i ad δ ♂
M.	16		11. 13	☽ 2 ad δ ♂
Tu.	17		15. 48	☽ α ♂
W.	18	Asb-Wednesday. Camb.	27. 15. 16	☽ γ II
Th.	19	[Term div. m.]	28. 6. 3	☽ ζ II
F.	20			
Sa.	21			
Sun.	22	1st Sunday in Lent.		
M.	23			
Tu.	24	St. Matth. Pr. Adol. Fr. b.		
W.	25			
Th.	26			
F.	27			
Sa.	28			

Days of the Week.	Days of the Month.	THE S U N 's			Equation of Time.	Diff.
		Longitude.	R ^t . Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sun.	1	10. 12. 42. 38	21. 0. 43, 4	17. 0. 43	14. 3, 9	
M.	2	10. 13. 43. 26	21. 4. 47, 0	16. 43. 24	14. 11, 0	7, 1
Tu.	3	10. 14. 44. 13	21. 8. 49, 8	16. 25. 47	14. 17, 2	6, 2
W.	4	10. 15. 44. 59	21. 12. 51, 7	16. 7. 53	14. 22, 6	5, 4
Th.	5	10. 16. 45. 44	21. 16. 52, 9	15. 49. 43	14. 27, 2	4, 6
F.	6	10. 17. 46. 27	21. 20. 53, 3	15. 31. 16	14. 31, 0	3, 8
Sa.	7	10. 18. 47. 10	21. 24. 52, 8	15. 12. 33	14. 34, 0	3, 0
Sun.	8	10. 19. 47. 50	21. 28. 51, 6	14. 53. 36	14. 36, 2	2, 2
M.	9	10. 20. 48. 30	21. 32. 49, 6	14. 34. 22	14. 37, 7	1, 5
Tu.	10	10. 21. 49. 9	21. 36. 46, 8	14. 14. 55	14. 38, 4	0, 7
W.	11	10. 22. 49. 47	21. 40. 43, 3	13. 55. 13	14. 38, 3	0, 1
Th.	12	10. 23. 50. 23	21. 44. 39, 0	13. 35. 17	14. 37, 5	0, 8
F.	13	10. 24. 50. 59	21. 48. 33, 9	13. 15. 8	14. 35, 9	1, 6
Sa.	14	10. 25. 51. 33	21. 52. 28, 2	12. 54. 46	14. 33, 6	2, 3
Sun.	15	10. 26. 52. 6	21. 56. 21, 7	12. 34. 11	14. 30, 5	3, 1
M.	16	10. 27. 52. 37	22. 0. 14, 7	12. 13. 24	14. 26, 8	3, 7
Tu.	17	10. 28. 53. 7	22. 4. 6, 7	11. 52. 26	14. 22, 4	4, 4
W.	18	10. 29. 53. 36	22. 7. 58, 1	11. 31. 16	14. 17, 3	5, 1
Th.	19	11. 0. 54. 3	22. 11. 48, 8	11. 9. 55	14. 11, 4	5, 9
F.	20	11. 1. 54. 28	22. 15. 38, 8	10. 48. 24	14. 4, 9	6, 5
Sa.	21	11. 2. 54. 51	22. 19. 28, 2	10. 26. 43	13. 57, 7	7, 2
Sun.	22	11. 3. 55. 13	22. 23. 17, 0	10. 4. 53	13. 49, 9	7, 8
M.	23	11. 4. 55. 32	22. 27. 5, 1	9. 42. 53	13. 41, 5	8, 4
Tu.	24	11. 5. 55. 50	22. 30. 52, 5	9. 20. 45	13. 32, 4	9, 1
W.	25	11. 6. 56. 5	22. 34. 39, 3	8. 58. 29	13. 22, 7	9, 7
Th.	26	11. 7. 56. 18	22. 38. 25, 6	8. 36. 4	13. 12, 4	10, 3
F.	27	11. 8. 56. 29	22. 42. 11, 2	8. 13. 33	13. 1, 6	10, 8
Sa.	28	11. 9. 56. 38	22. 45. 56, 4	7. 50. 54	12. 50, 2	11, 4

II. FEBRUARY 1795. 15

Days	Time of ☉'s pass ^s Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 8, 1	16. 16, 6	2. 32, 2	9.993810	4. 8. 16
7	1. 7, 4	16. 15, 6	2. 31, 8	9.994264	4. 7. 57
13	1. 6, 7	16. 14, 4	2. 31, 5	9.994796	4. 7. 38
19	1. 6, 1	16. 13, 1	2. 31, 0	9.995376	4. 7. 19
25	1. 5, 6	16. 11, 7	2. 30, 5	9.995982	4. 7. 0

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	22. 40. 12	3	14. 11. 42	1	13. 50. 48 Im.
3	17. 8. 25	7	3. 29. 52	1	17. 12. 5 E.
5	11. 36. 43	10	16. 48. 15	8	17. 49. 8 Im.
7	6. 5. 3	14	6. 6. 47	8	21. 11. 2 E.
9	0. 33. 23	17	19. 25. 26	15	21. 48. 6 Im.
10	19. 1. 49	21	8. 44. 14	16	1. 10. 38 E.
12	13. 30. 14	24	22. 3. 10	23	1. 47. 35 Im.
14	7. 58. 43	28	11. 22. 17	23	5. 10. 46 E.
16	2. 27. 13				
17	20. 55. 44				
19	15. 24. 20				
21	9. 52. 53			IV. Satellite.	
23	4. 21. 31			3	11. 12. 8 Im.
24	22. 50. 8			3	14. 54. 49 E.
26	17. 18. 48			20	5. 14. 55 Im.
28	11. 47. 32			20	9. 3. 21 E.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage Merid.	
	Long.	Lat.	Long.	Lat.			
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
♄ MERCURY. Sup. 6 3 ^d . 16 ^h .							
1	10. 6. 8	6. 54 S	10. 10. 44	2. 5 S	19. 34 S	23. 57	
4	10. 16. 32	7. 0	10. 15. 58	2. 2	18. 0	0. 3	
7	10. 27. 45	6. 51	10. 21. 19	1. 57	16. 15	0. 13	
10	11. 9. 56	6. 24	10. 26. 46	1. 47	14. 17	0. 22	
13	11. 23. 15	5. 35	11. 2. 17	1. 31	12. 6	0. 31	
16	0. 7. 52	4. 20	11. 7. 50	1. 10	9. 43	0. 40	
19	0. 23. 50	2. 39	11. 15. 19	0. 43	7. 13	0. 48	
22	1. 11. 6	0. 36 S	11. 18. 36	0. 10 S	4. 40	0. 55	
25	1. 29. 24	1. 38 N	11. 23. 29	0. 28 N	2. 9 S	1. 1	
28	2. 18. 17	3. 46	11. 27. 44	1. 10	0. 10 N	1. 4	
♀ VENUS. 11 ^d . 11 ^h .							
1	5. 1. 7	3. 18 N	9. 6. 8	6. 12 N	17. 8 S	21. 23	
7	5. 10. 52	3. 23	9. 8. 40	5. 46	17. 26	21. 11	
13	5. 20. 37	3. 22	9. 12. 24	5. 14	17. 41	21. 3	
19	6. 0. 20	3. 16	9. 16. 43	4. 38	17. 50	20. 58	
25	6. 10. 2	3. 4	9. 21. 34	4. 0	17. 48	20. 56	
♂ MARS. 11 ^d . 11 ^h .							
1	0. 19. 57	0. 52 S.	11. 23. 10	0. 37 S	3. 17 S	2. 35	
7	0. 23. 32	0. 46	11. 27. 45	0. 32	1. 23 S	2. 28	
13	0. 27. 5	0. 40	0. 2. 18	0. 27	0. 30 N	2. 20	
19	1. 0. 36	0. 33	0. 6. 50	0. 23	2. 22	2. 14	
25	1. 4. 6	0. 27	0. 11. 20	0. 18	4. 13	2. 7	
♃ JUPITER. 11 ^d . 11 ^h .							
1	9. 17. 40	0. 12 S	9. 21. 36	0. 10 S	21. 54 S	23. 30	
7	9. 18. 10	0. 12	9. 22. 58	0. 11	21. 41	23. 12	
13	9. 18. 41	0. 13	9. 24. 17	0. 11	21. 29	21. 54	
19	9. 19. 11	0. 14	9. 25. 33	0. 12	21. 15	21. 36	
25	9. 19. 41	0. 15	9. 26. 48	0. 13	21. 2	21. 18	
♄ SATURN. 11 ^d . 11 ^h .							
1	1. 28. 55	2. 0 S	1. 22. 47	2. 3 S	16. 30 N	6. 22	
7	1. 29. 8	2. 0	1. 22. 55	2. 1	16. 34	5. 58	
13	1. 29. 22	1. 59	1. 23. 7	2. 0	16. 39	5. 35	
19	1. 29. 35	1. 59	1. 23. 22	1. 58	16. 44	5. 13	
25	1. 29. 48	1. 59	1. 23. 42	1. 56	16. 50	4. 53	
♃ GEORGIAN. 8 19 ^d . 9 ^h .							
1	5. 1. 5	0. 45 N	5. 2. 4	0. 48 N	11. 29 N	13. 14	
11	5. 1. 10	0. 45	5. 1. 39	0. 48	11. 39	12. 33	
21	5. 1. 18	0. 45	5. 1. 13	0. 48	11. 48	11. 54	

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Sun.	1	3. 12. 3. 50	3. 18. 45. 37	2. 21. 20 S	1. 47. 11 S
M.	2	3. 25. 24. 5	4. 1. 59. 11	1. 11. 51 S	0. 35. 52 S
Tu.	3	4. 8. 30. 44	4. 14. 58. 49	0. 0. 17 N	0. 36. 5 N
W.	4	4. 21. 23. 17	4. 27. 44. 14	1. 11. 5	1. 44. 53
Th.	5	5. 4. 1. 38	5. 10. 15. 40	2. 17. 3	2. 47. 16
F.	6	5. 16. 26. 25	5. 22. 34. 7	3. 15. 14	3. 40. 42
Sa.	7	5. 28. 39. 1	6. 4. 41. 25	4. 3. 28	4. 23. 21
Sun.	8	6. 10. 41. 39	6. 16. 40. 8	4. 40. 13	4. 53. 54
M.	9	6. 22. 37. 17	6. 28. 33. 37	5. 4. 23	5. 11. 35
Tu.	10	7. 4. 29. 38	7. 10. 25. 53	5. 15. 26	5. 15. 56
W.	11	7. 16. 22. 57	7. 22. 21. 22	5. 13. 3	5. 6. 45
Th.	12	7. 28. 21. 48	8. 4. 24. 45	4. 57. 8	4. 44. 8
F.	13	8. 10. 30. 53	8. 16. 40. 44	4. 27. 49	4. 8. 16
Sa.	14	8. 22. 54. 49	8. 29. 13. 38	3. 45. 33	3. 19. 51
Sun.	15	9. 5. 37. 39	9. 12. 7. 12	2. 51. 17	2. 20. 8
M.	16	9. 18. 42. 33	9. 25. 23. 56	1. 46. 39	1. 11. 16 N
Tu.	17	10. 2. 11. 23	10. 9. 4. 45	0. 34. 19 N	0. 3. 38 S
W.	18	10. 16. 3. 56	10. 23. 8. 30	0. 42. 2 S	1. 20. 16
Th.	19	11. 0. 17. 57	11. 7. 31. 39	1. 57. 38	2. 33. 27
F.	20	11. 14. 48. 50	11. 22. 8. 40	3. 7. 2	3. 37. 42
Sa.	21	11. 29. 30. 12	0. 6. 52. 30	4. 4. 52	4. 28. 0
Sun.	22	0. 14. 14. 39	0. 21. 35. 46	4. 46. 39	5. 0. 32
M.	23	0. 28. 55. 1	1. 6. 11. 43	5. 9. 27	5. 13. 18
Tu.	24	1. 13. 25. 16	1. 20. 35. 13	5. 12. 10	5. 6. 9
W.	25	1. 27. 41. 11	2. 4. 42. 58	4. 55. 29	4. 40. 28
Th.	26	2. 11. 40. 28	2. 18. 33. 36	4. 21. 27	3. 58. 50
F.	27	2. 25. 22. 27	3. 2. 7. 8	3. 33. 3	3. 4. 34
Sa.	28	3. 8. 47. 45	3. 15. 24. 31	2. 33. 50	2. 1. 20

		THE M O O N ' s					
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
			D. H. M.	D. M.	D. M.	D. M.	D. M.
Sun.	1	13	10. 14	102. 53	110. 3	20. 34 N	20. 22 N
M.	2	14	11. 7	117. 8	124. 6	19. 54	19. 10
Tu.	3	15	12. 0	130. 56	137. 38	18. 10	16. 56
W.	4	16	12. 49	144. 10	150. 33	15. 31	13. 55
Th.	5	17	13. 35	156. 46	162. 51	12. 10	10. 18
F.	6	18	14. 20	168. 48	174. 38	8. 21	6. 20
Sa.	7	19	15. 3	180. 23	186. 3	4. 16	2. 10 N
Sun.	8	20	15. 45	191. 40	197. 14	0. 4 N	2. 2 S
M.	9	21	16. 26	202. 49	208. 23	4. 6 S	6. 7
Tu.	10	22	17. 9	214. 1	219. 41	8. 5	9. 58
W.	11	23	17. 53	225. 26	231. 17	11. 45	13. 26
Th.	12	24	18. 40	237. 15	243. 21	14. 59	16. 24
F.	13	25	19. 29	249. 35	255. 58	17. 38	18. 41
Sa.	14	26	20. 20	262. 30	269. 11	19. 31	20. 7
Sun.	15	27	21. 14	276. 0	282. 57	20. 29	20. 35
M.	16	28	22. 9	290. 0	297. 8	20. 24	19. 55
Tu.	17	29	23. 5	304. 19	311. 32	19. 8	18. 3
W.	18	30	0	318. 45	325. 56	16. 42	15. 5
Th.	19	1	0. 1	333. 5	340. 11	13. 13	11. 8
F.	20	2	0. 55	347. 14	354. 14	8. 52	6. 27
Sa.	21	3	1. 49	1. 10	8. 5	3. 56 S	1. 22 S
Sun.	22	4	2. 42	14. 58	21. 50	1. 13 N	3. 47 N
M.	23	5	3. 36	28. 43	35. 37	6. 17	8. 40
Tu.	24	6	4. 29	42. 33	49. 32	10. 55	12. 59
W.	25	7	5. 23	56. 34	63. 38	14. 51	16. 30
Th.	26	8	6. 17	70. 45	77. 55	17. 53	19. 0
F.	27	9	7. 14	85. 5	92. 15	19. 50	20. 22
Sa.	28	10	8. 10	99. 24	106. 29	20. 36	20. 33

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Sun.	1	15.45	15.41	57.48	57.34	4933	4951
M.	2	15.37	15.33	57.19	57.3	4970	4990
Tu.	3	15.28	15.24	56.47	56.31	5010	5031
W.	4	15.20	15.15	56.15	55.59	5051	5072
Th.	5	15.11	15.7	55.43	55.28	5093	5112
F.	6	15.3	15.0	55.14	55.1	5130	5148
Sa.	7	14.57	14.54	54.50	54.40	5162	5175
Sun.	8	14.51	14.50	54.31	54.25	5187	5195
M.	9	14.49	14.48	54.21	54.19	5201	5203
Tu.	10	14.48	14.49	54.20	54.23	5202	5198
W.	11	14.51	14.53	54.29	54.37	5190	5179
Th.	12	14.56	15.0	54.48	55.2	5165	5146
F.	13	15.4	15.9	55.18	55.36	5125	5102
Sa.	14	15.14	15.20	55.56	56.18	5076	5048
Sun.	15	15.27	15.34	56.42	57.7	5017	4985
M.	16	15.41	15.48	57.32	57.58	4953	4921
Tu.	17	15.55	16.1	58.23	58.47	4890	4860
W.	18	16.7	16.13	59.9	59.29	4833	4809
Th.	19	16.17	16.22	59.47	60.2	4787	4769
F.	20	16.25	16.27	60.13	60.21	4755	4746
Sa.	21	16.28	16.28	60.25	60.26	4741	4740
Sun.	22	16.28	16.26	60.24	60.18	4742	4750
M.	23	16.24	16.21	60.10	59.59	4759	4772
Tu.	24	16.17	16.13	59.46	59.32	4788	4805
W.	25	16.9	16.5	59.17	59.1	4823	4843
Th.	26	16.1	15.56	58.45	58.28	4863	4883
F.	27	15.51	15.46	58.10	57.52	4906	4928
Sa.	28	15.41	15.37	57.35	57.19	4950	4970

DISTANCES of MOON's Center from SUN, and from STARS EAST of her.

Stars Names.	Days	Noon.		III ^b .		VI ^b .		IX ^a .		Midnight.	XV ^b .		XVIII ^b .		XXI ^a .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Regulus.	1	44. 59. 57	43. 18. 58		41. 38. 11		39. 57. 35		38. 17. 11		36. 36. 59		34. 56. 59		33. 17. 11	
	2	31. 37. 35	29. 58. 11		28. 19. 0		26. 40. 2		25. 1. 18		23. 22. 48		21. 44. 32		20. 6. 31	
	3	18. 28. 45														
Spica η	3	72. 28. 56	70. 51. 59		69. 15. 16		67. 38. 49		66. 2. 37		64. 26. 40		62. 50. 58		61. 15. 31	
	4	59. 40. 20	58. 5. 24		56. 30. 44		54. 56. 20		53. 22. 13		51. 48. 22		50. 14. 49		48. 41. 33	
	5	47. 8. 34	45. 35. 52		44. 3. 28		42. 31. 23		40. 59. 37		39. 28. 9		37. 57. 3		36. 26. 17	
	6	34. 55. 53	33. 25. 48		31. 56. 9		30. 26. 56		28. 58. 8		27. 29. 50		26. 2. 3		24. 34. 49	
	7	23. 8. 9														
Antares.	7	68. 43. 16	67. 13. 52		65. 44. 41		64. 15. 41		62. 46. 53		61. 18. 16		59. 49. 51		58. 21. 36	
	8	56. 53. 33	55. 25. 40		53. 57. 57		52. 30. 25		51. 3. 3		49. 35. 52		48. 8. 51		46. 42. 1	
	9	45. 15. 21	43. 48. 51		42. 22. 32		40. 56. 24		39. 30. 28		38. 4. 44		36. 39. 13		35. 13. 54	
	10	33. 48. 49														
α Aquilæ.	10	82. 32. 5	81. 14. 16		79. 56. 31		78. 38. 50		77. 21. 13		76. 3. 41		74. 46. 14		73. 28. 53	
	11	72. 11. 37	70. 54. 26		69. 37. 25		68. 20. 30		67. 3. 43							
The Sun,	8	-	-		-		-		-		-		120. 46. 41		119. 25. 18	
	9	118. 4. 0	116. 42. 45		115. 21. 33		114. 0. 24		112. 39. 17		111. 18. 12		109. 57. 8		108. 36. 4	
	10	107. 15. 0	105. 53. 56		104. 32. 49		103. 11. 41		101. 50. 31		100. 29. 18		99. 8. 1		97. 46. 39	
	11	96. 25. 13	95. 3. 42		93. 42. 4		92. 20. 19		90. 58. 28		89. 36. 29		88. 14. 20		86. 52. 3	

Stars Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVII ^h .	XX ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	12	85. 29. 36	84. 6. 59	82. 44. 12	81. 21. 12	79. 58. 1	78. 34. 37	77. 10. 59	75. 47. 7
	13	74. 23. 1	72. 58. 40	71. 34. 3	70. 9. 11	68. 44. 2	67. 18. 36	65. 52. 52	64. 26. 51
	14	63. 0. 31	61. 33. 52	60. 6. 54	58. 39. 35	57. 11. 57	55. 43. 58	54. 15. 37	52. 46. 55
	15	51. 17. 52	49. 48. 27	48. 18. 39	46. 48. 30	45. 17. 58	43. 47. 4	42. 15. 47	40. 44. 9
	16	39. 12. 7							
Aldebaran.	20	67. 10. 1	65. 19. 37	63. 29. 13	61. 38. 49	74. 31. 21	72. 41. 5	70. 50. 46	69. 0. 24
	21	52. 27. 24	50. 37. 19	48. 47. 22	46. 57. 30	59. 48. 26	57. 58. 5	56. 7. 48	54. 17. 34
	22	37. 59. 17	36. 1. 19	34. 12. 32	32. 23. 56	45. 7. 46	43. 18. 10	41. 28. 43	39. 39. 25
	23	23. 24. 2				30. 35. 32	28. 47. 20	26. 59. 21	25. 11. 35
	24	67. 53. 37	66. 7. 31	64. 21. 40	62. 36. 6				
Pollux.	24	53. 52. 31	52. 8. 43	50. 25. 14	48. 42. 6	60. 50. 48	59. 5. 47	57. 21. 4	55. 36. 38
	25	40. 11. 47				46. 59. 19	45. 16. 52	43. 34. 48	41. 53. 7
	26								
	26	75. 23. 32	73. 40. 2	71. 56. 46	70. 13. 45	68. 30. 59	66. 48. 27	65. 6. 10	63. 24. 7
Regulus.	27	61. 42. 19	60. 0. 45	58. 19. 24	56. 38. 18	54. 57. 26	53. 16. 48	51. 36. 24	49. 56. 14
	28	48. 16. 17	46. 36. 33	44. 57. 3	43. 17. 46	41. 38. 42	39. 59. 51	38. 21. 12	36. 42. 45
	M.1	35. 4. 29							

DISTANCES of MOON's Center from SUN, and from STARS WEST of her.

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	1	35. 11. 21	36. 52. 20	38. 33. 8	40. 13. 46	41. 54. 12	43. 34. 27	45. 14. 30	46. 54. 21	47. 54. 12	49. 34. 27	50. 14. 30	51. 54. 21	52. 34. 27	54. 14. 30	55. 54. 21	57. 34. 27
	2	48. 34. 1	50. 13. 28	51. 53. 43	53. 31. 45	55. 10. 35	56. 49. 12	58. 27. 36	60. 5. 48	61. 45. 12	63. 24. 27	65. 3. 48	66. 43. 12	68. 22. 36	70. 1. 48	71. 41. 12	73. 20. 27
	3	61. 43. 46	63. 21. 32	64. 59. 4	66. 36. 23	68. 13. 28	69. 50. 19	71. 26. 56	73. 3. 18	74. 43. 46	76. 21. 32	77. 59. 4	79. 36. 23	81. 13. 28	82. 51. 48	84. 29. 12	86. 7. 27
	4	74. 39. 25	76. 17. 11	77. 55. 26	79. 32. 45	81. 10. 35	82. 48. 12	84. 25. 36	86. 3. 48	87. 43. 46	89. 21. 32	90. 59. 4	92. 36. 23	94. 13. 28	95. 51. 48	97. 29. 12	99. 7. 27
Pollux.	4	31. 23. 10	32. 55. 34	34. 27. 58	36. 0. 23	37. 32. 48	39. 5. 11	40. 37. 30	42. 9. 45	43. 43. 46	45. 16. 11	46. 48. 36	48. 20. 61	49. 52. 20	51. 24. 45	52. 56. 70	54. 28. 33
	5	43. 41. 56	45. 13. 59	46. 45. 55	48. 17. 44	49. 49. 25	51. 20. 57	52. 52. 20	54. 23. 33	55. 32. 48	57. 4. 11	58. 35. 36	60. 6. 61	61. 37. 30	63. 8. 45	64. 39. 70	66. 10. 33
Regulus.	6	55. 54. 35	57. 26. 39	58. 58. 35	60. 30. 23	61. 52. 18	63. 24. 11	64. 56. 5	66. 28. 33	67. 32. 48	69. 4. 11	70. 35. 36	72. 6. 61	73. 37. 30	75. 8. 45	76. 39. 70	78. 10. 33
	7	19. 38. 32	21. 10. 39	22. 42. 34	24. 14. 18	25. 45. 51	27. 17. 13	28. 48. 25	30. 19. 25	31. 43. 46	33. 15. 11	34. 46. 36	36. 17. 61	37. 48. 36	39. 19. 70	40. 50. 33	42. 21. 39
	8	31. 50. 16	33. 22. 56	34. 55. 10	36. 27. 47	38. 0. 23	39. 32. 48	40. 64. 11	42. 3. 48	43. 32. 48	45. 3. 48	46. 34. 27	48. 35. 36	50. 36. 23	52. 37. 30	54. 38. 36	56. 39. 41
	9	43. 51. 17	45. 23. 47	46. 56. 10	48. 19. 28	49. 48. 38	51. 17. 42	52. 46. 41	54. 15. 37	55. 44. 27	57. 13. 14	58. 41. 58	60. 10. 40	61. 39. 19	63. 7. 56	64. 36. 34	66. 5. 10
	10	55. 44. 27	57. 13. 14	58. 41. 58	60. 10. 40	61. 39. 19	63. 7. 56	64. 36. 34	66. 5. 10	67. 33. 47	69. 2. 24	70. 31. 3	71. 59. 44	73. 28. 26	75. 5. 10	76. 34. 27	78. 1. 10
	11	67. 33. 47	69. 2. 24	70. 31. 3	71. 59. 44	73. 28. 26	75. 5. 10	76. 34. 27	78. 1. 10	79. 30. 23	81. 5. 10	82. 34. 27	84. 3. 48	85. 33. 47	87. 3. 48	88. 3. 48	90. 3. 48
Spica η	10	-	-	-	-	-	-	-	-	20. 45. 12	22. 8. 57	23. 33. 12	24. 57. 58	26. 21. 39	27. 45. 12	29. 1. 10	30. 25. 39
	11	26. 23. 17	27. 49. 2	29. 15. 12	30. 41. 45	32. 8. 42	33. 35. 56	35. 3. 29	36. 31. 21	37. 51. 59	39. 22. 0	40. 51. 54	42. 21. 39	43. 51. 59	45. 22. 0	46. 51. 54	48. 21. 39
	12	37. 59. 31	39. 27. 56	40. 56. 39	42. 25. 39	43. 54. 50	45. 24. 30	46. 54. 23	48. 24. 33	49. 48. 38	51. 17. 42	52. 46. 41	54. 15. 37	55. 44. 27	57. 13. 14	58. 41. 58	60. 10. 40
	13	49. 55. 1	51. 25. 46	52. 56. 51	54. 28. 13	55. 59. 55	57. 31. 55	59. 4. 16	60. 36. 56	61. 39. 19	63. 7. 56	64. 36. 34	66. 5. 10	67. 33. 47	69. 2. 24	70. 31. 3	71. 59. 44
Spica μ	14	62. 9. 57	63. 43. 18	65. 16. 59	66. 51. 2	68. 25. 25	69. 50. 19	71. 26. 56	73. 3. 18	74. 43. 46	76. 21. 32	77. 59. 4	79. 36. 23	81. 13. 28	82. 51. 48	84. 29. 12	86. 7. 27
	15	74. 39. 25	76. 17. 11	77. 55. 26	79. 32. 45	81. 10. 35	82. 48. 12	84. 25. 36	86. 3. 48	87. 43. 46	89. 21. 32	90. 59. 4	92. 36. 23	94. 13. 28	95. 51. 48	97. 29. 12	99. 7. 27

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Antares.	14	-	-	-	-	-	-	-	-	23. 39. 22	25. 7. 43	26. 37. 0	28. 7. 14				
	15	29. 38. 30	31. 10. 36	32. 43. 27	34. 17. 5	35. 51. 28	37. 26. 26	39. 2. 1	40. 38. 13								
	16	42. 15. 2	43. 52. 23	45. 30. 16	47. 8. 42	48. 47. 39	50. 27. 6	52. 7. 1	53. 47. 25								
	17	55. 28. 18	57. 9. 38	58. 51. 23	60. 33. 34	62. 16. 10	64. 15. 5	66. 10. 10	68. 10. 10								
The Sun.	22	40. 33. 28	42. 15. 54	43. 58. 14	45. 40. 27	47. 22. 33	49. 4. 31	50. 46. 21	52. 28. 2								
	23	54. 9. 35	55. 50. 58	57. 32. 10	59. 13. 11	60. 54. 2	62. 34. 40	64. 15. 5	65. 55. 18								
	24	67. 35. 18	69. 15. 6	70. 54. 40	72. 34. 1	74. 13. 8	75. 52. 0	77. 30. 37	79. 9. 0								
	25	80. 47. 9	82. 25. 4	84. 2. 44	85. 40. 9	87. 17. 20	88. 54. 15	90. 30. 56	92. 7. 21								
	26	93. 43. 32	95. 19. 27	96. 55. 8	98. 30. 33	100. 5. 44	101. 40. 40	103. 15. 22	104. 49. 49								
	27	106. 24. 2	107. 58. 1	109. 31. 45	111. 5. 15	112. 38. 31	114. 11. 32	115. 44. 19	117. 16. 52								
	28	118. 49. 12	120. 21. 18	-	-	-	-	-	-								
	29	-	-	-	-	-	-	-	-								
♈ Aries.	25	39. 25. 48	41. 0. 25	42. 35. 22	44. 10. 36	45. 46. 10	47. 21. 49	48. 57. 35	50. 33. 28								
	26	52. 9. 27	53. 45. 26	55. 21. 24	56. 57. 23	58. 33. 21	60. 9. 15	61. 45. 4	63. 20. 49								
	27	64. 56. 30	66. 32. 4	68. 7. 32	69. 42. 53	71. 18. 7	72. 53. 13	74. 28. 11	76. 3. 1								
	M. 1	77. 37. 41	-	-	-	-	-	-	-								

CONFIGURATIONS of the SATELLITES of JUPITER
at Half an Hour past VI o'Clock in the *Morning*.

1		2.	¹	○	5.	4.
2	3 ●		²	○	1.	4.
3		3.	¹	○	² 4.	
4	1 ● 4 ●	³		2; ○		
5		4.	² ³	○	¹	
6		4.		1.	○ 2 3	
7		4.			○ ¹ _{2.}	³
8		4.	² ¹	○		3.
9		⁴	²	○	1.	3 ●
10		⁴	3.	¹	○	²
11	2 ●	3 4		○ 1.		
12	1. ○	2 3	⁴	○		
13			1.	○	2. 3. 4	
14				○ ¹ _{2.}	³ ⁴	

Configurations at VI o' Clock in the *Morning*.

15		1 2	○	3.	⁴
16		²	○	3. 1.	⁴
17		3.	¹	○	² 4.
18		3.		○ 1 2	4.
19		² _{2.}	¹	○	4.
20	1 ● 2. ○ 3. ○			○	4.
21			4.	○ ¹ _{2.}	³
22		4.	1 2	○	3.
23		4.	²	○	¹ _{7.}
24		4.	3.	¹	○ ²
25		4.	3.		○ 1 2
26		⁴	³ _{2.}	¹	○
27		⁴	³ _{2.}	○	1 ●
28		⁴		○ ¹ _{2.}	³

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			○ Full Moon	5. 5. 6
			☾ Last Quarter	13. 9. 19
			● New Moon	20. 11. 42
			☽ First Quarter	27. 2. 22
			Other Phenomena.	
			D. H. M.	
			2. 1. 48	☽ ♄ ☽
			3. 17. 53	☽ α ♄
			4. - -	♄ ☿ diff. Lat. 1'.
			6. 11. 20	☽ c ☿
			9. - -	☿ Stationary.
			10. 19. 30	☽ γ ♄
			11. 0. 1	☽ η ♄
			13. 22. 59	☽ i ad μ ♄
			14. 23. 46	☽ π ♄
			16. 7. 11	☽ 24
			17. 15. 28	☽ γ ☿
			18. 28	☽ δ ☿
			18. 3. 17	☽ i ☿
			20. 2. 53	☉ enters ♑
			22. 18. 2	☽ 2 ad ξ Ceti.
			23. 1. 10	☽ μ Ceti.
			24. 16. 2	☽ γ ☿
			17. 48	☽ i ad δ ☿
			18. 14	☽ 2 ad δ ☿
			21. 33	L. α ☿, * 12'S. of ☽'s C.
			22. 3	E. α ☿, * 14'S. of ☽'s C.
			26. 21. 7	☽ ♄ ♄
			27. 11. 43	☽ ζ ♄
			29. 7. 27	☽ δ ☽
			30. 23. 51	☽ α ♄
Sun.	1	2d Sunday in Lent. David.		
M.	2	Chad.		
Tu.	3			
W.	4			
Th.	5			
F.	6			
Sa.	7	Perpetua.		
Sun.	8	3d Sunday in Lent.		
M.	9			
Tu.	10			
W.	11			
Th.	12	Gregory, M.		
F.	13			
Sa.	14			
Sun.	15	4th Sunday in Lent.		
M.	16			
Tu.	17			
W.	18	Edw. K. of W. Saxons.		
Th.	19			
F.	20			
Sa.	21	Benedict.		
Sun.	22	5th Sunday in Lent.		
M.	23			
Tu.	24	Annun. of V. Mary.		
W.	25			
Th.	26			
F.	27	Camb. Term ends.		
Sa.	28	Oxford Term ends.		
Sun.	29	6th Sunday in Lent. Palm		
M.	30	[Sunday.		
Tu.	31			

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time.	Diff.
		Longitude.	R. Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sun.	1	11. 10. 56. 46	22. 49. 41, 0	7. 28. 7	12. 38, 3	
M.	2	11. 11. 56. 50	22. 53. 25, 0	7. 5. 16	12. 25, 7	12, 6
Tu.	3	11. 12. 56. 52	22. 57. 8, 5	6. 42. 19	12. 12, 7	13, 0
W.	4	11. 13. 56. 52	23. 0. 51, 5	6. 19. 16	11. 59, 2	13, 5
Th.	5	11. 14. 56. 50	23. 4. 34, 1	5. 56. 8	11. 45, 3	13, 9
						14, 4
F.	6	11. 15. 56. 46	23. 8. 16, 3	5. 32. 55	11. 30, 9	
Sa.	7	11. 16. 56. 40	23. 11. 58, 0	5. 9. 38	11. 16, 2	14, 7
Sun.	8	11. 17. 56. 33	23. 15. 39, 3	4. 46. 16	11. 1, 1	15, 1
M.	9	11. 18. 56. 24	23. 19. 20, 4	4. 22. 51	10. 45, 6	15, 5
Tu.	10	11. 19. 56. 13	23. 23. 1, 1	3. 59. 22	10. 29, 7	15, 9
						16, 2
W.	11	11. 20. 56. 1	23. 26. 41, 4	3. 35. 50	10. 13, 5	
Th.	12	11. 21. 55. 47	23. 30. 21, 5	3. 12. 16	9. 57, 0	16, 5
F.	13	11. 22. 55. 31	23. 34. 1, 3	2. 48. 39	9. 40, 3	16, 7
Sa.	14	11. 23. 55. 13	23. 37. 40, 8	2. 25. 1	9. 23, 4	16, 9
Sun.	15	11. 24. 54. 54	23. 41. 20, 0	2. 1. 21	9. 6, 2	17, 2
						17, 4
M.	16	11. 25. 54. 33	23. 44. 59, 1	1. 37. 40	8. 48, 8	
Tu.	17	11. 26. 54. 11	23. 48. 38, 1	1. 13. 57	8. 31, 2	17, 6
W.	18	11. 27. 53. 46	23. 52. 16, 9	0. 50. 15	8. 13, 4	17, 8
Th.	19	11. 28. 53. 20	23. 55. 55, 4	0. 26. 32	7. 55, 5	17, 9
F.	20	11. 29. 52. 52	23. 59. 33, 8	0. 2. 50	7. 37, 4	18, 1
				<i>North.</i>		18, 2
Sa.	21	0. 0. 52. 21	0. 3. 12, 1	0. 20. 51	7. 19, 2	
Sun.	22	0. 1. 51. 48	0. 6. 50, 3	0. 44. 31	7. 0, 9	18, 3
M.	23	0. 2. 51. 14	0. 10. 28, 4	1. 8. 9	6. 42, 5	18, 4
Tu.	24	0. 3. 50. 37	0. 14. 6, 4	1. 31. 46	6. 24, 1	18, 4
W.	25	0. 4. 49. 58	0. 17. 44, 4	1. 55. 20	6. 5, 5	18, 6
						18, 6
Th.	26	0. 5. 49. 16	0. 21. 22, 2	2. 18. 52	5. 46, 9	
F.	27	0. 6. 48. 32	0. 25. 0, 1	2. 42. 21	5. 28, 3	18, 6
Sa.	28	0. 7. 47. 46	0. 28. 38, 0	3. 5. 46	5. 9, 6	18, 7
Sun.	29	0. 8. 46. 57	0. 32. 15, 9	3. 29. 8	4. 50, 9	18, 7
M.	30	0. 9. 46. 6	0. 35. 53, 8	3. 52. 25	4. 32, 3	18, 6
						18, 6
Tu.	31	0. 10. 45. 12	0. 39. 31, 7	4. 15. 38	4. 13, 7	

Days	Time of ☉'s Semidiam. pals. Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 5, 3	16. 10, 7	2. 30, 2	9.996404	4. 6. 47
7	1. 4, 9	16. 9, 3	2. 29, 7	9.997082	4. 6. 28
13	1. 4, 6	16. 7, 6	2. 29, 2	9.997811	4. 6. 9
19	1. 4, 4	16. 6, 0	2. 28, 8	9.998561	4. 5. 50
25	1. 4, 3	16. 4, 4	2. 28, 4	9.999302	4. 5. 31

ECLIPSES of the SATELLITES of JUPITER.

I. Sarellire.			II. Sarellire.			III. Satellite.		
<i>Immersion.</i>			<i>Immersion.</i>					
Days.	H. M. S.		Days.	H. M. S.		Days.	H. M. S.	
2	6. 16. 16		4	0. 41. 24		2	5. 47. 33	Im.
4	0. 45. 1		7	14. 0. 38		2	9. 11. 23	E.
5	19. 13. 47		11	3. 19. 54		9	9. 47. 53	Im.
7	13. 42. 33		14	16. 39. 14		9	13. 12. 17	E.
9	8. 11. 20		18	5. 58. 35		16	13. 48. 31	Im.
11	2. 40. 9		21	19. 17. 57		16	17. 13. 28	E.
12	21. 8. 58		25	8. 37. 19		23	17. 49. 17	Im.
14	15. 37. 48		28	21. 56. 41		23	21. 14. 49	E.
16	10. 6. 39					30	21. 50. 3	Im.
18	4. 35. 31					31	1. 16. 8	E.
19	23. 4. 23					IV. Satellite.		
21	17. 33. 14					8	23. 20. 45	Im.
23	12. 2. 6					9	3. 14. 38	E.
25	6. 30. 58					25	17. 28. 22	Im.
27	0. 59. 51					25	21. 27. 18	E.
28	19. 28. 43							
30	13. 57. 35							

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.		D. M.	H. M.
♄ Gr. Elong. 2°. <i>M E R C U R Y</i> . Inf. ♂ 19°. 2 ^h 1/2.							
1	2. 24. 30	4. 23 N	11. 28. 57	1. 24 N	0. 52 N	1. 4	
4	3. 13. 15	5. 54	0. 1. 50	2. 0	2. 41	1. 3	
7	4. 1. 0	6. 46	0. 3. 43	2. 44	3. 59	0. 57	
10	4. 17. 29	7. 0	0. 4. 13	3. 14	4. 38	0. 47	
13	5. 2. 32	6. 43	0. 3. 26	3. 31	4. 36	0. 33	
16	5. 16. 11	6. 3	0. 1. 35	3. 33	3. 54	0. 15	
19	5. 28. 35	5. 9	11. 29. 5	3. 18	2. 41	23. 49	
22	6. 9. 55	4. 8	11. 26. 26	2. 48	1. 8 N	23. 29	
25	6. 20. 23	3. 2	11. 24. 3	2. 7	0. 25 S	23. 12	
28	7. 0. 10	1. 55	11. 22. 20	1. 20	1. 48	22. 56	
31	7. 9. 23	0. 48	11. 21. 26	0. 33	2. 54	22. 44	
♀ Gr. Elong. 12°. <i>V E N U S</i> .							
1	6. 16. 30	2. 53 N	9. 25. 3	3. 34 N	17. 38 S	20. 56	
7	6. 26. 9	2. 33	10. 0. 33	2. 55	17. 12	20. 57	
13	7. 5. 48	2. 8	10. 6. 22	2. 17	16. 29	20. 59	
19	7. 15. 24	1. 40	10. 12. 26	1. 40	15. 29	21. 2	
25	7. 24. 58	1. 9	10. 18. 40	1. 5	14. 12	21. 6	
♂ <i>M A R S</i> .							
1	1. 6. 24	0. 22 S	0. 14. 19	0. 15 S	5. 25 N	2. 3	
7	1. 9. 50	0. 16	0. 18. 47	0. 10	7. 12	1. 58	
13	1. 13. 14	0. 9	0. 23. 13	0. 6	8. 56	1. 52	
19	1. 16. 36	0. 3 S	0. 27. 37	0. 2 S	10. 36	1. 47	
25	1. 19. 55	0. 4 N	1. 1. 59	0. 2 N	12. 13	1. 41	
♃ <i>J U P I T E R</i> .							
1	9. 20. 3	0. 15 S	9. 27. 38	0. 13 S	20. 52 S	21. 7	
7	9. 20. 33	0. 16	9. 28. 49	0. 14	20. 39	20. 50	
13	9. 21. 4	0. 16	9. 29. 56	0. 15	20. 26	20. 32	
19	9. 21. 34	0. 17	10. 1. 0	0. 16	20. 13	20. 15	
25	9. 22. 5	0. 18	10. 2. 0	0. 17	20. 0	19. 57	
♄ <i>S A T U R N</i> .							
1	1. 29. 57	1. 58 S	1. 23. 57	1. 55 S	16. 55 N	4. 38	
7	2. 0. 10	1. 58	1. 24. 22	1. 54	17. 3	4. 17	
13	2. 0. 24	1. 58	1. 24. 50	1. 52	17. 11	3. 57	
19	2. 0. 37	1. 57	1. 25. 21	1. 51	17. 20	3. 37	
25	2. 0. 50	1. 57	1. 25. 55	1. 50	17. 29	3. 18	
♄ <i>G E O R G I A N</i> .							
1	5. 1. 24	0. 45 N	5. 0. 52	0. 48 N	11. 55 N	11. 21	
11	5. 1. 32	0. 45	5. 0. 27	0. 48	12. 4	10. 43	
21	5. 1. 40	0. 45	5. 0. 4	0. 48	12. 12	10. 5	

		THE MOON'S			
		Longitude.		Latitude.	
Days of the Week.	Days of the Month.	Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Sun.	1	3. 21. 57. 40	3. 28. 27. 20	1. 27. 32 S	0. 52. 55 S
M.	2	4. 4. 53. 40	4. 11. 16. 58	0. 17. 56 S	0. 16. 58 N
Tu.	3	4. 17. 37. 22	4. 23. 55. 4	0. 51. 21 N	1. 24. 49
W.	4	5. 0. 10. 7	5. 6. 22. 44	1. 57. 1	2. 27. 31
Th.	5	5. 12. 32. 57	5. 18. 40. 56	2. 56. 5	3. 22. 23
F.	6	5. 24. 46. 44	6. 0. 50. 33	3. 46. 9	4. 7. 14
Sa.	7	6. 6. 52. 29	6. 12. 52. 47	4. 25. 23	4. 40. 31
Sun.	8	6. 18. 51. 33	6. 24. 49. 7	4. 52. 29	5. 1. 13
M.	9	7. 0. 45. 45	7. 6. 41. 44	5. 6. 40	5. 8. 48
Tu.	10	7. 12. 37. 30	7. 18. 33. 26	5. 7. 37	5. 3. 8
W.	11	7. 24. 30. 0	8. 0. 27. 46	4. 55. 22	4. 44. 24
Th.	12	8. 6. 27. 7	8. 12. 28. 43	4. 30. 16	4. 13. 2
F.	13	8. 18. 33. 9	8. 24. 40. 56	3. 52. 51	3. 29. 48
Sa.	14	9. 0. 52. 46	9. 7. 9. 9	3. 4. 3	2. 35. 46
Sun.	15	9. 13. 30. 48	9. 19. 58. 9	2. 5. 10	1. 32. 33
M.	16	9. 26. 31. 44	10. 3. 11. 56	0. 58. 12 N	0. 22. 30 N
Tu.	17	10. 9. 59. 4	10. 16. 53. 15	0. 14. 6 S	0. 51. 5 S
W.	18	10. 23. 54. 33	11. 1. 2. 41	1. 27. 53	2. 3. 52
Th.	19	11. 8. 17. 22	11. 15. 37. 56	2. 38. 21	3. 10. 39
F.	20	11. 23. 3. 34	0. 0. 33. 18	3. 40. 3	4. 5. 55
Sa.	21	0. 8. 5. 57	0. 15. 40. 16	4. 27. 37	4. 44. 41
Sun.	22	0. 23. 14. 55	1. 0. 48. 36	4. 56. 46	5. 3. 37
M.	23	1. 8. 20. 2	1. 15. 48. 8	5. 5. 12	5. 1. 32
Tu.	24	1. 23. 11. 56	2. 0. 30. 40	4. 52. 51	4. 39. 27
W.	25	2. 7. 43. 45	2. 14. 50. 47	4. 21. 44	4. 0. 11
Th.	26	2. 21. 51. 39	2. 28. 46. 15	3. 35. 18	3. 7. 36
F.	27	3. 5. 34. 45	3. 12. 17. 23	2. 37. 35	2. 5. 50
Sa.	28	3. 18. 54. 27	3. 25. 26. 23	1. 32. 49	0. 58. 59 S
Sun.	29	4. 1. 53. 33	4. 8. 16. 25	0. 24. 47 S	0. 9. 18 N
M.	30	4. 14. 35. 24	4. 20. 50. 56	0. 42. 53 N	1. 15. 37
Tu.	31	4. 27. 3. 27	5. 3. 13. 17	1. 47. 8	2. 17. 6

THE MOON'S									
Days of the Week.	Days of the Month.	Age.	Passage	Right Ascension.		Declination.			
			Merid.	Noon.	Midnight.	Noon.	Midnight.		
				H. M.	D. M.	D. M.	D. M.	D. M.	
Sun.	1	11	9. 3	113. 29	120. 23	20. 13 N	19. 37 N		
M.	2	12	9. 55	127. 10	133. 50	18. 46	17. 41		
Tu.	3	13	10. 45	140. 21	146. 43	16. 23	14. 54		
W.	4	14	11. 32	152. 57	159. 4	13. 15	11. 28		
Th.	5	15	12. 18	165. 3	170. 56	9. 34	7. 35		
F.	6	16	13. 2	176. 43	182. 25	5. 32	3. 27 N		
Sa.	7	17	13. 44	188. 4	193. 40	1. 20 N	0. 47 S		
Sun.	8	18	14. 26	199. 15	204. 50	2. 53 S	4. 57		
M.	9	19	15. 9	210. 26	216. 4	6. 58	8. 54		
Tu.	10	20	15. 53	221. 45	227. 31	10. 45	12. 30		
W.	11	21	16. 38	233. 22	239. 19	14. 8	15. 38		
Th.	12	22	17. 25	245. 23	251. 35	16. 58	18. 8		
F.	13	23	18. 14	257. 54	264. 21	19. 6	19. 52		
Sa.	14	24	19. 6	270. 56	277. 38	20. 24	20. 41		
Sun.	15	25	20. 0	284. 27	291. 22	20. 42	20. 27		
M.	16	26	20. 55	298. 21	305. 24	19. 55	19. 6		
Tu.	17	27	21. 50	312. 30	319. 37	17. 59	16. 36		
W.	18	28	22. 45	326. 44	333. 51	14. 57	13. 2		
Th.	19	29	23. 40	340. 56	348. 1	10. 55	8. 36		
F.	20	1	0	355. 5	2. 9	6. 7	3. 32 S		
Sa.	21	2	0. 35	9. 12	16. 16	0. 53 S	1. 48 N		
Sun.	22	3	1. 30	23. 21	30. 28	4. 27 N	7. 1		
M.	23	4	2. 26	37. 37	44. 49	9. 23	11. 46		
Tu.	24	5	3. 22	52. 4	59. 21	13. 52	15. 43		
W.	25	6	4. 19	66. 41	74. 2	17. 19	18. 37		
Th.	26	7	5. 16	81. 22	88. 41	19. 38	20. 20		
F.	27	8	6. 12	95. 58	103. 9	20. 43	20. 49		
Sa.	28	9	7. 7	110. 15	117. 13	20. 30	20. 6		
Sun.	29	10	8. 0	124. 3	130. 45	19. 21	18. 22		
M.	30	11	8. 51	137. 17	143. 40	17. 9	15. 45		
Tu.	31	12	9. 39	149. 54	156. 0	14. 11	12. 28		

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Sun.	1	15. 33	15. 28	57. 3	56. 47	4990	5010
M.	2	15. 24	15. 20	56. 32	56. 17	5020	5049
Tu.	3	15. 16	15. 12	56. 2	55. 48	5068	5086
W.	4	15. 8	15. 5	55. 34	55. 21	5104	5122
Th.	5	15. 2	14. 59	55. 9	54. 58	5137	5152
F.	6	14. 56	14. 53	54. 48	54. 39	5165	5177
Sa.	7	14. 51	14. 49	54. 31	54. 24	5187	5197
Sun.	8	14. 48	14. 47	54. 19	54. 15	5203	5209
M.	9	14. 46	14. 46	54. 12	54. 12	5213	5213
Tu.	10	14. 47	14. 48	54. 14	54. 18	5210	5205
W.	11	14. 50	14. 52	54. 24	54. 32	5197	5186
Th.	12	14. 55	14. 58	54. 43	54. 57	5171	5153
F.	13	15. 3	15. 8	55. 13	55. 31	5132	5108
Sa.	14	15. 13	15. 19	55. 52	56. 15	5081	5051
Sun.	15	15. 26	15. 33	56. 39	57. 5	5021	4987
M.	16	15. 41	15. 48	57. 33	58. 1	492	4917
Tu.	17	15. 56	16. 4	58. 30	58. 58	4881	4846
W.	18	16. 11	16. 18	59. 25	59. 50	4813	4783
Th.	19	16. 24	16. 30	60. 13	60. 33	4755	4732
F.	20	16. 34	16. 38	60. 49	61. 1	4712	4648
Sa.	21	16. 40	16. 40	61. 9	61. 12	4689	4685
Sun.	22	16. 40	16. 38	61. 11	61. 5	4686	4693
M.	23	16. 36	16. 32	60. 55	60. 41	4705	4722
Tu.	24	16. 28	16. 22	60. 24	60. 4	4742	4766
W.	25	16. 16	16. 10	59. 43	59. 21	4792	4819
Th.	26	16. 4	15. 57	58. 57	58. 33	4848	4877
F.	27	15. 51	15. 44	58. 9	57. 45	4907	4937
Sa.	28	15. 38	15. 32	57. 23	57. 2	4965	4991
Sun.	29	15. 27	15. 22	56. 41	56. 22	5018	5042
M.	30	15. 17	15. 12	56. 3	55. 46	5067	5089
Tu.	31	15. 8	15. 4	55. 31	55. 16	5108	5128

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
α Pegasi.	12	101.46.44	100.24.8	99.1.19	97.38.16	86.26.0	87.50.47	86.26.0	85.1.1	96.15.0	94.51.30	93.27.48	92.3.52	92.3.52	92.3.52	92.3.52	92.3.52
	13	90.39.43	89.15.22	87.50.47	86.26.0	85.1.1	83.3.4	82.57.50	81.36.58	80.10.32	78.43.47	77.16.42	75.49.17	74.21.30	72.53.22	70.54.43	68.30.6
	14	83.3.4	81.36.58	80.10.32	78.43.47	77.16.42	75.49.17	74.21.30	72.53.22	70.54.43	68.30.6	66.1.11	63.56.44	62.25.55	60.54.43	58.30.6	56.1.11
	15	71.24.53	69.56.1	68.26.46	66.57.8	65.27.8	63.56.44	62.25.55	60.54.43	58.30.6	56.1.11	53.12.29	51.38.46	49.31.11	47.5.1	45.45.12	43.24.33
The Sun.	16	59.23.6	57.51.4	56.18.37	54.45.46	53.12.29	51.38.46	49.31.11	47.5.1	45.45.12	43.24.33	41.26.3	39.46.43	37.3.32	35.57.23	34.4.46	32.12.19
	17	46.55.9	45.19.47	43.44.0	42.7.48	40.31.11	38.40.48	37.50.9	36.3.32	34.4.46	32.12.19	30.20.5	28.28.1	26.36.10	24.44.34	22.53.12	21.2.6
	22	43.29.12	41.36.4	39.43.3	37.50.9	36.3.32	34.4.46	32.12.19	30.20.5	28.28.1	26.36.10	24.44.34	22.53.12	21.2.6	19.5.1	17.40.59	15.28.1
	23	28.28.1	26.36.10	24.44.34	22.53.12	21.2.6	19.5.1	17.40.59	15.28.1	13.36.10	11.43.34	9.50.47	8.3.52	6.1.11	4.45.12	2.3.52	0.3.52
Pollux.	23	58.14.53	56.26.35	54.38.40	52.51.9	51.4.1	49.17.17	47.31.1	45.45.12	43.24.33	41.26.3	39.46.43	37.3.32	35.57.23	34.4.46	32.12.19	30.20.5
	24	43.59.51	42.14.57	40.30.36	38.40.48	37.50.9	36.3.32	34.4.46	32.12.19	30.20.5	28.28.1	26.36.10	24.44.34	22.53.12	21.2.6	19.5.1	17.40.59
	25	30.10.42	28.28.1	26.36.10	24.44.34	22.53.12	21.2.6	19.5.1	17.40.59	15.28.1	13.36.10	11.43.34	9.50.47	8.3.52	6.1.11	4.45.12	2.3.52
	26	65.12.38	63.28.25	61.44.34	60.1.4	58.17.57	56.35.11	54.52.46	53.10.43	51.4.1	49.17.17	47.31.1	45.45.12	43.24.33	41.26.3	39.46.43	37.3.32
Regulus.	27	51.29.1	49.47.40	48.6.40	46.46.1	44.45.42	43.5.43	41.26.3	39.46.43	37.3.32	35.57.23	34.4.46	32.12.19	30.20.5	28.28.1	26.36.10	24.44.34
	28	38.7.42	36.28.59	34.50.36	33.12.30	31.34.43	29.57.14	28.20.3	26.43.9	24.44.34	22.53.12	21.2.6	19.5.1	17.40.59	15.28.1	13.36.10	11.43.34
	29	25.6.33	23.32.14	21.54.11	20.18.25	18.42.55	17.1.1	15.28.1	13.36.10	11.43.34	9.50.47	8.3.52	6.1.11	4.45.12	2.3.52	0.3.52	0.3.52
	30	66.26.36	64.52.53	63.19.25	61.46.10	60.13.10	58.40.22	57.7.49	55.35.28	53.10.43	51.4.1	49.17.17	47.31.1	45.45.12	43.24.33	41.26.3	39.46.43
Spica η	31	54.3.21	52.31.26	50.59.45	49.28.16	47.5.1	45.45.12	43.24.33	41.26.3	39.46.43	37.3.32	35.57.23	34.4.46	32.12.19	30.20.5	28.28.1	26.36.10
	A.1	41.54.11	39.46.43	37.3.32	35.57.23	34.4.46	32.12.19	30.20.5	28.28.1	26.36.10	24.44.34	22.53.12	21.2.6	19.5.1	17.40.59	15.28.1	13.36.10

Stars Names.	Days	Noon.	III ^h .	V ^h .	IX ^h .	Midnight.	XV ^h .	XVII ^h .	XX ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	14	25. 8. 10	26. 35. 45	28. 4. 8	29. 33. 21	31. 3. 24	32. 34. 11	34. 5. 39	35. 37. 47
	15	37. 10. 36	38. 43. 58	40. 17. 53	41. 52. 24	43. 27. 29	45. 3. 5	46. 39. 15	48. 15. 57
	16	49. 53. 10	51. 30. 54	53. 9. 8	54. 47. 53	56. 27. 9	58. 6. 55	59. 47. 10	61. 27. 54
	17	63. 9. 8	64. 50. 51	66. 33. 2	68. 15. 42	69. 58. 50	71. 42. 27	73. 26. 31	75. 11. 1
	18	76. 55. 58	78. 41. 21	80. 27. 9	82. 13. 22	83. 59. 59	85. 47. 0	87. 34. 23	89. 22. 8
	19	91. 10. 17							
The Sun.	23	49. 32. 0	51. 13. 56	52. 55. 34	54. 36. 55	56. 17. 58	57. 58. 41	59. 39. 4	61. 19. 8
	24	62. 58. 52	64. 38. 15	66. 17. 17	67. 55. 57	69. 34. 18	71. 12. 17	72. 49. 53	74. 27. 9
	25	76. 4. 3	77. 40. 35	79. 16. 45	80. 52. 34	82. 28. 2	84. 3. 8	85. 37. 52	87. 12. 16
	26	88. 46. 18	90. 19. 59	91. 53. 20	93. 26. 21	94. 59. 1	96. 31. 21	98. 3. 22	99. 35. 4
	27	101. 6. 26	102. 37. 29	104. 8. 15	105. 38. 42	107. 8. 51	108. 38. 42	110. 8. 16	111. 37. 34
	28	113. 6. 34	114. 35. 18	116. 3. 45	117. 31. 57	118. 59. 53	120. 27. 33		
Aldebaran.	29	28. 43. 25	30. 24. 44	32. 5. 44	33. 46. 23	35. 26. 42	37. 6. 41	38. 46. 21	40. 25. 43
	30	42. 4. 45	43. 43. 29	45. 21. 55	47. 0. 3	48. 37. 53	50. 15. 26	51. 52. 43	53. 29. 43
	31	55. 6. 26	56. 42. 53	58. 19. 5	59. 55. 2	61. 30. 43	63. 6. 10	64. 41. 22	66. 16. 20
	A. 1	67. 51. 5							
Pollux.	30	24. 51. 24	26. 20. 55	27. 50. 38	29. 20. 34	30. 50. 43	32. 21. 0	33. 51. 22	35. 21. 49
	31	36. 52. 20	38. 22. 49	39. 53. 16	41. 23. 43	42. 54. 9	44. 24. 32	45. 54. 52	47. 25. 7
		48. 55. 18							

CONFIGURATIONS of the SATELLITES of JUPITER
at Half an Hour past V o'Clock in the *Morning*.

1		⁴ 1 0 2	3.
2		² 0 ¹ ⁴ ³	
3		1, 3. 0 ² ⁴	
4		³ 0 1 0 2. ⁴	
5		³ ² ¹ 0 ⁴	
6		³ ² 0 1. ⁴	
7		¹ 0 7 0 3 ⁴	
8	2 0	1. 0 ³ ⁴	
9		² 0 ¹ ⁴ ³	
10		1, 4, 3. 0 ²	
11		3 0 4 0 ¹ ²	
12		⁴ ³ ² ¹ 0	
13		³ ² 0 1.	
14	⁴	¹ 0 ³ ²	
15	⁴	0 ³ 1 0 2 0	
16	⁴ ² ¹	0 ³	

Configurations at V o'Clock in the *Morning*.

17		⁴ 1. 0 ² ³	
18		² ⁴ 0 ¹ ²	
19		³ 1 0 2 0 ⁴	
20		³ ² 0 1. ⁴	
21		¹ 0 ³ ² ⁴	
22	1 0	0 ² ³ ⁴	
23	1. 0	³ 0 ³ ⁴	
24	2. 0	1. 0 ³ ⁴	
25		³ 0 ¹ ² ⁴	
26		³ ¹ ² 0 ⁴	
27		³ ² ⁴ 0 1.	
28		⁴ ¹ 0 ³ ²	
29		⁴ 0 1, 2. ³	
30	⁴	² ¹ 0 ³	
31	⁴	² 0 ³ 1 0	

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			○ Full Moon ---- 3. 22. 10
			☾ Last Quarter --- 12. 1. 4
			● New Moon ---- 18. 20. 20
			☽ First Quarter --- 25. 13. 29
			Other Phenomena.
			D. H. M.
			1 - - - ☿ Stationary.
			2. 17. 55 ☽ c ☿
			7. 2. 12 ☾ γ ☿
			6. 43 ☽ η ☿
			11. 46 ☽ θ ☿
			10. 6. 18 ☽ ι ad μ ♄
			11. 5. 11 ☽ ο ♄
			7. 36 ☽ π ♄
			12 - - - ♀ λ ☿ diff. Lat. 4'.
			11. 41 ☽ ♃
			14. 1. 9 ☽ γ ♄
			4. 13 ☽ δ ♄
			13. 17 ☽ ε ☿
			15. 19. 5 ☽ ι ad ↓ ☿
			19. 49 ☽ 2 ad ↓ ☿
			17. - - - ♀ φ ☿ diff. Lat. 17'
			19. 15. 32 ☽ enters ☿
			21. 1. 30 ☽ γ ☿
			3. 13 ☽ ι δ ☿
			3. 38 ☽ 2 δ ☿
			7. 56 ☽ α ☿
			22. 8. 31 ☽ ζ ☿
			23. 4. 49 ☽ ν ♀
			18. 59 ☽ ζ ♀
			25. 13. 42 ☽ δ ☿
			29. 23. 51 ☽ c ♄
W.	1		
Th.	2	[Chich.	
F.	3	Good Friday. Rd. B. of	
Sa.	4	St. Ambrose.	
Sun.	5	Easter-Day.	
M.	6	Easter-Monday.	
Tu.	7	Easter-Tuesday.	
W.	8		
Th.	9		
F.	10		
Sa.	11		
Sun.	12	1st Sunday after Easter.	
M.	13	[Low-Sunday.	
Tu.	14		
W.	15	Oxf. and Cam. Ter. beg.	
Th.	16		
F.	17		
Sa.	18		
Sun.	19	2d Su. aft. East. Alphege.	
M.	20	From Easter in 15 days	
Tu.	21	[1 ret.	
W.	22	Easter Term begins	
Th.	23	St. George	
F.	24		
Sa.	25	St. Mark. Prs. Mary born.	
Sun.	26	3d Sunday after Easter.	
M.	27	From East. in 3 w. 2 ret.	
Tu.	28		
W.	29		
Th.	30		

Days of the Week.	Days of the Month.	THE S U N ' s			Equation of Time	Diff.
		Longitude.	R ^t . Ascen. in Time.	Declin. North.		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
W.	1	0. 11. 44. 16	0. 43. 9, 8	4. 38. 46	3. 55, 3	18, 3
Th.	2	0. 12. 43. 19	0. 46. 48, 0	5. 1. 50	3. 37, 0	18, 2
F.	3	0. 13. 42. 19	0. 50. 26, 3	5. 24. 48	3. 18, 8	18, 0
Sa.	4	0. 14. 41. 17	0. 54. 4, 7	5. 47. 40	3. 0, 8	17, 9
Sun.	5	0. 15. 40. 12	0. 57. 43, 4	6. 10. 26	2. 42, 9	17, 7
M.	6	0. 16. 39. 6	1. 1. 22, 1	6. 33. 6	2. 25, 2	17, 5
Tu.	7	0. 17. 37. 58	1. 5. 1, 1	6. 55. 39	2. 7, 7	17, 3
W.	8	0. 18. 36. 48	1. 8. 40, 3	7. 18. 5	1. 50, 4	17, 1
Th.	9	0. 19. 35. 35	1. 12. 19, 8	7. 40. 24	1. 33, 3	16, 8
F.	10	0. 20. 34. 21	1. 15. 59, 5	8. 2. 35	1. 16, 5	16, 4
Sa.	11	0. 21. 33. 6	1. 19. 39, 6	8. 24. 38	1. 0, 1	16, 2
Sun.	12	0. 22. 31. 49	1. 23. 20, 0	8. 46. 33	0. 43, 9	15, 8
M.	13	0. 23. 30. 31	1. 27. 0, 7	9. 8. 19	0. 28, 1	15, 4
Tu.	14	0. 24. 29. 11	1. 30. 41, 7	9. 29. 57	0. 12, 7	15, 1
W.	15	0. 25. 27. 50	1. 34. 23, 1	9. 51. 26	Sub. 2, 4	14, 7
Th.	16	0. 26. 26. 27	1. 38. 5, 0	10. 12. 45	0. 17, 1	14, 3
F.	17	0. 27. 25. 2	1. 41. 47, 2	10. 33. 53	0. 31, 4	13, 9
Sa.	18	0. 28. 23. 35	1. 45. 29, 7	10. 54. 51	0. 45, 3	13, 5
Sun.	19	0. 29. 22. 7	1. 49. 12, 7	11. 15. 39	0. 58, 8	13, 2
M.	20	1. 0. 20. 36	1. 52. 56, 2	11. 36. 15	1. 12, 0	12, 7
Tu.	21	1. 1. 19. 4	1. 56. 40, 0	11. 56. 40	1. 24, 7	12, 3
W.	22	1. 2. 17. 29	2. 0. 24, 2	12. 16. 53	1. 37, 0	11, 8
Th.	23	1. 3. 15. 52	2. 4. 8, 8	12. 36. 54	1. 48, 8	11, 4
F.	24	1. 4. 14. 14	2. 7. 54, 0	12. 56. 43	2. 0, 2	10, 9
Sa.	25	1. 5. 12. 33	2. 11. 39, 6	13. 16. 19	2. 11, 1	10, 5
Sun.	26	1. 6. 10. 50	2. 15. 25, 7	13. 35. 42	2. 21, 6	10, 0
M.	27	1. 7. 9. 5	2. 19. 12, 2	13. 54. 51	2. 31, 6	9, 5
Tu.	28	1. 8. 7. 18	2. 22. 59, 2	14. 13. 46	2. 41, 1	9, 0
W.	29	1. 9. 5. 29	2. 26. 46, 7	14. 32. 28	2. 50, 1	8, 5
Th.	30	1. 10. 3. 38	2. 30. 34, 8	14. 50. 55	2. 58, 6	

Days	Time of ☉'s Semidiam. pass ^s Merid.	T H E S U N ' s			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 4. 4	16. 2. 4	2. 27. 7	0.000155	4. 5. 9
7	1. 4. 5	16. 0. 7	2. 27. 2	0.000905	4. 4. 50
13	1. 4. 7	15. 59. 1	2. 26. 6	0.001659	4. 4. 30
19	1. 5. 1	15. 57. 6	2. 26. 1	0.002385	4. 4. 11
25	1. 5. 5	15. 56. 1	2. 25. 6	0.003061	4. 3. 52

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	8. 26. 27	1	11. 16. 1	7	1. 50. 46 Im.
3	2. 55. 16	5	0. 35. 19	7	5. 17. 21 E.
4	21. 24. 6	8	13. 54. 34	14	5. 51. 19 Im.
6	15. 52. 57	12	3. 13. 44	14	9. 18. 24 E.
8	10. 21. 47	15	16. 32. 46	21	9. 51. 34 Im.
10	4. 50. 38	19	5. 51. 44	21	13. 19. 8 E.
11	23. 19. 25	22	19. 10. 33	28	13. 51. 29 Im.
13	17. 48. 11	26	8. 29. 13	28	17. 19. 34 E.
15	12. 16. 57	29	21. 47. 52		
17	6. 45. 42				
19	1. 14. 26				
20	19. 43. 7				
22	14. 11. 49				
24	8. 40. 28				
26	3. 9. 6				
27	21. 37. 45				
29	16. 6. 22				
				IV. Satellite.	
				11	11. 36. 8 Im.
				11	15. 40. 1 E.
				28	5. 42. 36 Im.
				28	9. 51. 6 E.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passa Meri	
	Long.	Lat.	Long.	Lat.			
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
♿ Gr. Elong. 16°. M E R C U R Y.							
1	7. 12. 21	0. 26 N	11. 21. 19	0. 18 N	3. 9 S	22. 4	
4	7. 21. 3	0. 38 S	11. 21. 31	0. 25 S	3. 45	22. 3	4
7	7. 29. 30	1. 39	11. 22. 30	1. 3	3. 57	22. 2	8
10	8. 7. 48	2. 37	11. 24. 7	1. 35	3. 48	22. 2	4
13	8. 16. 2	3. 32	11. 26. 20	2. 2	3. 19	22. 2	2
16	8. 24. 18	4. 22	11. 29. 4	2. 22	2. 32	22. 2	2
19	9. 2. 42	5. 7	0. 2. 13	2. 37	1. 30	22. 2	4
22	9. 11. 19	5. 46	0. 5. 46	2. 46	0. 15 S	22. 2	6
25	9. 20. 15	6. 19	0. 9. 39	2. 50	1. 13 N	22. 2	9
28	9. 29. 38	6. 43	0. 13. 51	2. 48	2. 54	22. 3	3
30	10. 6. 12	6. 54	0. 16. 50	2. 44	4. 6	22. 3	6
♀ V E N U S.							
1	8. 6. 7	0. 31 N	10. 26. 9	0. 27 N	12. 24 S	21. 10	
7	8. 15. 38	0. 3 S	11. 2. 42	0. 3 S	10. 34	21. 14	
13	8. 25. 9	0. 36	11. 9. 21	0. 29	8. 31	21. 18	
19	9. 4. 39	1. 9	11. 16. 5	0. 52	6. 18	21. 21	
25	9. 14. 8	1. 40	11. 22. 53	1. 12	3. 56	21. 24	
♂ M A R S.							
1	1. 23. 46	0. 11 N	1. 7. 4	0. 7 N	14. 0 N	1. 35	
7	1. 27. 2	0. 17	1. 11. 23	0. 11	15. 26	1. 30	
13	2. 0. 15	0. 23	1. 15. 40	0. 15	16. 47	1. 25	
19	2. 3. 26	0. 29	1. 19. 56	0. 19	18. 2	1. 20	
25	2. 6. 35	0. 35	1. 24. 10	0. 22	19. 11	1. 15	
♃ J U P I T E R. □ 25°. 22 ^h 4.							
1	9. 22. 41	0. 18 S	10. 3. 7	0. 18 S	19. 46 S	19. 36	
7	9. 23. 11	0. 19	10. 3. 58	0. 18	19. 35	19. 18	
13	9. 23. 42	0. 20	10. 4. 45	0. 19	19. 25	18. 59	
19	9. 24. 12	0. 20	10. 5. 26	0. 20	19. 16	18. 40	
25	9. 24. 43	0. 21	10. 6. 2	0. 22	19. 8	18. 20	
♄ S A T U R N.							
1	2. 1. 6	1. 57 S	1. 26. 38	1. 48 S	17. 40 N	2. 56	
7	2. 1. 19	1. 56	1. 27. 17	1. 47	17. 50	2. 37	
13	2. 1. 32	1. 56	1. 27. 57	1. 46	18. 0	2. 17	
19	2. 1. 45	1. 55	1. 28. 39	1. 45	18. 10	1. 58	
25	2. 1. 59	1. 55	1. 29. 22	1. 45	18. 20	1. 38	
♁ G E O R G I A N.							
1	5. 1. 49	0. 45 N	4. 29. 42	0. 47 N	12. 19 N	9. 24	
11	5. 1. 56	0. 45	4. 29. 27	0. 47	12. 25	8. 46	
21	5. 2. 4	0. 45	4. 29. 16	0. 47	12. 28	8. 0	

		THE MOON'S							
Days of the Week.	Days of the Month.	Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.		S. D. M. S.		D. M. S.		D. M. S.	
W.	1	5. 9. 20. 49		5. 15. 26. 18		2. 45. 16. N		3. 11. 21. N	
Th.	2	5. 21. 30. 1		5. 27. 32. 13		3. 35. 3		3. 56. 13	
F.	3	6. 3. 33. 1		6. 9. 32. 40		4. 14. 37		4. 30. 8	
Sa.	4	6. 15. 31. 18		6. 21. 29. 4		4. 42. 35		4. 51. 55	
Sun.	5	6. 27. 26. 6		7. 3. 22. 38		4. 58. 0		5. 0. 51	
M.	6	7. 9. 18. 48		7. 15. 14. 50		5. 0. 25		4. 56. 44	
Tu.	7	7. 21. 10. 56		7. 27. 7. 30		4. 49. 50		4. 39. 46	
W.	8	8. 3. 4. 43		8. 9. 3. 0		4. 26. 38		4. 10. 31	
Th.	9	8. 15. 2. 48		8. 21. 4. 28		3. 51. 33		3. 29. 53	
F.	10	8. 27. 8. 35		9. 3. 15. 39		3. 5. 41		2. 39. 9	
Sa.	11	9. 9. 26. 12		9. 15. 40. 54		2. 10. 29		1. 39. 54	
Sun.	12	9. 22. 0. 14		9. 28. 24. 53		1. 7. 45 N		0. 34. 17 N	
M.	13	10. 4. 55. 22		10. 11. 32. 11		0. 0. 12 S		0. 35. 10 S	
Tu.	14	10. 18. 15. 51		10. 25. 6. 38		1. 10. 16		1. 44. 53	
W.	15	11. 2. 4. 46		11. 9. 10. 16		2. 18. 34		2. 50. 40	
Th.	16	11. 16. 23. 4		11. 23. 42. 40		3. 20. 34		3. 47. 38	
F.	17	0. 1. 8. 28		0. 8. 39. 40		4. 11. 10		4. 30. 37	
Sa.	18	0. 16. 15. 7		0. 23. 53. 35		4. 45. 30		4. 55. 23	
Sun.	19	1. 1. 33. 37		1. 9. 13. 45		5. 0. 0		4. 59. 14	
M.	20	1. 16. 52. 27		1. 24. 28. 23		4. 53. 6		4. 41. 45	
Tu.	21	2. 2. 0. 10		2. 9. 26. 47		4. 25. 37		4. 5. 6	
W.	22	2. 16. 47. 20		2. 24. 1. 13		3. 40. 44		3. 13. 10	
Th.	23	3. 1. 8. 4		3. 8. 7. 41		2. 42. 58		2. 10. 45	
F.	24	3. 15. 0. 5		3. 21. 45. 28		1. 37. 10		1. 2. 45 S	
Sa.	25	3. 28. 24. 11		4. 4. 56. 37		0. 28. 0 S		0. 6. 34 N	
Sun.	26	4. 11. 23. 19		4. 17. 44. 46		0. 40. 32 N		1. 13. 34	
M.	27	4. 24. 1. 34		5. 0. 14. 16		1. 45. 15		2. 15. 19	
Tu.	28	5. 6. 23. 26		5. 12. 29. 33		2. 43. 29		3. 9. 31	
W.	29	5. 18. 33. 10		5. 24. 34. 40		3. 33. 11		3. 54. 18	
Th.	30	6. 0. 34. 23		6. 6. 33. 2		4. 12. 42		4. 28. 13	

		THE M O O N ' s					
Days of the Week.	Days of the Month.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
			D.	H. M.	D. M.	D. M.	D. M.
W.	1	13	10. 23	161. 59	167. 51	10. 37 N	8. 41 N
Th.	2	14	11. 7	173. 37	179. 19	6. 40	4. 35
F.	3	15	11. 50	184. 57	190. 32	2. 29 N	0. 21 N
Sa.	4	16	12. 32	196. 6	201. 40	1. 46 S	3. 52 S
Sun.	5	17	13. 14	207. 15	212. 52	5. 56	7. 56
M.	6	18	13. 57	218. 32	224. 15	9. 52	11. 42
Tu.	7	19	14. 42	230. 3	235. 56	13. 25	15. 0
W.	8	20	15. 29	241. 55	248. 1	16. 26	17. 42
Th.	9	21	16. 17	254. 13	260. 32	18. 47	19. 40
F.	10	22	17. 7	266. 57	273. 29	20. 20	20. 46
Sa.	11	23	17. 58	280. 6	286. 49	20. 57	20. 53
Sun.	12	24	18. 51	293. 35	300. 25	20. 33	19. 56
M.	13	25	19. 44	307. 17	314. 10	19. 3	17. 54
Tu.	14	26	20. 37	321. 4	327. 59	16. 29	14. 49
W.	15	27	21. 31	334. 55	341. 51	12. 54	10. 47
Th.	16	28	22. 25	348. 47	355. 44	8. 28	5. 59
F.	17	29	23. 20	2. 43	9. 44	3. 23 S	0. 42 S
Sa.	18	1	6	16. 48	23. 56	2. 0 N	4. 42 N
Sun.	19	2	0. 16	31. 9	38. 26	7. 20	9. 51
M.	20	3	1. 13	45. 49	53. 17	12. 12	14. 21
Tu.	21	4	2. 12	60. 49	68. 25	16. 15	17. 51
W.	22	5	3. 11	76. 2	83. 39	19. 9	20. 7
Th.	23	6	4. 10	91. 13	98. 42	20. 44	21. 2
F.	24	7	5. 7	106. 5	113. 20	21. 0	20. 40
Sa.	25	8	6. 2	120. 25	127. 20	20. 2	19. 9
Sun.	26	9	6. 54	134. 3	140. 35	18. 2	16. 42
M.	27	10	7. 43	146. 56	153. 8	15. 11	13. 30
Tu.	28	11	8. 29	159. 11	165. 5	11. 42	9. 48
W.	29	12	9. 13	170. 53	176. 35	7. 48	5. 44
Th.	30	13	9. 56	182. 12	187. 47	3. 38	1. 30

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
W.	1	15. 0	14. 57	55. 4	54. 52	5144	5159
Th.	2	14. 54	14. 52	54. 42	54. 33	5173	5185
F.	3	14. 50	14. 48	54. 26	54. 19	5194	5203
Sa.	4	14. 47	14. 46	54. 14	54. 10	5210	5215
Sun.	5	14. 45	14. 45	54. 7	54. 6	5219	5221
M.	6	14. 45	14. 45	54. 6	54. 7	5221	5219
Tu.	7	14. 46	14. 47	54. 10	54. 15	5215	5209
W.	8	14. 49	14. 51	54. 22	54. 31	5199	5187
Th.	9	14. 54	14. 58	54. 42	54. 54	5173	5157
F.	10	15. 2	15. 6	55. 9	55. 26	5137	5115
Sa.	11	15. 11	15. 17	55. 45	56. 7	5090	5062
Sun.	12	15. 24	15. 31	56. 30	56. 55	5032	5000
M.	13	15. 38	15. 45	57. 21	57. 49	4967	4932
Tu.	14	15. 53	16. 1	58. 18	58. 47	4896	4860
W.	15	16. 9	16. 16	59. 16	59. 43	4824	4792
Th.	16	16. 23	16. 30	60. 9	60. 32	4760	4733
F.	17	16. 35	16. 40	60. 52	61. 9	4709	4689
Sa.	18	16. 43	16. 45	61. 22	61. 30	4673	4664
Sun.	19	16. 46	16. 45	61. 33	61. 30	4660	4664
M.	20	16. 44	16. 40	61. 23	61. 11	4672	4686
Tu.	21	16. 36	16. 31	60. 55	60. 35	4705	4729
W.	22	16. 25	16. 18	60. 13	59. 48	4755	4786
Th.	23	16. 10	16. 3	59. 21	58. 53	4819	4853
F.	24	15. 55	15. 47	58. 25	57. 57	4887	4922
Sa.	25	15. 40	15. 33	57. 30	57. 4	4956	4989
Sun.	26	15. 26	15. 20	56. 39	56. 16	5021	5050
M.	27	15. 14	15. 9	55. 55	55. 36	5077	5102
Tu.	28	15. 4	15. 0	55. 18	55. 3	5125	5145
W.	29	14. 56	14. 53	54. 49	54. 38	5163	5178
Th.	30	14. 51	14. 49	54. 29	54. 21	5190	5201

DISTANCES of MOON's *Center* from SUN, and from STARS *EAST* of her.

[illegible]

Stars Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	9	-	-	-	120. 19. 49	118. 56. 57	117. 33. 54	116. 10. 39	114. 47. 13
	10	113. 23. 35	111. 59. 44	110. 35. 40	109. 11. 23	107. 46. 53	106. 22. 8	104. 57. 8	103. 31. 53
	11	102. 6. 22	100. 40. 34	99. 14. 28	97. 48. 5	96. 21. 24	94. 54. 25	93. 27. 7	91. 59. 30
	12	90. 31. 34	89. 3. 17	87. 34. 38	86. 5. 39	84. 36. 18	83. 6. 35	81. 36. 29	80. 6. 0
	13	78. 35. 9	77. 3. 54	75. 32. 15	74. 0. 11	72. 27. 43	70. 54. 50	69. 21. 31	67. 47. 48
	14	66. 13. 39	64. 39. 4	63. 4. 4	61. 28. 39	59. 52. 48	58. 16. 31	56. 39. 49	55. 2. 42
Pollux.	15	53. 25. 9	51. 47. 10	50. 8. 48	48. 30. 1	46. 50. 51	45. 11. 17	43. 31. 20	41. 51. 0
	16	40. 10. 20	-	-	-	-	-	-	-
	20	64. 26. 47	62. 34. 10	60. 41. 49	58. 49. 43	56. 57. 54	55. 6. 22	53. 15. 10	51. 24. 20
	21	49. 33. 50	47. 43. 43	45. 54. 2	44. 4. 49	42. 16. 5	40. 27. 50	38. 40. 9	36. 53. 2
	22	35. 6. 31	-	-	-	-	-	-	-
	22	70. 16. 16	68. 27. 11	66. 38. 32	64. 50. 17	63. 2. 28	61. 15. 3	59. 28. 3	57. 41. 28
Regulus.	23	55. 55. 19	54. 9. 37	52. 24. 21	50. 39. 30	48. 55. 6	47. 11. 8	45. 27. 37	43. 44. 31
	24	42. 1. 52	40. 19. 38	38. 37. 59	36. 56. 28	35. 15. 30	33. 34. 58	31. 54. 50	30. 15. 8
	25	28. 35. 50	26. 56. 56	25. 18. 27	23. 40. 22	22. 2. 40	-	-	-
	25	-	-	-	-	-	74. 26. 41	72. 50. 15	71. 14. 10
	26	69. 38. 27	68. 3. 5	66. 28. 3	64. 53. 21	63. 18. 59	61. 44. 56	60. 11. 12	58. 37. 47
	27	57. 4. 41	55. 31. 53	53. 59. 22	52. 27. 9	50. 55. 13	49. 23. 34	47. 52. 12	46. 21. 6
Spica μ .	28	44. 50. 18	43. 19. 46	41. 49. 30	40. 19. 32	38. 49. 50	37. 20. 25	35. 51. 18	34. 22. 29
	29	32. 53. 58	-	-	-	-	-	-	-
	29	78. 42. 6	77. 12. 40	75. 43. 23	74. 14. 14	72. 45. 13	71. 16. 20	69. 47. 35	68. 18. 58
Antares.	30	66. 50. 29	65. 22. 8	63. 53. 55	62. 25. 49	60. 57. 49	59. 29. 56	58. 2. 9	56. 34. 28
	M. 1.	55. 6. 52	-	-	-	-	-	-	-

DISTANCES of MOON's Center from SUN, and from STARS WEST of her.

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
Regulus.	1	12.34.1	14.5.16	15.36.26	17.7.31	18.38.31	20.9.26	21.40.15	23.10.59								
	2	24.41.38	26.12.11	27.42.37	29.12.58	30.43.13	32.13.21	33.43.24	35.13.22								
	3	36.43.15	38.13.2	39.42.45	41.12.23	42.41.56	44.11.25	45.40.49	47.10.10								
	4	48.39.26	50.8.38	51.37.46	53.6.51	54.35.53	56.4.52	57.33.48	59.2.42								
	5	60.31.33	62.0.22	63.29.9	64.57.54	66.26.37	67.55.19	69.24.0	70.52.40								
	6	72.21.19															
Spica μ	6	19.36.59	21.0.19	22.24.10	23.48.30	25.13.20	26.38.35	28.4.9	29.30.4								
	7	30.56.19	32.22.45	33.49.24	35.16.17	36.43.22	38.10.35	39.37.59	41.5.33								
	8	42.33.17	44.1.10	45.29.12	46.57.24	48.25.45	49.54.17	51.22.59	52.51.51								
	9	54.20.51	55.50.2	57.19.24	58.48.58	60.18.42	61.48.38	63.18.46	64.49.7								
	10	66.19.40															
	10	21.36.51	23.0.48	24.25.38	25.51.21	27.17.56	28.45.18	30.13.21	31.42.5								
Antares.	11	33.11.20	34.41.23	36.11.49	37.42.48	39.14.16	40.46.11	42.18.35	43.51.28								
	12	45.24.48	46.58.35	48.32.50	50.7.32	51.42.41	53.18.16	54.54.18	56.30.47								
	13	58.7.43	59.45.5	61.22.55	63.1.12	64.39.56	66.19.8	67.58.48	69.38.55								
	14	71.19.30	73.0.32	74.42.1	76.23.58	78.6.22	79.49.14	81.32.33	83.16.19								
	15	85.0.32	86.45.12	88.30.18	90.15.50	92.1.48	93.48.13	95.35.1	97.22.14								
	16	99.9.51	100.57.51	102.46.13	104.34.55	106.23.59											

Stars Names.	Days	Noon.	III ^h .	V th .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Aquilæ.	16	-	-	-	-	62. 2. 49	63. 36. 8	65. 10. 13	66. 45. 3
	17	68. 20. 38	69. 56. 53	71. 33. 42	73. 11. 4	74. 48. 58	76. 27. 22	78. 6. 6	79. 45. 12
	18	81. 24. 40	-	-	-	-	-	-	-
The Sun.	21	-	-	-	-	37. 49. 49	39. 32. 5	41. 14. 3	42. 55. 42
	22	44. 37. 3	46. 18. 2	47. 58. 41	49. 38. 59	51. 18. 54	52. 58. 25	54. 37. 33	56. 16. 18
	23	57. 54. 38	59. 32. 33	61. 10. 3	62. 47. 9	64. 23. 50	66. 0. 5	67. 35. 55	69. 11. 20
	24	70. 46. 20	72. 20. 55	73. 55. 5	75. 28. 51	77. 2. 12	78. 35. 9	80. 7. 42	81. 39. 52
	25	83. 11. 39	84. 43. 2	86. 14. 2	87. 44. 40	89. 14. 56	90. 44. 50	92. 14. 23	93. 43. 36
	26	95. 12. 28	96. 48. 59	98. 9. 11	99. 37. 4	101. 4. 39	102. 31. 53	103. 58. 53	105. 25. 35
	27	106. 51. 59	108. 18. 7	109. 43. 59	111. 9. 36	112. 34. 57	114. 0. 4	115. 24. 57	116. 49. 36
	28	118. 14. 2	119. 38. 14	121. 2. 15	-	-	-	-	-
	25	-	-	-	-	15. 55. 42	17. 24. 4	18. 49. 29	20. 17. 49
	26	21. 46. 56	23. 16. 47	24. 47. 3	26. 17. 43	27. 48. 48	29. 19. 48	30. 50. 52	32. 21. 59
Pollux.	27	33. 53. 11	35. 24. 15	36. 55. 15	38. 26. 12	39. 57. 7	41. 27. 53	42. 58. 33	44. 29. 7
	28	45. 59. 35	47. 29. 54	49. 0. 6	50. 30. 11	52. 0. 9	-	-	-
	29	-	-	-	-	15. 43. 54	17. 14. 42	18. 45. 28	20. 15. 56
Regulus.	28	-	-	-	-	27. 40. 58	29. 16. 51	30. 46. 38	32. 16. 20
	29	21. 46. 22	23. 16. 41	24. 46. 53	26. 16. 59	27. 40. 58	29. 16. 51	30. 46. 38	32. 16. 20
	30	33. 45. 55	35. 15. 24	36. 44. 47	38. 14. 6	39. 43. 20	41. 12. 30	42. 41. 38	44. 10. 43
	M. 1	45. 39. 43	-	-	-	-	-	-	-

CONFIGURATIONS of the SATELLITES of JUPITER
at IV o'Clock in the *Morning*.

1		.4	3.	○	.1	.2	
2		.4	2.	1.	○		2●
3			.3 .4 .2	○	.1		
4	4.○		.1	.3	○	.2	
5					○	1. 2. .4. 3	
6			2.	.1	○	3.	.4
7	1●			.2	○	3.	.4
8	1.○			3.	○	.2	.4
9	2●		3.	1.	○		4.
10			.3	.2	○	.1	4.
11				1. .2	○	.2	4.
12					○	4. 1. 2. .3	
13			.1	2 0 4	○		.3
14			4.	.2	○	2.	3.
15		4.		3.	.1	○	.2
16		4.	3.		1.	○	2.
17		.4	.3	2.	○	.1	
18		.4		.3	1.	○	2.○
19		.4			○	.1 .2	
20			.4 .1	2.	○		.3
21			.2		○	.4 1.	3.
22	3●			.1	○	.2	.4
23	1●		3.		○	2.	.4
24		.3	2.		○	.1	.4
25	2.○		.3	1.	○		.4
26					○	1 0 3 2.	4.
27			1. 2.		○	.3	4.
28			.3		○	1.	3 0 4
29	3●			.1	○	.2	
30			3. 4.		○	1. 2.	

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			○ Full Moon	---- 3. 14. 43
			☾ Last Quarter	--- 11. 12. 48
			● New Moon	---- 18. 3. 48
			☽ First Quarter	--- 25. 2. 33
F.	1	St. Philip and St. James.	Other Phenomena.	
Sa.	2			
Sun.	3	4th S. aft. East. Inv. Crofs. From East. in 1 m. 3 ret. John Evan. ante Port. L.	D. H. M.	
M.	4		4. 8. 18	☽ γ =
Tu.	5		11. 45	I. n =, * 9' N. of D's C.
W.	6		12. 40	1/2 E. n =, * 12' 1/2 N. of D's C.
Th.	7		17. 50	☽ θ =
F.	8	5th S. aft. East. Rogat. Sun. From East. in 5 w. 4 ret. Ascen. Day. Holy Thursday On mor. of Ascens. 5 ret.	7. 12. 19	☽ i ad μ †
Sa.	9		8. 11. 22	☽ o †
			13. 48	☽ π †
Sun.	10		10. 10. 56	☽ 2
M.	11		11. 8. 39	☽ γ 1/2
Tu.	12	Sunday after Ascens. Day. Easter Term ends. 2. Charl. b. 1744. Dunst. Oxford Term ends. Prs. Elizabeth born.	11. 50	☽ δ 1/2
W.	13		21. 9	☽ i =
Th.	14		13. 3. 56	☽ i ad ↓ =
F.	15		4. 41	☽ 2 ad ↓ =
Sa.	16		20. 16. 4	☽ enters II
		Whit-Sunday. Whit-Monday. Whit-Tues. Aug. 1st A.C. Ven. Bede. Camb. Term div. n. K. Charles II. restored.	21. 4. 13	☽ ζ II
Sun.	17		10. 13	☽ δ II
M.	18		22. 21. 39	☽ δ ☼
Tu.	19		25. - -	☽ Stationary.
W.	20		27. 6. 5	☽ c η
Th.	21	Trinity Sunday.	31. 14. 28	☽ γ =
F.	22		18. 58	☽ η =
Sa.	23		23. 58	☽ θ =
Sun.	24			
M.	25			
Tu.	26			
W.	27			
Th.	28			
F.	29			
Sa.	30			
Sun.	31			

Days of the Week.	Days of the Month.	THE S U N ' s			Equation of Time	Diff.
		Longitude.	R ^t . Ascen. <i>in Time.</i>	Declin. <i>North.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
F.	1	1. 11. 1. 44	2. 34. 23. 4	15. 9. 7	3. 6. 5	
Sa.	2	1. 11. 59. 49	2. 38. 12. 5	15. 27. 4	3. 14. 0	7. 5
Sun.	3	1. 12. 57. 53	2. 42. 2. 1	15. 44. 46	3. 20. 9	6. 9
M.	4	1. 13. 55. 54	2. 45. 52. 3	16. 2. 12	3. 27. 3	6. 4
Tu.	5	1. 14. 53. 54	2. 49. 43. 0	16. 19. 23	3. 33. 1	5. 8
W.	6	1. 15. 51. 52	2. 53. 34. 3	16. 36. 17	3. 38. 3	5. 2
Th.	7	1. 16. 49. 49	2. 57. 26. 2	16. 52. 55	3. 43. 0	4. 7
F.	8	1. 17. 47. 45	3. 1. 18. 7	17. 9. 16	3. 47. 1	4. 1
Sa.	9	1. 18. 45. 40	3. 5. 11. 7	17. 25. 21	3. 50. 6	3. 5
Sun.	10	1. 19. 43. 33	3. 9. 5. 4	17. 41. 7	3. 53. 4	2. 8
M.	11	1. 20. 41. 25	3. 12. 59. 7	17. 56. 37	3. 55. 7	2. 3
Tu.	12	1. 21. 39. 16	3. 16. 54. 5	18. 11. 48	3. 57. 4	1. 7
W.	13	1. 22. 37. 6	3. 20. 50. 0	18. 26. 42	3. 58. 5	1. 1
Th.	14	1. 23. 34. 55	3. 24. 46. 1	18. 41. 17	3. 59. 0	0. 5
F.	15	1. 24. 32. 43	3. 28. 42. 7	18. 55. 33	3. 58. 9	0. 1
Sa.	16	1. 25. 30. 29	3. 32. 40. 0	19. 9. 30	3. 58. 2	0. 7
Sun.	17	1. 26. 28. 15	3. 36. 37. 8	19. 23. 8	3. 56. 9	1. 3
M.	18	1. 27. 25. 59	3. 40. 36. 2	19. 36. 25	3. 55. 0	1. 9
Tu.	19	1. 28. 23. 42	3. 44. 35. 2	19. 49. 23	3. 52. 6	2. 4
W.	20	1. 29. 21. 24	3. 48. 34. 7	20. 2. 1	3. 49. 7	2. 9
Th.	21	2. 0. 19. 3	3. 52. 34. 7	20. 14. 18	3. 46. 2	3. 5
F.	22	2. 1. 16. 42	3. 56. 35. 3	20. 26. 15	3. 42. 2	4. 0
Sa.	23	2. 2. 14. 19	4. 0. 36. 4	20. 37. 50	3. 37. 7	4. 5
Sun.	24	2. 3. 11. 55	4. 4. 38. 0	20. 49. 5	3. 32. 7	5. 0
M.	25	2. 4. 9. 29	4. 8. 40. 1	20. 59. 58	3. 27. 2	5. 5
Tu.	26	2. 5. 7. 2	4. 12. 42. 6	21. 10. 29	3. 21. 2	6. 0
W.	27	2. 6. 4. 34	4. 16. 45. 6	21. 20. 38	3. 14. 7	6. 5
Th.	28	2. 7. 2. 4	4. 20. 49. 1	21. 30. 26	3. 7. 8	6. 9
F.	29	2. 7. 59. 32	4. 24. 53. 0	21. 39. 51	3. 0. 5	7. 3
Sa.	30	2. 8. 57. 0	4. 28. 57. 4	21. 48. 53	2. 52. 7	7. 8
Sun.	31	2. 9. 54. 26	4. 33. 12. 1	21. 57. 32	2. 44. 5	8. 2

Days	Time of ☉'s Semidiam. pass ^s Merid.	T H E S U N ' s			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 5, 9	15. 54, 6	2. 25, 3	0.003696	4. 3.33
7	1. 6, 4	15. 53, 2	2. 24, 9	0.004313	4. 3.14
13	1. 6, 9	15. 52, 0	2. 24, 6	0.004902	4. 2.55
19	1. 7, 4	15. 50, 8	2. 24, 2	0.005425	4. 2.36
25	1. 7, 8	15. 49, 8	2. 23, 9	0.005870	4. 2.17

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	10. 34. 54	3	11. 6. 28	5	17. 51. 8 Im.
3	5. 3. 28	7	0. 24. 48	5	21. 19. 34 E.
4	23. 31. 57	10	13. 43. 2	12	21. 50. 19 Im.
6	18. 0. 28	14	3. 1. 2	13	1. 19. 9 E.
8	12. 28. 57	17	16. 18. 54	20	1. 49. 1 Im.
10	6. 57. 21	21	5. 36. 41	20	5. 18. 17 E.
12	1. 25. 48	24	18. 54. 15	27	5. 47. 24 Im.
13	19. 54. 11	28	8. 11. 48	27	9. 17. 4 E.
*15	14. 22. 31	31	21. 29. 5	IV. Satellite.	
17	8. 50. 52				
19	3. 19. 11			14	23. 47. 32 Im.
20	21. 47. 26			15	4. 0. 7 E.
22	16. 15. 43			31	17. 50. 10 Im.
24	10. 43. 57			31	22. 6. 50 E.
26	5. 12. 9				
27	23. 40. 22				
29	18. 8. 33				
31	12. 36. 42				

M A 7 1775									
S A T U R N									
1	2. 2. 12	1. 55 S	2. 0. 7	1. 44 S	18. 31 N	23. 20	1. 19	0. 59	0. 39
7	2. 2. 26	1. 54	2. 0. 53	1. 43	18. 40	19. 0	0. 18	0. 18	0. 18
13	2. 2. 39	1. 54	2. 1. 39	1. 43	18. 50	19. 9	23. 54	19. 21	19. 21
19	2. 2. 52	1. 54	2. 2. 25	1. 42	19. 0	19. 9	23. 54	19. 21	19. 21
25	2. 3. 6	1. 53	2. 3. 12	1. 42	19. 9	19. 9	23. 54	19. 21	19. 21
J U P I T E R									
1	2. 2. 12	0. 22 S	10. 6. 15	0. 25 S	12. 31 S	17. 59	17. 59	17. 59	17. 59
7	2. 2. 26	0. 23	10. 6. 55	0. 24	12. 31 S	17. 59	17. 59	17. 59	17. 59
13	2. 2. 39	0. 23	10. 7. 14	0. 25	12. 31 S	17. 59	17. 59	17. 59	17. 59
19	2. 2. 45	0. 24	10. 7. 25	0. 25	12. 31 S	17. 59	17. 59	17. 59	17. 59
25	2. 2. 52	0. 25	10. 7. 29	0. 25	12. 31 S	17. 59	17. 59	17. 59	17. 59
M A R S									
1	2. 2. 45	2. 45	2. 2. 25	2. 25	22. 12	22. 12	22. 12	22. 12	22. 12
7	2. 2. 52	2. 46	2. 2. 33	2. 25	22. 12	22. 12	22. 12	22. 12	22. 12
13	2. 2. 52	2. 52	2. 2. 45	2. 25	22. 12	22. 12	22. 12	22. 12	22. 12
19	2. 2. 52	2. 57	2. 2. 45	2. 25	22. 12	22. 12	22. 12	22. 12	22. 12
25	2. 2. 52	3. 2	2. 2. 45	2. 25	22. 12	22. 12	22. 12	22. 12	22. 12
V E N U S									
1	2. 2. 12	1. 55 S	2. 0. 7	1. 44 S	18. 31 N	23. 20	1. 19	0. 59	0. 39
7	2. 2. 26	1. 54	2. 0. 53	1. 43	18. 40	19. 0	0. 18	0. 18	0. 18
13	2. 2. 39	1. 54	2. 1. 39	1. 43	18. 50	19. 9	23. 54	19. 21	19. 21
19	2. 2. 52	1. 54	2. 2. 25	1. 42	19. 0	19. 9	23. 54	19. 21	19. 21
25	2. 3. 6	1. 53	2. 3. 12	1. 42	19. 9	19. 9	23. 54	19. 21	19. 21
G E O R G I A N									
1	5. 2. 12	0. 45 N	4. 29. 11	0. 46 N	12. 29 N	7. 31	6. 52	6. 13	6. 13
7	5. 2. 20	0. 45	4. 29. 11	0. 46	12. 29	7. 31	6. 52	6. 13	6. 13
13	5. 2. 27	0. 45	4. 29. 16	0. 45	12. 27	7. 31	6. 52	6. 13	6. 13

Days of the Month	THE M O O N's							
	Longitude.				Latitude.			
	Noon.		Midnight.		Noon.		Midnight.	
	S. D. M. S.		S. D. M. S.		D. M. S.		D. M. S.	
1	6. 12. 30. 36		6. 18. 27. 29		4. 40. 45 N		4. 50. 11 N	
2	6. 24. 23. 55		7. 0. 20. 8		4. 56. 27		4. 59. 28	
3	7. 6. 16. 21		7. 12. 12. 42		4. 59. 15		4. 55. 46	
4	7. 18. 9. 23		7. 24. 6. 34		4. 49. 3		4. 39. 11	
5	8. 0. 4. 24		8. 6. 3. 7		4. 26. 12		4. 10. 14	
6	8. 12. 2. 54		8. 18. 3. 59		3. 51. 26		3. 29. 57	
7	8. 24. 6. 40		9. 0. 11. 13		3. 5. 59		2. 39. 45	
8	9. 6. 18. 3		9. 12. 27. 30		2. 11. 27		1. 41. 23	
9	9. 18. 40. 3		9. 24. 56. 6		1. 9. 49		0. 37. 7 N	
10	10. 1. 16. 11		10. 7. 40. 48		0. 3. 32 N		0. 30. 28 S	
11	10. 14. 10. 27		10. 20. 45. 33		1. 4. 34 S		1. 38. 16	
12	10. 27. 26. 36		11. 4. 13. 54		2. 11. 9		2. 42. 41	
13	11. 11. 7. 49		11. 18. 8. 26		3. 12. 21		3. 39. 35	
14	11. 25. 15. 45		0. 2. 29. 37		4. 3. 52		4. 24. 37	
15	0. 9. 49. 36		0. 17. 15. 8		4. 41. 21		4. 53. 32	
16	0. 24. 45. 23		1. 2. 19. 20		5. 0. 51		5. 2. 58	
17	1. 9. 55. 46		1. 17. 33. 23		4. 59. 46		4. 51. 14	
18	1. 25. 10. 45		2. 2. 46. 28		4. 37. 30		4. 18. 54	
19	2. 10. 19. 12		2. 17. 47. 46		3. 55. 52		3. 28. 56	
20	2. 25. 11. 8		3. 2. 28. 25		2. 58. 46		2. 26. 1	
21	3. 9. 39. 1		3. 16. 42. 34		1. 51. 22		1. 15. 31	
22	3. 23. 38. 55		4. 0. 28. 3		0. 39. 6 S		0. 2. 43 S	
23	4. 7. 10. 9		4. 13. 45. 33		0. 33. 7 N		1. 7. 55 N	
24	4. 20. 14. 41		4. 26. 38. 0		1. 41. 18		2. 12. 55	
25	5. 2. 56. 6		5. 9. 9. 29		2. 42. 28		3. 9. 42	
26	5. 15. 18. 50		5. 21. 24. 41		3. 34. 25		3. 56. 25	
27	5. 27. 27. 37		6. 3. 28. 12		4. 15. 35		4. 31. 49	
28	6. 9. 26. 56		6. 15. 24. 20		4. 44. 56		4. 54. 56	
29	6. 21. 20. 48		6. 27. 16. 49		5. 1. 43		5. 5. 14	
30	7. 3. 12. 42		7. 9. 8. 48		5. 5. 27		5. 2. 23	
31	7. 15. 5. 25		7. 21. 2. 50		4. 56. 2		4. 46. 26	

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage Merid.	
	Long.	Lat.	Long.	Lat.			
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
♿ MERCURY. Sup. 6 24 16 1/2.							
1	10. 9. 35	6. 57 S	0. 18. 21	2. 42 S	4. 43 N	22. 40	
4	10. 20. 15	6. 59	0. 23. 10	2. 30	6. 41	22. 46	
7	11. 1. 46	6. 44	0. 28. 16	2. 14	8. 47	22. 54	
10	11. 14. 19	6. 9	1. 3. 39	1. 53	10. 59	23. 2	
13	11. 28. 4	5. 12	1. 9. 20	1. 28	13. 13	23. 13	
16	0. 13. 8	3. 48	1. 15. 18	1. 0	15. 29	23. 24	
19	0. 29. 33	1. 59 S	1. 21. 32	0. 29 S	17. 42	23. 37	
22	1. 17. 13	0. 9 N	1. 27. 59	0. 2 N	19. 46	23. 51	
25	2. 5. 47	2. 23	2. 4. 32	0. 34	21. 38	0. 1	
28	2. 24. 44	4. 24	2. 11. 7	1. 2	23. 10	0. 17	
31	3. 13. 22	5. 55	2. 17. 36	1. 26	24. 20	0. 33	
♀ VENUS. Sup. 6 24 16 1/2.							
1	9. 23. 37	2. 7 S	11. 29. 44	1. 28 S	1. 27 S	21. 27	
7	10. 3. 5	2. 32	0. 6. 40	1. 41	1. 6 N	21. 30	
13	10. 12. 34	2. 52	0. 13. 37	1. 50	3. 41	21. 32	
19	10. 22. 4	3. 8	0. 20. 37	1. 56	6. 16	21. 35	
25	11. 1. 34	3. 18	0. 27. 38	1. 58	8. 49	21. 37	
♂ MARS. Sup. 6 24 16 1/2.							
1	2. 9. 43	0. 41 N	1. 28. 23	0. 25 N	20. 14 N	1. 10	
7	2. 12. 48	0. 46	2. 2. 33	0. 29	21. 10	1. 4	
13	2. 15. 52	0. 52	2. 6. 42	0. 32	21. 59	0. 58	
19	2. 18. 54	0. 57	2. 10. 49	0. 35	22. 40	0. 52	
25	2. 21. 51	1. 2	2. 14. 54	0. 38	23. 14	0. 45	
♃ JUPITER. Sup. 6 24 16 1/2.							
1	9. 25. 13	0. 22 S	10. 6. 33	0. 23 S	19. 2 S	17. 59	
7	9. 25. 44	0. 23	10. 6. 56	0. 24	18. 57	17. 38	
13	9. 26. 14	0. 23	10. 7. 14	0. 25	18. 54	17. 16	
19	9. 26. 45	0. 24	10. 7. 25	0. 26	18. 52	16. 53	
25	9. 27. 16	0. 25	10. 7. 29	0. 28	18. 52	16. 29	
♄ SATURN. Sup. 6 24 16 1/2.							
1	2. 2. 12	1. 55 S	2. 0. 7	1. 44 S	18. 31 N	1. 19	
7	2. 2. 26	1. 54	2. 0. 53	1. 43	18. 40	0. 59	
13	2. 2. 39	1. 54	2. 1. 39	1. 43	18. 50	0. 39	
19	2. 2. 52	1. 54	2. 2. 25	1. 42	19. 0	0. 18	
25	2. 3. 6	1. 53	2. 3. 12	1. 42	19. 9	23. 54	
♅ GEORGIAN. Sup. 6 24 16 1/2.							
1	5. 2. 12	0. 45 N	4. 29. 11	0. 46 N	12. 29 N	7. 31	
11	5. 2. 20	0. 45	4. 29. 11	0. 46	12. 29	6. 52	
21	5. 2. 27	0. 45	4. 29. 16	0. 45	12. 27	6. 13	

Days of the Week.	Days of the Month.	THE M O O N 's							
		Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.	S. D. M. S.	S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
F.	1	6. 12. 30. 36	6. 18. 27. 29	4. 40. 45 N	4. 50. 11 N				
Sa.	2	6. 24. 23. 55	7. 0. 20. 8	4. 56. 27	4. 59. 28				
Sun.	3	7. 6. 16. 21	7. 12. 12. 42	4. 59. 15	4. 55. 46				
M.	4	7. 18. 9. 23	7. 24. 6. 34	4. 49. 3	4. 30. 11				
Tu.	5	8. 0. 4. 24	8. 6. 3. 7	4. 26. 12	4. 10. 14				
W.	6	8. 12. 2. 54	8. 18. 3. 59	3. 51. 26	3. 29. 57				
Th.	7	8. 24. 6. 40	9. 0. 11. 13	3. 5. 59	2. 39. 45				
F.	8	9. 6. 18. 3	9. 12. 27. 30	2. 11. 27	1. 41. 23				
Sa.	9	9. 18. 40. 3	9. 24. 56. 6	1. 9. 49	0. 37. 7 N				
Sun.	10	10. 1. 16. 11	10. 7. 40. 48	0. 3. 32 N	0. 30. 28 S				
M.	11	10. 14. 10. 27	10. 20. 45. 33	1. 4. 34 S	1. 38. 16				
Tu.	12	10. 27. 26. 36	11. 4. 13. 54	2. 11. 9	2. 42. 41				
W.	13	11. 11. 7. 49	11. 18. 8. 26	3. 12. 21	3. 39. 35				
Th.	14	11. 25. 15. 45	0. 2. 29. 37	4. 3. 52	4. 24. 37				
F.	15	0. 9. 49. 36	0. 17. 15. 8	4. 41. 21	4. 53. 32				
Sa.	16	0. 24. 45. 23	1. 2. 19. 20	5. 0. 51	5. 2. 58				
Sun.	17	1. 9. 55. 46	1. 17. 33. 23	4. 59. 46	4. 51. 14				
M.	18	1. 25. 10. 45	2. 2. 46. 28	4. 37. 30	4. 18. 54				
Tu.	19	2. 10. 19. 12	2. 17. 47. 46	3. 55. 52	3. 28. 56				
W.	20	2. 25. 11. 8	3. 2. 28. 25	2. 58. 46	2. 26. 1				
Th.	21	3. 9. 39. 1	3. 16. 42. 34	1. 51. 22	1. 15. 31				
F.	22	3. 23. 38. 55	4. 0. 28. 3	0. 39. 6 S	0. 2. 43 S				
Sa.	23	4. 7. 10. 9	4. 13. 45. 33	0. 33. 7 N	1. 7. 55 N				
Sun.	24	4. 20. 14. 41	4. 26. 38. 0	1. 41. 18	2. 12. 55				
M.	25	5. 2. 56. 6	5. 9. 9. 29	2. 42. 28	3. 9. 42				
Tu.	26	5. 15. 18. 50	5. 21. 24. 41	3. 34. 25	3. 56. 25				
W.	27	5. 27. 27. 37	6. 3. 28. 12	4. 15. 35	4. 31. 49				
Th.	28	6. 9. 26. 56	6. 15. 24. 20	4. 44. 56	4. 54. 56				
F.	29	6. 21. 20. 48	6. 27. 16. 49	5. 1. 43	5. 5. 14				
Sa.	30	7. 3. 12. 42	7. 9. 8. 48	5. 5. 27	5. 2. 23				
Sun.	31	7. 15. 5. 25	7. 21. 2. 50	4. 56. 2	4. 46. 26				

Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
			D. H. M.	D. M.	D. M.	D. M.	D. M.
F.	1	14	10. 38	193. 20	198. 52	0. 38 S	2. 46 S
Sa.	2	15	11. 19	204. 24	209. 59	4. 52	6. 56
Sun.	3	16	12. 1	215. 37	221. 18	8. 55	10. 49
M.	4	17	12. 45	227. 4	232. 55	12. 37	14. 18
Tu.	5	18	13. 31	238. 52	244. 55	15. 51	17. 14
W.	6	19	14. 18	251. 5	257. 21	18. 26	19. 26
Th.	7	20	15. 8	263. 44	270. 12	20. 14	20. 48
F.	8	21	15. 59	276. 45	283. 22	21. 7	21. 12
Sa.	9	22	16. 50	290. 3	296. 46	21. 1	20. 34
Sun.	10	23	17. 42	303. 30	310. 14	19. 51	18. 52
M.	11	24	18. 33	316. 58	323. 42	17. 38	16. 9
Tu.	12	25	19. 25	330. 25	337. 8	14. 26	12. 30
W.	13	26	20. 17	343. 50	350. 32	10. 22	8. 4
Th.	14	27	21. 9	357. 16	4. 3	5. 37	3. 3 S
F.	15	28	22. 2	10. 52	17. 46	0. 25 S	2. 15 N
Sa.	16	29	22. 58	24. 46	31. 53	4. 56 N	7. 33
Sun.	17	30	23. 56	39. 7	46. 29	10. 4	12. 26
M.	18	1	0	53. 59	61. 36	14. 35	16. 30
Tu.	19	2	0. 55	69. 18	77. 4	18. 8	19. 26
W.	20	3	1. 56	84. 52	92. 39	20. 24	21. 0
Th.	21	4	2. 56	100. 21	107. 57	21. 15	21. 10
F.	22	5	3. 54	115. 24	122. 40	20. 45	20. 1
Sa.	23	6	4. 48	129. 43	136. 34	19. 2	17. 48
Sun.	24	7	5. 39	143. 13	149. 39	16. 21	14. 44
M.	25	8	6. 27	155. 53	161. 58	12. 58	11. 4
Tu.	26	9	7. 12	167. 53	173. 41	9. 5	7. 2
W.	27	10	7. 54	179. 22	184. 59	4. 55	2. 46 N
Th.	28	11	8. 36	190. 33	196. 5	0. 37 N	1. 32 S
F.	29	12	9. 17	201. 37	207. 9	3. 40 S	5. 46
Sa.	30	13	9. 59	212. 44	218. 23	7. 48	9. 46
Sun.	31	14	10. 42	224. 6	229. 54	11. 39	13. 26

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
F.	1	14.47	14.45	54.14	54. 9	5210	5217
Sa.	2	14.44	14.44	54. 5	54. 4.	5222	5223
Sun.	3	14.44	14.45	54. 5	54. 6	5222	5221
M.	4	14.45	14.46	54. 8	54.11	5218	5214
Tu.	5	14.47	14.49	54.16	54.23	5207	5198
W.	6	14.51	14.54	54.31	54.40	5187	5175
Th.	7	14.57	15. 0	54.51	55. 3	5161	5145
F.	8	15. 4	15. 8	55.17	55.33	5127	5106
Sa.	9	15.13	15.18	55.50	56. 9	5084	5059
Sun.	10	15.24	15.30	56.30	56.52	5032	5004
M.	11	15.36	15.43	57.15	57.39	4975	4945
Tu.	12	15.49	15.56	58. 4	58.30	4913	4881
W.	13	16. 3	16.10	58.55	59.20	4850	4820
Th.	14	16.17	16.23	59.45	60. 8	4789	4761
F.	15	16.29	16.34	60.30	60.49	4735	4712
Sa.	16	16.38	16.41	61. 4	61.15	4694	4682
Sun.	17	16.43	16.44	61.21	61.23	4675	4672
M.	18	16.43	16.41	61.20	61.12	4676	4685
Tu.	19	16.37	16.33	61. 0	60.44	4699	4716
W.	20	16.28	16.21	60.24	60. 0	4742	4771
Th.	21	16.14	16. 6	59.34	59. 7	4802	4835
F.	22	15.59	15.51	58.39	58.10	4870	4906
Sa.	23	15.43	15.35	57.41	57.13	4942	4977
Sun.	24	15.28	15.22	56.47	56.22	5010	5042
M.	25	15.15	15. 9	55.59	55.37	5072	5100
Tu.	26	15. 4	15. 0	55.18	55. 2	5125	5146
W.	27	14.56	14.53	54.48	54.36	5165	5181
Th.	28	14.50	14.48	54.26	54.18	5194	5205
F.	29	14.46	14.46	54.13	54.10	5211	5215
Sa.	30	14.45	14.45	54. 9	54. 9	5217	5217
Sun.	31	14.46	14.47	54.11	54.15	5214	5209

DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVII ^h .		XXI ^h .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Antares.	1	55.	6. 52	53.	39. 25	52.	12. 4	50.	44. 49	49.	17. 40	47.	50. 38	46.	23. 44	44.	56. 57
	2	43.	30. 18	42.	3. 46	40.	37. 23	39.	11. 10	37.	45. 7	36.	19. 12	34.	53. 31	33.	28. 4
	3	32.	2. 52	30.	37. 58	29.	13. 24	27.	49. 11	26.	25. 20						
α Aquilæ.	3	-	-	-	-	-	-	-	-	75.	58. 22	74.	41. 26	73.	24. 37	72.	7. 54
	4	70.	51. 22	69.	34. 59	68.	18. 49	67.	2. 51	65.	47. 6	64.	31. 36	63.	16. 24	62.	1. 30
	5	60.	46. 54	59.	32. 37	58.	18. 45	57.	5. 16	55.	52. 14	54.	39. 40	53.	27. 37	52.	16. 7
	6	51.	5. 12														
α Pegasi.	6	96.	46. 51	95.	24. 6	94.	1. 12	92.	38. 12	91.	15. 4	89.	51. 49	88.	28. 28	87.	5. 0
	7	85.	41. 26	84.	17. 46	82.	54. 2	81.	30. 12	80.	6. 17	78.	42. 17	77.	18. 13	75.	54. 5
	8	74.	29. 54	73.	5. 40	71.	41. 24	70.	17. 6	68.	52. 46	67.	28. 25	66.	4. 4	64.	39. 45
	9	63.	15. 27	61.	51. 10	60.	26. 59	59.	2. 54	57.	38. 54	56.	15. 0	54.	51. 19	53.	27. 50
	10	52.	4. 34	50.	41. 36	49.	18. 56	47.	56. 37	46.	34. 41						
The Sun.	9	120.	5. 12	118.	38. 52	117.	12. 18	115.	45. 29	114.	18. 24	112.	51. 4	111.	23. 27	109.	55. 33
	10	108.	27. 22	106.	58. 54	105.	30. 7	104.	1. 2	102.	31. 39	101.	1. 57	99.	31. 55	98.	1. 34
	11	96.	30. 54	94.	59. 53	93.	28. 32	91.	56. 50	90.	24. 47	88.	52. 22	87.	19. 35	85.	46. 26

Stars Names.	Days	Noon.		III ^h .		V ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
The Sun.	12	84.	12.55	82.	39.2	81.	4.46	79.	30.7	77.	55.6	76.	19.41	74.	43.52	73.	7.40
	13	71.	31.5	69.	54.5	68.	16.44	66.	38.59	65.	0.50	63.	22.19	61.	43.25	60.	4.9
	14	58.	24.30	56.	44.28	55.	4.5	53.	23.21	51.	42.16	50.	0.51	48.	19.7	46.	37.5
Regulus.	15	44.	54.44	43.	12.6	41.	29.11	39.	46.1	38.	2.35						
	19	-	-	-	-	-	-	-	-	69.	15.30	67.	24.9	65.	33.7	63.	42.25
	20	61.	52.4	60.	2.4	58.	12.27	56.	23.12	54.	34.20	52.	45.53	50.	57.49	49.	10.12
Spica ν	21	47.	22.59	45.	36.13	43.	49.52	42.	3.58	40.	18.30	38.	33.29	36.	48.56	35.	4.50
	22	33.	21.11	31.	38.0	29.	55.17	28.	13.2	26.	31.15	24.	49.56	23.	9.6	21.	28.44
	23	19.	48.51														
Antares.	23	73.	51.4	72.	12.3	70.	33.28	68.	55.18	67.	17.34	65.	40.15	64.	3.22	62.	26.52
	24	60.	50.48	59.	15.9	57.	39.52	56.	5.0	54.	30.31	52.	56.25	51.	22.41	49.	49.19
	25	48.	16.21	46.	43.45	45.	11.31	43.	39.39	42.	8.9	40.	36.59	39.	6.11	37.	35.47
Antares.	26	36.	5.44	34.	36.2	33.	6.45	31.	37.53	30.	9.27	28.	41.28	27.	13.58	25.	46.57
	27	24.	20.26														
	27	69.	56.3	68.	27.2	66.	58.12	65.	29.31	64.	1.1	62.	32.40	61.	4.29	59.	36.26
Aquilæ.	28	58.	8.33	56.	40.47	55.	13.10	53.	45.40	52.	18.19	50.	51.5	49.	24.0	47.	57.1
	29	46.	30.11	45.	3.27	43.	36.51	42.	10.24	40.	44.5	39.	17.56	37.	51.56	36.	26.6
	30	35.	0.27														
Aquilæ.	30	83.	44.35	82.	27.16	81.	10.0	79.	52.48	78.	35.39	77.	18.35	76.	1.37	74.	44.46
	31	73.	28.0	72.	11.22	70.	54.53	69.	38.34	68.	22.24	67.	6.26	65.	50.41	64.	35.9
	J. 1	63.	19.50														

Stars Names.	Day	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Aquilæ.	14	63.27.24	64.58.18	66.29.57	68.2.19	69.35.22	71.9.5	72.43.22	74.18.14
	15	75.53.41	77.29.37	79.6.0	80.42.49	82.20.4	83.57.41	85.35.35	87.13.46
	16	88.52.15	90.30.55	92.9.46	93.48.45	95.27.51			
	21	39.22.10	41.1.5	42.39.35	44.17.44	45.55.29	47.32.50	49.9.46	50.46.17
The Sun.	22	52.22.24	53.58.4	55.33.19	57.8.9	58.42.33	60.16.31	61.50.3	63.23.11
	23	64.55.54	66.28.12	68.0.5	69.31.35	71.2.40	72.33.21	74.3.39	75.33.34
	24	77.3.6	78.32.16	80.1.4	81.29.31	82.57.37	84.25.22	85.52.48	87.19.55
	25	88.46.42	90.13.10	91.39.20	93.5.13	94.30.49	95.56.9	97.21.13	98.46.2
	26	100.10.36	101.34.55	102.59.1	104.22.54	105.46.34	107.10.2	108.33.19	109.56.25
	27	111.19.20	112.42.5	114.4.40	115.27.7	116.49.25	118.11.35	119.33.38	120.55.34
	28	122.17.23							
	25	42.34.7	44.6.16	45.38.14	47.9.59	48.41.33	50.12.55	51.44.4	53.15.3
	26	54.45.50	56.16.25	57.46.49	59.17.2	60.47.5	62.16.57	63.46.40	65.16.13
	27	66.45.37							
Pollux.	27	30.40.52	32.10.54	33.40.48	35.10.33	36.40.11	38.9.41	39.39.5	41.8.22
	28	42.37.33	44.6.39	45.35.40	47.4.37	48.33.29	50.2.17	51.31.2	52.59.44
	29	54.28.23	55.57.1	57.25.37	58.54.13	60.22.47	61.51.20	63.19.54	64.48.28
	30	66.17.2	67.45.37	69.14.14	70.42.53	72.11.34			
Spica η	30	-	-	-	-	10.28.19	20.51.21	22.15.2	23.39.17
	31	25.4.4	26.29.22	27.55.5	29.21.12	30.47.41	32.14.27	33.41.30	35.8.44
	J.1	36.36.9							

CONFIGURATIONS of the SATELLITES of JUPITER
at III o'Clock in the *Morning*.

1	1.○	4. 3.	2.	○			
2		4.	3.	1.	○		
3		4.		3. 1.	○	2.	
4		4.	3.	○		3.	2.●
5		4.	2.	○	1.	3.	
6		4.	1.	○	2.		
7			3. 4.	○	1. 2.		
8		3.	2.	1.○	4.		
9	1.●	3.	2.	○		4.	
10	3.○			○	1. 2.	4.	
11	2.●		1.	○	3.	4.	
12			2.	○	1.	3.	4.
13			1.	○	2.	3.	4.
14			3.	○	1. 2.		
15		3.	2. 1.	○	4.		
16	1.● 4.●	3.	2.	○			
17	1.○	4.	3.	○	2.		
18		4.	1.	○	2.	3.	
19		4.	2.	○	1.	3.	
20		4.	1.	○	3.		2.○
21		4.	3.	○	1. 2.		
22		4.	3. 1.	○			
23		3. 4.	2.	○	1.		
24	1.○		3. 4.	○	2.		
25			1.	○	2. 4. 3.		
26		3.		○	1.	3. 4.	
27			1. 2.	○	3.	4.	
28			3.	○	1. 2.		4.
29		3.	1. 2.	○			4.
30		3.	2.	○	1.		4.
31			3. 1.	○	2.		4.

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			○ Full Moon ----- 2. 6. 1
			☾ Last Quarter ----- 9. 20. 50
			● New Moon ----- 16. 11. 8
			☽ First Quarter ----- 23. 17. 21
			Other Phenomena.
			D. H. M.
			3. 18. 4 ☽ 1 ad μ $\uparrow$
			4. 16. 58 ☽ 0 $\uparrow$
			19. 24 ☽ π $\uparrow$
			6. 16. 42 ☽ $\downarrow$
			7. 13. 45 $\frac{1}{2}$ H. γ γ * $2\frac{1}{2}$ N. of γ 's C.
			14. 59 $\frac{1}{4}$ E. γ γ * $4\frac{1}{2}$ N.
			17. 36 ☽ δ γ
			8. 3. 4 ☽ 1 $\approx$
			9. 10. 29 ☽ 1 ad $\downarrow$ $\approx$
			11. 16 ☽ 2 ad $\downarrow$ $\approx$
			11. 23 ☽ 3 ad $\downarrow$ $\approx$
			12. - - γ γ 8 diff. Lat. 55'.
			13. 0. 45 ☽ 2 ad ξ Ceti.
			7. 59 ☽ μ Ceti.
			19. 7. 2 ☽ δ $\approx$
			21. 0. 45 ☉ enters $\approx$
			23. 13. 17 ☽ c γ
			27. - - γ γ diff. Lat. 22'.
			21. 16 ☽ γ $\approx$
			28. 1. 47 ☽ η $\approx$
			6. 47 ☽ θ $\approx$
M.	1	On mor. of H. Trin. 1 ret.	
Tu.	2	[Nicomede.	
W.	3	Oxford Term begins.	
Th.	4	K. Geo. III. born 1738.	
F.	5	Pr. Er. Aug. b. Boniface.	
Sa.	6	[Tr. T. beg.	
Sun.	7	1 st Sunday after Trinity.	
M.	8	In 8 days of H. Tr. 2 ret.	
Tu.	9		
W.	10		
Th.	11	St. Barnabas.	
F.	12		
Sa.	13		
Sun.	14	2 ^d . Sunday after Trinity.	
M.	15	In 15 days of H. T. 3 ret.	
Tu.	16		
W.	17	St. Alban.	
Th.	18		
F.	19		
Sa.	20	Transf. of Ed. K. of W. S.	
Sun.	21	3 ^d . Sunday after Trinity.	
M.	22	In 3 weeks of H. Trin.	
Tu.	23	[4 ret.	
W.	24	St. John Bapt. Tr. T. ends	
Th.	25		
F.	26		
Sa.	27		
Sun.	28	4 th Sunday after Trinity.	
M.	29	St. Peter.	
Tu.	30		

Days of the Week.	Days of the Month.	THE S U N's			Equation of Time.	Diff.
		Longitude.	R ^t . Ascen. <i>in Time.</i>	Declin. <i>North.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
M.	1	2. 10. 51. 51	4. 37. 7. 3	22. 5. 49	2. 36. 0	
Tu.	2	2. 11. 49. 15	4. 41. 12. 0	22. 13. 42	2. 27. 0	9, 0
W.	3	2. 12. 46. 38	4. 45. 18. 8	22. 21. 13	2. 17. 6	9, 4
Th.	4	2. 13. 44. 1	4. 49. 25. 1	22. 28. 20	2. 7. 8	9, 8
F.	5	2. 14. 41. 22	4. 53. 31. 8	22. 35. 3	1. 57. 7	10, 1
Sa.	6	2. 15. 38. 43	4. 57. 38. 8	22. 41. 24	1. 47. 3	10, 4
Sun.	7	2. 16. 36. 4	5. 1. 46. 2	22. 47. 20	1. 36. 5	10, 8
M.	8	2. 17. 33. 24	5. 5. 53. 9	22. 52. 53	1. 25. 4	11, 1
Tu.	9	2. 18. 30. 44	5. 10. 1. 9	22. 58. 1	1. 14. 0	11, 4
W.	10	2. 19. 28. 4	5. 14. 10. 2	23. 2. 45	1. 2. 3	11, 7
Th.	11	2. 20. 25. 23	5. 18. 18. 7	23. 7. 5	0. 50. 4	11, 9
F.	12	2. 21. 22. 42	5. 22. 27. 4	23. 11. 0	0. 38. 2	12, 2
Sa.	13	2. 22. 20. 0	5. 26. 36. 4	23. 14. 31	0. 25. 9	12, 3
Sun.	14	2. 23. 17. 18	5. 30. 45. 5	23. 17. 38	0. 13. 3	12, 6
M.	15	2. 24. 14. 36	5. 34. 54. 8	23. 20. 20	0. 0. 6	12, 7
Tu.	16	2. 25. 11. 54	5. 39. 4. 3	23. 22. 37	Add. 12. 2	12, 8
W.	17	2. 26. 9. 11	5. 43. 13. 8	23. 24. 29	0. 25. 2	13, 0
Th.	18	2. 27. 6. 27	5. 47. 23. 4	23. 25. 57	0. 38. 2	13, 0
F.	19	2. 28. 3. 44	5. 51. 33. 0	23. 27. 0	0. 51. 2	13, 1
Sa.	20	2. 29. 0. 59	5. 55. 42. 7	23. 27. 38	1. 4. 3	13, 0
Sun.	21	2. 29. 58. 14	5. 59. 52. 3	23. 27. 51	1. 17. 3	13, 0
M.	22	3. 0. 55. 28	6. 4. 1. 9	23. 27. 40	1. 30. 3	13, 9
Tu.	23	3. 1. 52. 42	6. 8. 11. 4	23. 27. 3	1. 43. 2	12, 9
W.	24	3. 2. 49. 55	6. 12. 20. 8	23. 26. 1	1. 56. 1	12, 7
Th.	25	3. 3. 47. 8	6. 16. 30. 2	23. 24. 36	2. 8. 8	12, 6
F.	26	3. 4. 44. 20	6. 20. 39. 3	23. 22. 45	2. 21. 4	12, 4
Sa.	27	3. 5. 41. 32	6. 24. 48. 3	23. 20. 29	2. 33. 8	12, 2
Sun.	28	3. 6. 38. 43	6. 28. 57. 1	23. 17. 50	2. 46. 0	12, 1
M.	29	3. 7. 35. 53	6. 33. 5. 7	23. 14. 46	2. 58. 1	11, 8
Tu.	30	3. 8. 33. 4	6. 37. 14. 1	23. 11. 17	3. 9. 9	

Days	Time of ☉'s Semidiam. pass ^s Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter M. S.	Hourly Motion. M. S.	Logar. Distance.	S. D. M.
1	1. 8, 3	15. 48, 9	2. 23, 6	0. 006309	4. 1. 55
7	1. 8, 6	15. 48, 2	2. 23, 4	0. 006638	4. 1. 36
13	1. 8, 7	15. 47, 6	2. 23, 2	0. 006909	4. 1. 17
19	1. 8, 8	15. 47, 2	2. 23, 1	0. 007096	4. 0. 58
25	1. 8, 8	15. 47, 0	2. 23, 0	0. 007188	4. 0. 39

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	7. 4. 52	4	10. 46. 25	3	9. 45. 25 Im.
4	1. 33. 1	8	0. 3. 35	* 3	13. 15. 29 E.
5	20. 1. 6	* 11	13. 20. 40	* 10	13. 43. 15 Im.
* 7	14. 29. 11	15	2. 37. 44	10	17. 13. 43 E.
9	8. 57. 18	18	15. 54. 43	17	17. 41. 1 Im.
11	3. 25. 23	22	5. 11. 36	17	21. 11. 48 E.
12	21. 53. 27	25	18. 28. 28	24	21. 38. 58 Im.
14	16. 21. 33	29	7. 45. 23	25	1. 10. 4 E.
16	10. 49. 40				
18	5. 17. 44				
19	23. 45. 49				
21	18. 13. 57				
* 23	12. 42. 2				
25	7. 10. 11				
27	1. 38. 22				
28	20. 6. 33				
* 30	14. 34. 43				
				IV. Satellite.	
				* 17	11. 51. 42 Im.
				17	16. 12. 20 E.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.		D. M.	H. M.
♂ Gr. Elong. 28°. <i>MERCURY.</i>							
1	3. 19. 25	6. 16 N	2. 19. 43	1. 33 N	24. 37 N	0. 38	
4	4. 6. 47	6. 55	2. 25. 54	1. 50	25. 14	0. 53	
7	4. 22. 47	6. 57	3. 1. 46	2. 0	25. 27	1. 6	
10	5. 7. 21	6. 31	3. 7. 18	2. 3	25. 19	1. 18	
13	5. 20. 33	5. 46	3. 12. 27	1. 59	24. 52	1. 28	
16	6. 2. 35	4. 49	3. 17. 15	1. 50	24. 10	1. 37	
19	6. 13. 36	3. 45	3. 21. 39	1. 34	23. 16	1. 43	
22	6. 23. 49	2. 39	3. 25. 40	1. 12	22. 13	1. 47	
25	7. 3. 23	1. 32	3. 29. 16	0. 45	21. 4	1. 50	
28	7. 12. 27	0. 26 N	4. 2. 25	0. 14 N	19. 52	1. 50	
30	7. 18. 17	0. 17 S	4. 4. 15	0. 10 S	19. 4	1. 49	
♀ <i>VENUS.</i>							
1	11. 12. 39	3. 23 S	1. 5. 52	1. 57 S	11. 40 N	21. 40	
7	11. 22. 11	3. 22	1. 12. 58	1. 52	13. 58	21. 43	
13	0. 1. 43	3. 15	1. 20. 5	1. 45	16. 6	21. 40	
19	0. 11. 16	3. 2	1. 27. 14	1. 36	18. 1	21. 50	
25	0. 20. 50	2. 45	2. 4. 24	1. 24	19. 40	21. 55	
♂ <i>MARS.</i>							
1	2. 25. 22	1. 7 N	2. 19. 41	0. 41 N	23. 45 N	0. 38	
7	2. 28. 19	1. 12	2. 23. 44	0. 44	24. 3	0. 31	
13	3. 1. 14	1. 16	2. 27. 46	0. 46	24. 13	0. 24	
19	3. 4. 8	1. 20	3. 1. 46	0. 49	24. 16	0. 16	
25	3. 6. 59	1. 24	3. 5. 44	0. 51	24. 12	0. 9	
♃ <i>JUPITER.</i>							
1	9. 27. 52	0. 25 S	10. 7. 24	0. 29 S	18. 55 S	16. 0	
7	9. 28. 23	0. 26	10. 7. 13	0. 30	18. 59	15. 34	
13	9. 28. 54	0. 27	10. 6. 55	0. 32	19. 5	15. 8	
19	9. 29. 25	0. 27	10. 6. 31	0. 33	19. 12	14. 42	
25	9. 29. 56	0. 28	10. 6. 1	0. 34	19. 21	14. 15	
♄ <i>SATURN.</i>							
1	2. 3. 21	1. 53 S	2. 4. 6	1. 42 S	19. 20 N	23. 29	
7	2. 3. 34	1. 52	2. 4. 53	1. 41	19. 29	23. 8	
13	2. 3. 48	1. 52	2. 5. 39	1. 41	19. 37	22. 46	
19	2. 4. 1	1. 52	2. 6. 23	1. 41	19. 44	22. 24	
25	2. 4. 15	1. 51	2. 7. 7	1. 41	19. 52	22. 3	
♅ <i>GEORGIAN.</i>							
1	5. 2. 30	0. 45 N	4. 29. 28	0. 45 N	12. 22 N	5. 29	
11	5. 2. 44	0. 45	4. 29. 45	0. 45	12. 16	4. 49	
21	5. 2. 52	0. 46	5. 0. 5	0. 44	12. 9	4. 9	

Days of the Week.	Days of the Month.	THE M O O N's							
		Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.	S. D. M. S.	S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
M.	1	7. 27. 1. 14	8. 3. 0. 51	4. 33. 41	N	4. 17. 51	N		
Tu.	2	8. 9. 1. 52	8. 15. 4. 26	3. 59. 4		3. 37. 30			
W.	3	8. 21. 8. 45	8. 27. 14. 56	3. 13. 20		2. 46. 48			
Th.	4	9. 3. 23. 13	9. 9. 33. 42	2. 18. 7		1. 47. 38			
F.	5	9. 15. 46. 39	9. 22. 2. 16	1. 15. 35		0. 42. 24	N		
Sa.	6	9. 28. 20. 50	10. 4. 42. 36	0. 8. 22	N	0. 26. 4	S		
Sun.	7	10. 11. 7. 52	10. 17. 36. 56	1. 0. 33	S	1. 34. 36			
M.	8	10. 24. 10. 8	11. 0. 47. 43	2. 7. 48		2. 39. 38			
Tu.	9	11. 7. 30. 1	11. 14. 17. 15	3. 9. 41		3. 37. 27			
W.	10	11. 21. 9. 33	11. 28. 7. 5	4. 2. 25		4. 24. 9			
Th.	11	0. 5. 9. 47	0. 12. 17. 35	4. 42. 11		4. 56. 5			
F.	12	0. 19. 30. 14	0. 26. 47. 18	5. 5. 29		5. 10. 5			
Sa.	13	1. 4. 8. 16	1. 11. 32. 24	5. 9. 39		5. 4. 5			
Sun.	14	1. 18. 58. 53	1. 26. 26. 42	4. 53. 22		4. 37. 38			
M.	15	2. 3. 54. 52	2. 11. 22. 15	4. 17. 10		3. 52. 20			
Tu.	16	2. 18. 47. 45	2. 26. 10. 21	3. 23. 39		2. 51. 42			
W.	17	3. 3. 29. 3	3. 10. 43. 4	2. 17. 9		1. 40. 43			
Th.	18	3. 17. 51. 42	3. 24. 54. 25	1. 3. 6	S	0. 34. 59	S		
F.	19	4. 1. 50. 52	4. 8. 40. 53	0. 12. 58	N	0. 50. 10	N		
Sa.	20	4. 15. 24. 28	4. 22. 1. 44	1. 26. 7		2. 0. 21			
Sun.	21	4. 28. 32. 53	5. 4. 58. 17	2. 32. 29		3. 2. 13			
M.	22	5. 11. 18. 22	5. 17. 33. 36	3. 29. 17		3. 53. 29			
Tu.	23	5. 23. 44. 29	5. 29. 51. 38	4. 14. 40		4. 32. 44			
W.	24	6. 5. 55. 32	6. 11. 56. 50	4. 47. 34		4. 59. 6			
Th.	25	6. 17. 56. 2	6. 23. 53. 45	5. 7. 19		5. 12. 11			
F.	26	6. 29. 50. 29	7. 5. 46. 48	5. 13. 41		5. 11. 49			
Sa.	27	7. 11. 43. 7	7. 17. 39. 58	5. 6. 36		4. 58. 6			
Sun.	28	7. 23. 37. 43	7. 29. 36. 46	4. 46. 21		4. 31. 25			
M.	29	8. 5. 37. 29	8. 11. 40. 6	4. 13. 28		3. 52. 30			
Tu.	30	8. 17. 44. 59	8. 23. 52. 16	3. 28. 48		3. 2. 33			

THE MOON'S							
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
				D. M.	D. M.	D. M.	D. M.
M.	1	15	11. 27	235. 48	241. 50	15. 4 S	16. 33 S
Tu.	2	16	12. 14	247. 58	254. 13	17. 53	19. 1
W.	3	17	13. 3	260. 35	267. 4	19. 57	20. 39
Th.	4	18	13. 53	273. 38	280. 16	21. 7	21. 20
F.	5	19	14. 45	286. 58	293. 41	21. 17	20. 58
Sa.	6	20	15. 36	300. 26	307. 10	20. 22	19. 31
Sun.	7	21	16. 27	313. 53	320. 34	18. 25	17. 4
M.	8	22	17. 18	327. 13	333. 49	15. 29	13. 41
Tu.	9	23	18. 8	340. 24	346. 57	11. 42	9. 32
W.	10	24	18. 58	353. 29	0. 2	7. 13	4. 47 S
Th.	11	25	19. 49	6. 36	13. 14	2. 16 S	0. 19 N
F.	12	26	20. 41	19. 56	26. 43	2. 55 N	5. 31
Sa.	13	27	21. 36	33. 38	40. 41	8. 3	10. 29
Sun.	14	28	22. 33	47. 53	55. 15	12. 46	14. 53
M.	15	29	23. 32	62. 45	70. 23	16. 45	18. 20
Tu.	16	1	6	78. 7	85. 55	19. 37	20. 33
W.	17	2	0. 33	93. 44	101. 31	21. 8	21. 22
Th.	18	3	1. 33	109. 12	116. 46	21. 14	20. 46
F.	19	4	2. 30	124. 9	131. 21	19. 59	18. 55
Sa.	20	5	3. 25	138. 19	145. 4	17. 36	16. 5
Sun.	21	6	4. 15	151. 37	157. 57	14. 23	12. 32
M.	22	7	5. 1	164. 6	170. 6	10. 34	8. 30
Tu.	23	8	5. 46	175. 57	181. 41	6. 23	4. 14 N
W.	24	9	6. 28	187. 20	192. 56	2. 3 N	0. 8 S
Th.	25	10	7. 9	198. 29	204. 2	2. 18 S	4. 26
F.	26	11	7. 51	209. 36	215. 13	6. 32	8. 34
Sa.	27	12	8. 33	220. 53	226. 37	10. 30	12. 20
Sun.	28	13	9. 18	232. 28	238. 25	14. 4	15. 40
M.	29	14	10. 4	244. 29	250. 41	17. 6	18. 22
Tu.	30	15	10. 52	257. 1	263. 28	19. 26	20. 17

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
M.	1	14.48	14.50	54.20	54.26	5202	5194
Tu.	2	14.52	14.54	54.33	54.42	5185	5173
W.	3	14.57	15. 0	54.52	55. 3	5159	5145
Th.	4	15. 3	15. 7	55.15	55.28	5129	5112
F.	5	15.11	15.15	55.42	55.57	5094	5075
Sa.	6	15.19	15.23	56.12	56.29	5055	5033
Sun.	7	15.28	15.33	56.46	57. 4	5012	4989
M.	8	15.38	15.44	57.23	57.43	4965	4940
Tu.	9	15.49	15.55	58. 3	58.23	4915	4890
W.	10	16. 0	16. 5	58.43	59. 3	4865	4841
Th.	11	16.11	16.16	59.23	59.41	4816	4794
F.	12	16.20	16.25	59.58	60.14	4773	4754
Sa.	13	16.28	16.31	60.27	60.37	4739	4727
Sun.	14	16.33	16.34	60.44	60.48	4718	4714
M.	15	16.34	16.33	60.47	60.43	4715	4719
Tu.	16	16.30	16.27	60.34	60.22	4730	4745
W.	17	16.23	16.17	60. 6	59.47	4764	4787
Th.	18	16.11	16. 5	59.25	59. 1	4813	4843
F.	19	15.58	15.51	58.35	58. 9	4875	4907
Sa.	20	15.43	15.36	57.42	57.16	4941	4973
Sun.	21	15.29	15.23	56.50	56.26	5006	5037
M.	22	15.16	15.10	56. 2	55.40	5068	5097
Tu.	23	15. 5	15. 1	55.22	55. 6	5120	5141
W.	24	14.57	14.54	54.52	54.40	5159	5175
Th.	25	14.51	14.49	54.30	54.23	5189	5198
F.	26	14.48	14.47	54.19	54.16	5203	5207
Sa.	27	14.47	14.48	54.16	54.19	5207	5203
Sun.	28	14.49	14.51	54.23	54.29	5198	5192
M.	29	14.53	14.55	54.37	54.46	5179	5167
Tu.	30	14.58	15. 2	54.57	55. 9	5153	5137

DISTANCES of MOON'S Center from SUN, and from STARS EAST of her.

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.	D.	M.S.
α Aquilæ.	1	63.	19.51	62.	4.52	60.	50.9	59.	35.44	58.	21.41	57.	8.0	55.	54.46	54.	42.2
	2	53.	29.47	52.	18.6	51.	7.2	49.	56.35	48.	46.47						
	3	88.	26.52	87.	2.54	85.	38.50	84.	14.40	84.	1.29	82.	38.1	81.	14.26	80.	50.43
	4	77.	12.35	75.	47.59	74.	23.21	72.	58.42	82.	50.24	81.	26.3	80.	1.37	78.	37.8
	5	65.	55.27	64.	30.53	63.	6.25	61.	42.3	71.	34.2	70.	9.21	68.	44.41	67.	20.3
	6	54.	42.29							60.	17.47	58.	53.41	57.	29.45	56.	6.0
α Arietis.	6	96.	19.32	94.	47.21	93.	14.56	91.	42.20	90.	9.30	88.	36.28	87.	3.13	85.	29.47
	7	83.	56.8	82.	22.17	80.	48.14	79.	13.59	77.	39.33	76.	4.55	74.	30.5	72.	55.5
	8	71.	19.54	69.	44.32	68.	9.0	66.	33.18	64.	57.27	63.	21.26	61.	45.18	60.	9.2
	9	58.	32.39	56.	56.8	55.	19.34	53.	42.57	52.	6.17	50.	29.37	48.	52.57	47.	16.19
	10	45.	39.44														
										119.	27.4	117.	56.14	116.	25.9	114.	53.49
The Sun.	7	113.	22.14	111.	50.23	110.	18.15	108.	45.52	107.	13.12	105.	40.15	104.	7.1	102.	33.30
	8									94.	41.35	93.	6.20	91.	30.46	89.	54.55
	9	100.	59.42	99.	25.36	97.	51.13	96.	16.33	81.	51.5	80.	13.25	78.	35.28	76.	57.12
	10	88.	18.46	86.	42.18	85.	5.32	83.	28.27								

Stars Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	11	75. 18. 39	73. 39. 47	72. 0. 37	70. 21. 10	68. 41. 26	67. 1. 25	65. 21. 7	63. 40. 33
	12	61. 59. 43	60. 18. 36	58. 37. 15	56. 55. 39	55. 13. 48	53. 31. 42	51. 49. 24	50. 6. 53
	13	48. 24. 10	46. 41. 15	44. 58. 10	43. 14. 56	41. 31. 32	39. 47. 59		
Regulus.	18	39. 8. 54	37. 22. 23	35. 36. 16	33. 50. 33	32. 5. 13	30. 20. 18	28. 35. 49	26. 51. 46
	19	25. 8. 8	23. 24. 57	21. 42. 15	20. 0. 0	18. 18. 14			
Spica ν .	19	- - -	- - -	- - -	- - -	72. 21. 3	70. 40. 3	68. 59. 29	67. 19. 20
	20	65. 39. 37	64. 0. 20	62. 21. 29	60. 43. 3	59. 5. 4	57. 27. 31	55. 50. 24	54. 13. 42
	21	52. 37. 27	51. 1. 37	49. 26. 13	47. 51. 14	46. 16. 41	44. 42. 33	43. 8. 51	41. 35. 34
	22	40. 2. 44	38. 30. 19	36. 58. 20	35. 26. 50	33. 55. 47	32. 25. 13	30. 55. 9	29. 25. 36
	23	27. 56. 32							
Antares.	23	73. 37. 12	72. 6. 22	70. 35. 47	69. 5. 29	67. 35. 25	66. 5. 36	64. 36. 1	63. 6. 40
	24	61. 37. 32	60. 8. 37	58. 39. 54	57. 11. 23	55. 43. 4	54. 14. 56	52. 47. 0	51. 19. 14
	25	49. 51. 40	48. 24. 15	46. 57. 2	45. 29. 59	44. 3. 6	42. 36. 23	41. 9. 51	39. 43. 30
	26	38. 17. 21	36. 51. 20	35. 25. 34	34. 0. 3	32. 34. 47	31. 9. 50	29. 45. 9	28. 20. 49
	27	26. 56. 50							
α Aquilæ.	27	76. 19. 12	75. 2. 24	73. 45. 43	72. 29. 11	71. 12. 44	69. 56. 28	68. 40. 22	67. 24. 25
	28	66. 8. 42	64. 53. 10	63. 37. 52	62. 22. 51	61. 8. 5	59. 53. 35	58. 39. 26	57. 25. 40
	29	56. 12. 16	54. 59. 20	53. 46. 52	52. 34. 56	51. 23. 32			
α Pegasi.	29	- - -	- - -	- - -	- - -	97. 8. 14	95. 44. 52	94. 21. 20	92. 57. 37
	30	91. 33. 43	90. 9. 38	88. 45. 24	87. 21. 2	85. 56. 31	84. 31. 51	83. 7. 2	81. 42. 8
	J. 1	80. 17. 6							

[illegible]

CONFIGURATIONS of the SATELLITES of JUPITER
at 11 o'Clock in the *Morning*.

1	1●				○	³ 2 6 4	
2			2.	4.	○	¹ 3	
3			4.	² 1.	○		3.
4		¹ 4.			○	3.	¹ 2
5		4.		3.	1.	○	2●
6		⁴ 4.		³ 3.	² 2.	○	1.
7		⁴ 4.		³ 3.	¹ 1.	○	² 2.
8		⁴ 4.				○	1. ³ 2.
9	1.○		⁴ 4.	2.	○		³ 3.
10	4.○			² 2.	1.	○	3.
11	3●					○	¹ 2 ² 3 4
12	2●			3.	1.	○	⁴ 4.
13			3.	² 2.	○	1.	⁴ 4.
14			³ 3.	¹ 1.	○	² 2.	⁴ 4.
15					○	³ 1. 2.	4.
16			2.	¹ 1.	○		³ 3. 4.
17			² 2.	1.	○		3 6 4
18					○	¹ 2. ² 3.	
19			3. 4. 7.		○	2.	
20			4. 3.	2.	○	¹ 1.	
21		4.	³ 3.	¹ 1.	○		2.○
22		4.			○	1. 2.	3.○
23		⁴ 4.		2.	¹ 1.	○	³ 3.
24	1●	⁴ 4.		² 2.	○		3.
25		⁴ 4.			○	¹ 1. ² 3.	
26			⁴ 4. 3.	1.	○	2.	
27			3.	2.	○	⁴ 4. 1.	
28	2.○		² 2.	1.	○		⁴ 4.
29	3.○				○	3. 2.	⁴ 4.
30				¹ 1. 2.	○	³ 3.	⁴ 4.

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			○ Full Moon - - - - 1. 19. 44
			☾ Last Quarter - - - - 9. 2. 18
			● New Moon - - - - 15. 19. 31
			☽ First Quarter - - - - 23. 9. 45
			○ Full Moon - - - - 31. 7. 53
			Other Phenomena.
			D. H. M.
			1. 0. 37 ☽ 1 ad μ †
			23. 17 ☽ 0 †
			2. - - ☽ 2 ☽ diff. Lat. 40'
			☽ 1 ☽ diff. Lat. 7'
			1. 41 ☽ π †
			3. 18. 34 ☽ 4
			4. 19. 54 ☽ γ ☽
			23. 5 ☽ 2 ☽
			5. 8. 31 ☽ 1 ☽
			6. 15. 49 ☽ 1 ad $\downarrow$ ☽
			16. 36 ☽ 2 ad $\downarrow$ ☽
			16. 44 ☽ 3 ad $\downarrow$ ☽
			10. 7. 35 ☽ 2 ad ξ Ceti.
			15. 3 ☽ μ Ceti.
			12. - - ☽ Stationary.
			8. 26 ☽ 1 ad δ ☽
			8. 52 ☽ 2 ad δ ☽
			13. 16 ☽ 2 ☽
			15. - - ☽ eclipsed, invisible.
			18. - - ☽ μ π diff. Lat. 23'
			20. 21. 30 ☽ c η
			22. 11. 35 ☽ enters Ω
			25. 4. 55 ☽ γ ☽
			9. 6 I. η ☽ * 7' N. of D's C.
			10. 14. 12 E. η ☽ * 8' $\frac{1}{2}$
			14. 26 ☽ 0 ☽
			28. 8. 24 ☽ 1 ad μ †
			29. - - ☽ 2 π diff. Lat. 14'
			6. 59 ☽ 0 †
			9. 23 ☽ π †
			30. 19. 43 ☽ 4
			31. - - ☽ eclipsed, partly vis.

Days of the Week.	Days of the Month.	T H E S U N ' s			Equation of Time.	Diff.
		Longitude.	Rt. Ascen. <i>in Time.</i>	Declin. <i>North.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
W.	1	3. 9. 30. 14	6. 41. 22, 3	23. 7. 25	3. 21, 5	11, 3
Th.	2	3. 10. 27. 25	6. 45. 30, 2	23. 3. 7	3. 32, 8	11, 0
F.	3	3. 11. 24. 35	6. 49. 37, 8	22. 58. 25	3. 43, 8	10, 8
Sa.	4	3. 12. 21. 45	6. 53. 45, 2	22. 53. 20	3. 54, 6	10, 4
Sun.	5	3. 13. 18. 56	6. 57. 52, 2	22. 47. 51	4. 5, 0	10, 1
M.	6	3. 14. 16. 7	7. 1. 58, 9	22. 41. 58	4. 15, 1	9, 8
Tu.	7	3. 15. 13. 19	7. 6. 5, 3	22. 35. 41	4. 24, 9	9, 5
W.	8	3. 16. 10. 31	7. 10. 11, 4	22. 29. 1	4. 34, 4	9, 1
Th.	9	3. 17. 7. 44	7. 14. 17, 1	22. 21. 57	4. 43, 5	8, 7
F.	10	3. 18. 4. 57	7. 18. 22, 4	22. 14. 30	4. 52, 2	8, 3
Sa.	11	3. 19. 2. 11	7. 22. 27, 3	22. 6. 40	5. 0, 5	7, 9
Sun.	12	3. 19. 59. 25	7. 26. 31, 7	21. 58. 27	5. 8, 4	7, 4
M.	13	3. 20. 56. 40	7. 30. 35, 7	21. 49. 51	5. 15, 8	7, 0
Tu.	14	3. 21. 53. 56	7. 34. 39, 3	21. 40. 53	5. 22, 8	6, 6
W.	15	3. 22. 51. 12	7. 38. 42, 4	21. 31. 33	5. 29, 4	6, 0
Th.	16	3. 23. 48. 29	7. 42. 45, 0	21. 21. 51	5. 35, 4	5, 5
F.	17	3. 24. 45. 46	7. 46. 47, 1	21. 11. 47	5. 40, 9	5, 0
Sa.	18	3. 25. 43. 4	7. 50. 48, 6	21. 1. 21	5. 45, 9	4, 5
Sun.	19	3. 26. 40. 22	7. 54. 49, 6	20. 50. 34	5. 50, 4	3, 9
M.	20	3. 27. 37. 41	7. 58. 50, 1	20. 39. 26	5. 54, 3	3, 3
Tu.	21	3. 28. 35. 0	8. 2. 50, 0	20. 27. 57	5. 57, 6	2, 8
W.	22	3. 29. 32. 19	8. 6. 49, 3	20. 16. 8	6. 0, 4	2, 1
Th.	23	4. 0. 29. 38	8. 10. 48, 0	20. 3. 58	6. 2, 5	1, 5
F.	24	4. 1. 26. 58	8. 14. 46, 1	19. 51. 28	6. 4, 0	0, 9
Sa.	25	4. 2. 24. 18	8. 18. 43, 6	19. 38. 38	6. 4, 9	0, 4
Sun.	26	4. 3. 21. 39	8. 22. 40, 5	19. 25. 29	6. 5, 3	0, 2
M.	27	4. 4. 19. 0	8. 26. 36, 8	19. 12. 1	6. 5, 1	0, 9
Tu.	28	4. 5. 16. 21	8. 30. 32, 5	18. 58. 13	6. 4, 2	1, 6
W.	29	4. 6. 13. 43	8. 34. 27, 5	18. 44. 7	6. 2, 6	2, 1
Th.	30	4. 7. 11. 6	8. 38. 21, 9	18. 29. 43	6. 0, 5	2, 7
F.	31	4. 8. 8. 30	8. 42. 15, 7	18. 15. 0	5. 57, 8	

Days	Time of ☉'s Semidiam. pass ³ Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 8. 6	15. 46. 9	2. 23. 0	0. 007208	4. 0. 19
7	1. 8. 4	15. 47. 0	2. 23. 0	0. 007182	4. 0. 0
13	1. 8. 0	15. 47. 2	2. 23. 1	0. 007090	3. 29. 41
19	1. 7. 6	15. 47. 6	2. 23. 2	0. 006906	3. 29. 22
25	1. 7. 1	15. 48. 2	2. 23. 4	0. 006634	3. 29. 3

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.			II. Satellite.			III. Satellite.		
<i>Immersions.</i>			<i>Immersions.</i>					
Days.	H. M. S.		Days.	H. M. S.		Days.	H. M. S.	
2	9. 2. 58		2	21. 2. 24		2	1. 37. 9	Im.
4	3. 31. 11		* 6	10. 19. 24		2	5. 8. 35	E.
5	21. 59. 26		9	23. 36. 29		9	5. 35. 40	Im.
7	16. 27. 42		* 13	12. 53. 39		9	9. 7. 24	E.
* 9	10. 56. 2		17	2. 10. 55		* 16	9. 34. 45	Im.
11	5. 24. 21		20	15. 28. 17		* 16	13. 6. 46	E.
12	23. 52. 43		24	4. 45. 45		* 23	13. 34. 26	Im.
14	18. 21. 8			<i>Emerfions.</i>		23	17. 6. 43	E.
* 16	12. 49. 35		27	20. 52. 37		30	17. 34. 46	Im.
18	7. 18. 4		* 31	10. 10. 23		30	21. 7. 18	E.
20	1. 46. 34							
21	20. 15. 9							
23	14. 43. 45							
	<i>Emerfions.</i>							
25	11. 27. 47							
27	5. 56. 28							
29	0. 25. 13							
30	18. 54. 1							
						IV. Satellite.		
						Days.	H. M. S.	
						4	5. 53. 57	Im.
						* 4	10. 18. 3	E.
						20	23. 58. 29	Im.
						21	4. 25. 54	E.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage Merid.	
	Long.	Lat.	Long.	Lat.			
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
♿ MERCURY. Inf. 626°.3 ^h 1.							
1	7.21.9	0.38 S	4.5.6	0.22 S	18.39 N	1.48	
4	7.29.3 ^h	1.40	4.7.15	1.2	17.29	1.44	
7	8.7.53	2.38	4.8.48	1.44	16.25	1.37	
10	8.16.7	3.32	4.9.44	2.28	15.28	1.27	
13	8.24.24	4.22	4.9.56	3.11	14.43	1.15	
16	9.2.48	5.7	4.9.26	3.51	14.12	1.0	
19	9.11.25	5.47	4.8.15	4.25	13.58	0.43	
22	9.20.22	6.19	4.6.28	4.48	14.2	0.24	
25	9.29.46	6.44	4.4.21	4.57	14.23	0.3	
28	10.9.43	6.58	4.2.11	4.51	14.58	23.36	
31	10.20.23	6.59	4.0.20	4.29	15.43	23.18	
♀ VENUS. 61°.17 ^h .							
1	1.0.25	2.22 S	2.11.35	1.11 S	21.1 N	22.0	
7	1.10.1	1.56	2.18.47	0.57	22.3	22.6	
13	1.19.38	1.27	2.26.1	0.42	22.43	22.13	
19	1.29.16	0.55	3.3.17	0.26	23.0	22.21	
25	2.8.56	0.21	3.10.33	0.10	22.53	22.29	
♂ MARS. 61°.17 ^h .							
1	3.9.50	1.27 N	3.9.43	0.53 N	24.0 N	0.1	
7	3.12.40	1.30	3.13.39	0.55	23.41	23.53	
13	3.15.28	1.33	3.17.35	0.57	23.16	23.45	
19	3.18.15	1.36	3.21.30	0.59	22.44	23.38	
25	3.21.1	1.39	3.25.24	1.1	22.5	23.30	
♃ JUPITER. 825°.3 ^h .							
1	10.0.26	0.29 S	10.5.26	0.35 S	19.30 S	13.48	
7	10.0.57	0.30	10.4.47	0.36	19.41	13.21	
13	10.1.28	0.30	10.4.4	0.37	19.52	12.53	
19	10.1.59	0.31	10.3.19	0.38	20.3	12.26	
25	10.2.30	0.31	10.2.32	0.39	20.15	11.59	
♄ SATURN. 19.58 N 21.41							
1	2.4.28	1.51 S	2.7.51	1.41 S	19.58 N	21.41	
7	2.4.41	1.50	2.8.32	1.41	20.5	21.19	
13	2.4.55	1.50	2.9.12	1.42	20.11	20.57	
19	2.5.8	1.50	2.9.50	1.42	20.16	20.36	
25	2.5.21	1.49	2.10.25	1.42	20.21	20.15	
♅ GEORGIAN. 11.37 2.12							
1	5.2.59	0.46 N	5.0.30	0.44 N	12.0 N	3.29	
11	5.3.7	0.46	5.0.59	0.44	11.49	2.50	
21	5.3.15	0.46	5.1.31	0.44	11.37	2.12	

		THE MOON'S			
Days of the Week.	Days of the Month.	Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
W.	1	9. 0. 2. 11	9. 6. 14. 54	2. 33. 56 N	2. 3. 17 N
Th.	2	9. 12. 30. 32	9. 18. 49. 9	1. 30. 53	0. 57. 5 N
F.	3	9. 25. 10. 54	10. 1. 35. 50	0. 22. 16 N	0. 13. 8 S
Sa.	4	10. 8. 4. 2	10. 14. 35. 31	0. 48. 42 S	1. 23. 56
Sun.	5	10. 21. 10. 24	10. 27. 48. 38	1. 58. 22	2. 31. 30
M.	6	11. 4. 30. 20	11. 11. 15. 27	3. 2. 52	3. 31. 57
Tu.	7	11. 18. 4. 1	11. 24. 56. 2	3. 58. 18	4. 21. 27
W.	8	0. 1. 51. 23	0. 8. 50. 3	4. 41. 0	4. 56. 33
Th.	9	0. 15. 51. 52	0. 22. 56. 39	5. 7. 48	5. 14. 29
F.	10	1. 0. 4. 11	1. 7. 14. 8	5. 16. 22	5. 13. 22
Sa.	11	1. 14. 26. 7	1. 21. 39. 44	5. 5. 26	4. 52. 40
Sun.	12	1. 28. 54. 26	2. 6. 9. 38	4. 35. 11	4. 13. 18
M.	13	2. 13. 24. 44	2. 20. 39. 0	3. 47. 20	3. 17. 46
Tu.	14	2. 27. 51. 47	3. 5. 2. 25	2. 45. 8	2. 10. 1
W.	15	3. 12. 10. 11	3. 19. 14. 31	1. 33. 5	0. 54. 59 S
Th.	16	3. 26. 14. 51	4. 3. 10. 46	0. 16. 24 S	0. 22. 1 N
F.	17	4. 10. 1. 51	4. 16. 47. 53	0. 59. 42 N	1. 36. 3
Sa.	18	4. 23. 28. 41	5. 0. 4. 11	2. 10. 36	2. 42. 58
Sun.	19	5. 6. 34. 29	5. 12. 59. 42	3. 12. 44	3. 39. 41
M.	20	5. 19. 20. 3	5. 25. 35. 54	4. 3. 34	4. 24. 13
Tu.	21	6. 1. 47. 34	6. 7. 55. 30	4. 41. 33	4. 55. 28
W.	22	6. 14. 0. 12	6. 20. 2. 9	5. 5. 57	5. 12. 58
Th.	23	6. 26. 1. 54	7. 2. 0. 3	5. 16. 30	5. 16. 38
F.	24	7. 7. 57. 7	7. 13. 53. 41	5. 13. 21	5. 6. 43
Sa.	25	7. 19. 50. 22	7. 25. 47. 38	4. 56. 49	4. 43. 42
Sun.	26	8. 1. 46. 6	8. 7. 46. 13	4. 27. 28	4. 8. 15
M.	27	8. 13. 48. 31	8. 19. 53. 26	3. 46. 9	3. 21. 22
Tu.	28	8. 26. 1. 22	9. 2. 12. 38	2. 54. 3	2. 24. 27
W.	29	9. 8. 27. 34	9. 14. 46. 25	1. 52. 51	1. 19. 31
Th.	30	9. 21. 9. 19	9. 27. 36. 24	0. 44. 52 N	0. 9. 16 N
F.	31	10. 4. 7. 43	10. 10. 43. 16	0. 26. 50 S	1. 2. 58 S

		THE M O O N ' s					
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
W.	1	16	11. 43	270. 2	276. 42	20. 54 S	21. 16 S
Th.	2	17	12. 35	283. 27	290. 15	21. 22	21. 12
F.	3	18	13. 27	297. 4	303. 54	20. 45	20. 2
Sa.	4	19	14. 19	310. 43	317. 29	19. 3	17. 49
Sun.	5	20	15. 10	324. 13	330. 54	16. 20	14. 37
M.	6	21	16. 0	337. 31	344. 5	12. 42	10. 37
Tu.	7	22	16. 50	350. 36	357. 5	8. 23	6. 1
W.	8	23	17. 40	3. 34	10. 4	3. 33 S	1. 2 S
Th.	9	24	18. 30	16. 35	23. 10	1. 31 N	4. 3 N
F.	10	25	19. 22	29. 50	36. 37	6. 34	9. 0
Sa.	11	26	20. 16	43. 30	50. 32	11. 19	13. 29
Sun.	12	27	21. 13	57. 43	65. 2	15. 27	17. 12
M.	13	28	22. 12	72. 30	80. 4	18. 40	19. 50
Tu.	14	29	23. 12	87. 43	95. 24	20. 42	21. 12
W.	15	1	0	103. 5	110. 42	21. 22	21. 10
Th.	16	2	0. 10	118. 12	125. 34	20. 39	19. 49
F.	17	3	1. 6	132. 46	139. 46	18. 43	17. 21
Sa.	18	4	1. 59	146. 33	153. 9	15. 45	14. 0
Sun.	19	5	2. 48	159. 32	165. 45	12. 6	10. 4
M.	20	6	3. 34	171. 48	177. 43	7. 57	5. 47
Tu.	21	7	4. 18	183. 31	189. 14	3. 35 N	1. 23 N
W.	22	8	5. 0	194. 52	200. 28	0. 50 S	3. 1 S
Th.	23	9	5. 42	206. 3	211. 39	5. 9	7. 14
F.	24	10	6. 25	217. 18	222. 59	9. 14	11. 9
Sa.	25	11	7. 9	228. 45	234. 37	12. 57	14. 38
Sun.	26	12	7. 54	240. 35	246. 41	16. 10	17. 32
M.	27	13	8. 42	252. 55	259. 16	18. 44	19. 44
Tu.	28	14	9. 32	265. 45	272. 22	20. 30	21. 2
W.	29	15	10. 24	279. 5	285. 53	21. 19	21. 19
Th.	30	16	11. 17	292. 45	299. 39	21. 3	20. 30
F.	31	17	12. 10	306. 34	313. 29	19. 40	18. 34

Days of the Week.	Days of the Month.	THE MOON'S				Proportional	
		Semidiameter.		Hor. Parallax.		Logarithm.	
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
W.	1	15. 5	15. 9	55. 22	55. 36	5120	5102
Th.	2	15. 13	15. 17	55. 50	56. 5	5084	5064
F.	3	15. 21	15. 25	56. 20	56. 35	5045	5026
Sa.	4	15. 29	15. 34	56. 50	57. 6	5006	4986
Sun.	5	15. 38	15. 42	57. 21	57. 36	4967	4949
M.	6	15. 46	15. 50	57. 51	58. 6	4930	4911
Tu.	7	15. 54	15. 58	58. 21	58. 35	4892	4875
W.	8	16. 1	16. 5	58. 48	59. 1	4859	4843
Th.	9	16. 8	16. 11	59. 13	59. 24	4828	4815
F.	10	16. 14	16. 16	59. 34	59. 43	4802	4792
Sa.	11	16. 18	16. 20	59. 50	59. 56	4783	4776
Sun.	12	16. 21	16. 21	59. 59	60. 0	4772	4771
M.	13	16. 20	16. 19	59. 58	59. 54	4773	4778
Tu.	14	16. 17	16. 15	59. 47	59. 38	4787	4798
W.	15	16. 12	16. 8	59. 26	59. 11	4812	4831
Th.	16	16. 3	15. 58	58. 53	58. 34	4853	4876
F.	17	15. 52	15. 45	58. 12	57. 49	4903	4932
Sa.	18	15. 39	15. 33	57. 26	57. 4	4961	4989
Sun.	19	15. 27	15. 21	56. 41	56. 19	5018	5046
M.	20	15. 15	15. 10	55. 59	55. 39	5072	5098
Tu.	21	15. 5	15. 1	55. 21	55. 5	5122	5142
W.	22	14. 57	14. 54	54. 52	54. 41	5159	5174
Th.	23	14. 52	14. 50	54. 33	54. 27	5185	5193
F.	24	14. 49	14. 49	54. 24	54. 23	5197	5198
Sa.	25	14. 50	14. 51	54. 25	54. 28	5195	5191
Sun.	26	14. 52	14. 54	54. 34	54. 42	5183	5173
M.	27	14. 57	15. 1	54. 52	55. 5	5159	5142
Tu.	28	15. 5	15. 9	55. 20	55. 30	5123	5102
W.	29	15. 13	15. 18	55. 52	56. 10	5081	5058
Th.	30	15. 23	15. 28	56. 28	56. 46	5035	5012
F.	31	15. 33	15. 38	57. 4	57. 22	4989	4966

DISTANCES of MOON's *Center* from SUN, and from STARS *EAST* of her.

Stars Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Pegasi.	1	80. 17. 7	78. 51. 58	77. 26. 43	76. 1. 23	74. 35. 58	73. 10. 30	71. 45. 0	70. 19. 28
	2	68. 53. 55	67. 28. 22	66. 2. 53	64. 37. 24	63. 11. 59	61. 46. 38	60. 21. 25	58. 56. 21
	3	57. 31. 26	56. 6. 41	54. 42. 12	53. 18. 1	51. 54. 10	50. 30. 41	49. 7. 41	47. 45. 8
	4	46. 23. 6							
α Arietis.	4	86. 55. 14	85. 20. 44	83. 46. 3	82. 11. 12	80. 36. 10	79. 0. 56	77. 25. 36	75. 50. 9
	5	74. 14. 34	72. 38. 50	71. 2. 58	69. 27. 0	67. 50. 56	66. 14. 45	64. 38. 30	63. 2. 11
	6	61. 25. 50	59. 49. 26	58. 13. 1	56. 36. 36	55. 0. 13	53. 23. 51	51. 47. 33	50. 11. 19
	7	48. 35. 9							
Aldebaran.	7	78. 32. 56	76. 50. 20	75. 7. 33	73. 24. 36	71. 41. 28	60. 58. 9	68. 14. 39	66. 30. 58
	8	64. 47. 5	63. 3. 1	61. 18. 46	59. 34. 20	57. 49. 44	56. 4. 57	54. 20. 0	52. 34. 53
	9	50. 49. 35							
The Sun.	6							120. 15. 22	118. 40. 18
	7	117. 5. 3	115. 29. 36	113. 53. 58	112. 18. 9	110. 42. 8	109. 5. 56	107. 29. 33	105. 52. 58
	8	104. 16. 12	102. 39. 15	101. 2. 7	99. 24. 48	97. 47. 19	96. 9. 39	94. 31. 48	92. 53. 46
	9	91. 15. 34	89. 37. 11	87. 58. 38	86. 19. 55	84. 41. 2	83. 1. 59	81. 22. 46	79. 43. 24
	10	78. 3. 52	76. 24. 11	74. 44. 21	73. 4. 22	71. 24. 15	69. 44. 0	68. 3. 37	66. 23. 7

Stars Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	11	64. 42. 30	63. 1. 45	61. 20. 54	59. 39. 57	57. 58. 54	56. 17. 45	54. 36. 32	52. 55. 14
	12	51. 13. 52	49. 32. 27	47. 51. 0	46. 9. 30	44. 27. 58	42. 46. 25	41. 4. 51	39. 23. 17
	13	37. 41. 42							
Spica η .	17	71. 0. 30	69. 19. 1	67. 37. 53	65. 57. 7	64. 16. 44	62. 36. 43	60. 57. 5	59. 17. 49
	18	57. 38. 56	56. 0. 26	54. 22. 20	52. 44. 38	51. 7. 19	49. 30. 24	47. 53. 54	46. 17. 49
	19	44. 42. 9	43. 6. 54	41. 32. 5	39. 57. 43	38. 23. 47	36. 50. 18	35. 17. 19	33. 44. 50
	20	32. 12. 51	30. 41. 21	29. 10. 24	27. 40. 5	26. 10. 27	24. 41. 31	23. 13. 21	21. 45. 59
	21	20. 19. 28							
Antares.	21	65. 41. 47	64. 11. 0	62. 40. 29	61. 10. 14	59. 40. 16	58. 10. 33	56. 41. 5	55. 11. 51
	22	53. 42. 52	52. 14. 7	50. 45. 37	49. 17. 20	47. 49. 17	46. 21. 28	44. 53. 52	43. 26. 30
	23	41. 59. 22	40. 32. 28	39. 5. 48	37. 39. 23	36. 13. 15	34. 47. 23	33. 21. 47	31. 56. 29
	24	30. 31. 31	29. 6. 58	27. 42. 50	26. 19. 8	24. 55. 53			
α Aquilæ.	24	- - -	- - -	- - -	- - -	74. 25. 26	73. 8. 53	71. 52. 30	70. 36. 17
	25	69. 20. 14	68. 4. 23	66. 48. 44	65. 33. 19	64. 18. 8	63. 3. 10	61. 48. 30	60. 34. 8
	26	59. 20. 4	58. 6. 21	56. 53. 1	55. 40. 5	54. 27. 36	53. 15. 35	52. 4. 8	50. 53. 13
	27	49. 42. 51							
α Pegasi.	27	95. 10. 11	93. 46. 48	92. 23. 14	90. 59. 27	89. 35. 29	88. 11. 19	86. 46. 59	85. 22. 28
	28	83. 57. 46	82. 32. 54	81. 7. 53	79. 42. 43	78. 17. 24	76. 51. 56	75. 26. 21	74. 0. 38
	29	72. 34. 48	71. 8. 53	69. 42. 54	68. 16. 52	66. 50. 47	65. 24. 40	63. 58. 33	62. 32. 26
	30	61. 6. 22	59. 40. 20	58. 14. 26	56. 48. 41	55. 23. 6	53. 57. 45	52. 32. 42	51. 7. 56
	31	49. 43. 31							
α Arietis.	31	90. 44. 25	89. 8. 55	87. 33. 13	85. 57. 18	84. 21. 10	82. 44. 47	81. 8. 11	79. 31. 26
	A. 1	77. 54. 30							

DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	1	24. 10. 36	25. 37. 37	27. 5. 23	28. 33. 50	30. 2. 56	31. 32. 38	33. 2. 54	34. 33. 40	36. 2. 56	37. 36. 34	39. 8. 37	40. 41. 3	42. 13. 51	43. 46. 59	45. 20. 28	46. 54. 16
	2	36. 4. 54	37. 36. 34	39. 8. 37	40. 41. 3	42. 13. 51	43. 46. 59	45. 20. 28	46. 54. 16	48. 28. 22	50. 2. 46	51. 37. 27	53. 12. 25	54. 47. 39	56. 23. 9	57. 58. 54	59. 34. 55
	3	48. 28. 22	50. 2. 46	51. 37. 27	53. 12. 25	54. 47. 39	56. 23. 9	57. 58. 54	59. 34. 55	61. 11. 11	62. 47. 41	64. 24. 25	66. 1. 24	67. 38. 37	69. 16. 3	70. 53. 42	72. 31. 34
	4	61. 11. 11	62. 47. 41	64. 24. 25	66. 1. 24	67. 38. 37	69. 16. 3	70. 53. 42	72. 31. 34	74. 9. 40	75. 47. 59	77. 26. 30	79. 5. 14	80. 44. 10	82. 23. 18	84. 2. 39	85. 42. 12
	5	74. 9. 40	75. 47. 59	77. 26. 30	79. 5. 14	80. 44. 10	82. 23. 18	84. 2. 39	85. 42. 12	87. 21. 56	89. 1. 51	90. 41. 58	92. 22. 17	94. 2. 46	95. 43. 26	97. 24. 17	99. 5. 19
	6	87. 21. 56	89. 1. 51	90. 41. 58	92. 22. 17	94. 2. 46	95. 43. 26	97. 24. 17	99. 5. 19	100. 46. 31	102. 27. 53	104. 9. 26	105. 51. 9	107. 33. 2	109. 14. 5	110. 56. 28	112. 38. 33
	7	100. 46. 31	102. 27. 53	104. 9. 26	105. 51. 9	107. 33. 2	109. 14. 5	110. 56. 28	112. 38. 33	63. 21. 28	64. 48. 23	66. 15. 52	67. 43. 53	69. 11. 5	70. 41. 44	72. 10. 54	73. 40. 48
α Aquilæ.	8	69. 12. 25	70. 41. 26	72. 10. 54	73. 40. 48	75. 11. 5	76. 41. 44	78. 12. 44	79. 44. 3	77. 24. 38	78. 51. 33	80. 18. 41	81. 45. 3	83. 12. 44	84. 40. 35	86. 8. 25	87. 36. 20
	9	81. 15. 40	82. 47. 33	84. 19. 41	85. 52. 3	87. 24. 38	88. 56. 31	90. 28. 24	91. 59. 17	52. 45. 3	54. 22. 53	56. 1. 11	57. 39. 56	59. 8. 25	60. 36. 18	62. 4. 42	64. 22. 17
	10	59. 19. 6	60. 58. 41	62. 38. 40	64. 18. 59	65. 59. 38	67. 40. 35	69. 21. 48	71. 3. 17	63. 21. 28	64. 48. 23	66. 15. 52	67. 43. 53	69. 11. 5	70. 41. 44	72. 10. 54	73. 40. 48
Fomalhaut.	11	72. 45. 2	74. 27. 0	76. 9. 9	77. 51. 29	79. 34. 0	81. 16. 40	82. 59. 27	84. 42. 20	75. 11. 5	76. 41. 44	78. 12. 44	79. 44. 3	80. 18. 41	81. 45. 3	83. 12. 44	84. 40. 35
	12	86. 25. 20	88. 8. 25	89. 51. 32	91. 34. 42	93. 17. 53	94. 2. 46	95. 43. 26	97. 24. 17	52. 45. 3	54. 22. 53	56. 1. 11	57. 39. 56	59. 8. 25	60. 36. 18	62. 4. 42	64. 22. 17
	13	-	-	-	-	-	-	-	-	34. 18. 34	35. 55. 23	37. 33. 3	39. 11. 30	40. 50. 42	42. 30. 32	44. 10. 55	45. 51. 47
α Arietis.	14	40. 50. 42	42. 30. 32	44. 10. 55	45. 51. 47	47. 33. 3	49. 14. 37	50. 56. 28	52. 38. 33	47. 33. 3	49. 14. 37	50. 56. 28	52. 38. 33	54. 20. 50	56. 3. 17	57. 45. 50	59. 28. 28
	15	54. 20. 50	56. 3. 17	57. 45. 50	59. 28. 28	61. 11. 9	62. 47. 41	64. 24. 25	66. 1. 24	61. 11. 9	62. 47. 41	64. 24. 25	66. 1. 24	67. 38. 37	69. 16. 3	70. 53. 42	72. 31. 34

Stars Names.	Days	Noon.	III ^h .	V ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	19	40. 0. 34	41. 30. 18	42. 59. 42	44. 28. 46	45. 57. 29	47. 25. 52	48. 53. 57	50. 21. 43
	20	51. 49. 10	53. 16. 19	54. 43. 11	56. 9. 45	57. 36. 2	59. 2. 1	60. 27. 44	61. 53. 11
	21	63. 18. 23	64. 43. 20	66. 8. 2	67. 32. 30	68. 56. 45	70. 20. 47	71. 44. 36	73. 8. 14
	22	74. 31. 40	75. 54. 55	77. 18. 0	78. 40. 55	80. 3. 41	81. 26. 18	82. 48. 47	84. 11. 9
	23	85. 33. 24	86. 55. 33	88. 17. 36	89. 39. 35	91. 1. 29	92. 23. 19	93. 45. 6	95. 6. 50
	24	96. 28. 31	97. 50. 11	99. 11. 51	100. 33. 30	101. 55. 9	103. 10. 49	104. 38. 31	106. 0. 15
Regulus.	25	107. 22. 2	108. 43. 52	110. 5. 45	111. 27. 42	112. 49. 44	114. 11. 51	115. 34. 4	116. 56. 23
	26	118. 18. 49	119. 41. 22	121. 4. 3	-	-	-	-	-
	27	-	-	-	-	-	-	-	-
Spica ν .	28	71. 0. 31	72. 29. 16	73. 58. 0	75. 26. 44	76. 55. 28	78. 24. 13	79. 53. 0	81. 21. 49
	29	82. 50. 41	-	-	-	-	-	-	-
	30	-	-	-	-	-	-	-	-
Antares.	31	29. 39. 37	31. 5. 46	32. 32. 11	33. 58. 52	35. 25. 48	36. 52. 59	38. 20. 24	39. 48. 3
	32	41. 15. 56	42. 44. 1	44. 12. 19	45. 40. 50	47. 9. 34	48. 38. 31	50. 7. 42	51. 37. 6
	33	53. 6. 44	54. 36. 35	56. 6. 39	57. 36. 57	59. 7. 30	60. 38. 17	62. 9. 19	63. 40. 36
	34	65. 12. 8	-	-	-	-	-	-	-
Antares.	35	20. 29. 51	21. 54. 9	23. 19. 31	24. 45. 53	26. 13. 11	27. 41. 21	29. 10. 19	30. 40. 1
	36	32. 10. 21	33. 41. 14	35. 12. 39	36. 44. 37	38. 17. 4	39. 49. 57	41. 23. 16	42. 57. 0
	37	44. 31. 10	46. 5. 44	47. 40. 40	49. 15. 58	50. 51. 38	52. 27. 38	54. 3. 58	55. 40. 38
	38	57. 17. 38	58. 54. 58	60. 32. 36	62. 10. 32	63. 48. 46	65. 27. 17	67. 6. 4	68. 45. 7
Antares.	39	70. 24. 25	-	-	-	-	-	-	-
	40	-	-	-	-	-	-	-	-

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			☾ Last Quarter - - - -	7. 6. 47
			☉ New Moon - - - - -	14. 5. 53
			☽ First Quarter - - - -	22. 3. 26
			☾ Full Moon - - - - -	29. 18. 37
			Other Phenomena.	
			D. H. M.	
Sa.	1	Lammas-Day.	1. 2. 45	☽ γ ♄
Sun.	2	9th Sunday after Trinity.	5. 53	☽ δ ♄
M.	3		15. 6	☽ ι ☿
Tu.	4		2. 21. 52	☽ ι ad ↓ ☿
W.	5		22. 39	☽ 2 ad ↓ ☿
Th.	6	Transfig. of our Lord.	22. 46	☽ 3 ad ↓ ☿
F.	7	Name of Jesus.	6 - - -	☽ Stationary.
Sa.	8		12. 19	Im. of 2 ad ☽ Ceti, * 14 ¹ / ₂
Sun.	9	10th Sunday after Trinity.		N. of ☽'s Cent.
M.	10	St. Lawrence.	12. 50 ³ / ₄	Em. * 12 ¹ / ₂ North.
Tu.	11	Prs. of Brunswick born.	20. 35	☽ μ Ceti.
W.	12	Pr. of Wales born 1762.	8. 12. 53	☽ γ ♄
Th.	13		14. 41	☽ ι ad δ ♄
F.	14		15. 8	☽ 2 ad δ ♄
Sa.	15		9. 21. 7	☽ ζ ♄
Sun.	16	11th Sun. aft. Trin. D. of	10. 17. 42	☽ ν ♀
M.	17	York born.	11. 7. 49	☽ ζ ♀
Tu.	18		12. 18. 14	☽ ξ ♄
W.	19		17. 6. 7	☽ c ♀
Th.	20		21. 13. 0	☽ γ ☿
F.	21	Duke of Clarence born.	17. 32	☽ η ☿
Sa.	22		22. 34	☽ θ ☿
Sun.	23	12th Sunday after Trinity.	22. 17. 59	☉ enters ♀
M.	24	St. Bartholomew.	24. 17. 6	☽ ι ad μ ♄
Tu.	25		25. 15. 51	☽ ο ♄
W.	26		18. 16	☽ π ♄
Th.	27		28. 11. 50 ¹ / ₂	I.
F.	28	St. Augustine.	13. 1	E. γ ♄ * 4 ¹ / ₂ N. of ☽'s C.
Sa.	29	St. John Bap. beheaded.	15. 34	I. δ ♄ * 1 ¹ / ₂ S. of ☽'s C.
Sun.	30	13th Sunday after Trinity.	16. 31 ¹ / ₂	E. δ ♄ * 2 ¹ / ₂
M.	31		23. 45	☽ ι ☿
			30. 5. 56	☽ ι ad ↓ ☿
			6. 41	☽ 2 ad ↓ ☿
			6. 48	☽ 3 ad ↓ ☿

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Add.</i>	Diff.
		Longitude.	R ^t . Ascen. <i>in Time.</i>	Declin. <i>North.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sa.	1	4. 9. 5. 55	8. 46. 9. 0	17. 59. 59	5. 54. 5	
Sun.	2	4. 10. 3. 20	8. 50. 1. 6	17. 44. 41	5. 50. 5	4. 0
M.	3	4. 11. 0. 47	8. 53. 53. 6	17. 29. 5	5. 46. 0	4. 5
Tu.	4	4. 11. 58. 15	8. 57. 45. 0	17. 13. 12	5. 40. 9	5. 1
W.	5	4. 12. 55. 44	9. 1. 35. 9	16. 57. 2	5. 35. 3	5. 6
Th.	6	4. 13. 53. 15	9. 5. 26. 2	16. 40. 36	5. 29. 1	6. 2
F.	7	4. 14. 50. 47	9. 9. 15. 9	16. 23. 53	5. 22. 3	6. 8
Sa.	8	4. 15. 48. 20	9. 13. 5. 0	16. 6. 54	5. 14. 9	7. 4
Sun.	9	4. 16. 45. 55	9. 16. 53. 6	15. 49. 40	5. 6. 9	8. 0
M.	10	4. 17. 43. 32	9. 20. 41. 7	15. 32. 11	4. 58. 4	8. 5
Tu.	11	4. 18. 41. 10	9. 24. 29. 2	15. 14. 26	4. 49. 4	9. 0
W.	12	4. 19. 38. 49	9. 28. 16. 2	14. 56. 26	4. 39. 8	9. 6
Th.	13	4. 20. 36. 30	9. 32. 2. 6	14. 38. 12	4. 29. 7	10. 1
F.	14	4. 21. 34. 12	9. 35. 48. 4	14. 19. 44	4. 19. 0	10. 7
Sa.	15	4. 22. 31. 56	9. 39. 33. 7	14. 1. 3	4. 7. 8	11. 2
Sun.	16	4. 23. 29. 41	9. 43. 18. 5	13. 42. 8	3. 56. 1	11. 7
M.	17	4. 24. 27. 27	9. 47. 2. 8	13. 23. 0	3. 43. 8	12. 3
Tu.	18	4. 25. 25. 15	9. 50. 46. 6	13. 3. 39	3. 31. 0	12. 8
W.	19	4. 26. 23. 4	9. 54. 29. 8	12. 44. 5	3. 17. 7	13. 3
Th.	20	4. 27. 20. 54	9. 58. 12. 6	12. 24. 20	3. 4. 0	13. 7
F.	21	4. 28. 18. 45	10. 1. 54. 8	12. 4. 23	2. 49. 7	14. 3
Sa.	22	4. 29. 16. 37	10. 5. 36. 6	11. 44. 14	2. 35. 0	14. 7
Sun.	23	5. 0. 14. 30	10. 9. 17. 9	11. 23. 54	2. 19. 8	15. 2
M.	24	5. 1. 12. 24	10. 12. 58. 7	11. 3. 24	2. 4. 1	15. 7
Tu.	25	5. 2. 10. 19	10. 16. 39. 1	10. 42. 44	1. 48. 0	16. 1
W.	26	5. 3. 8. 16	10. 20. 19. 1	10. 21. 54	1. 31. 4	16. 6
Th.	27	5. 4. 6. 14	10. 23. 58. 7	10. 0. 53	1. 14. 5	16. 9
F.	28	5. 5. 4. 14	10. 27. 37. 9	9. 39. 42	0. 57. 2	17. 3
Sa.	29	5. 6. 2. 15	10. 31. 16. 7	9. 18. 23	0. 39. 6	17. 6
Sun.	30	5. 7. 0. 18	10. 34. 55. 2	8. 56. 55	0. 21. 6	18. 0
M.	31	5. 7. 58. 22	10. 38. 33. 4	8. 35. 18	0. 3. 2	18. 4

Days	Time of ☉'s Semidiam. pass ^s Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 6, 5	15. 49, 0	2. 23, 6	0. 006241	3. 28. 41
7	1. 6, 0	15. 49, 9	2. 23, 9	0. 005860	3. 28. 22
13	1. 5, 5	15. 50, 9	2. 24, 2	0. 005417	3. 28. 3
19	1. 5, 1	15. 52, 1	2. 24, 6	0. 004896	3. 27. 44
25	1. 4, 7	15. 53, 3	2. 24, 9	0. 004307	3. 27. 25

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
* 1	13. 22. 50	3	23. 28. 15	6	21. 35. 46 Im.
3	7. 51. 40	* 7	12. 46. 17	7	1. 8. 31 E.
5	2. 20. 33	11	2. 4. 26	14	1. 37. 27 Im.
6	20. 49. 31	14	15. 22. 44	14	5. 10. 24 E.
8	15. 18. 30	18	4. 41. 8	21	5. 39. 42 Im.
* 10	9. 47. 31	21	17. 59. 37	* 21	9. 12. 52 E.
12	4. 16. 33	25	7. 18. 11	* 28	9. 42. 32 Im.
13	22. 45. 38	28	20. 36. 50	28	13. 15. 50 E.
15	17. 14. 45				
17	11. 43. 55				
19	6. 13. 6				
21	0. 42. 20				
22	19. 11. 35				
24	13. 40. 53				
* 26	8. 10. 13				
28	2. 39. 34				
29	21. 8. 56				
31	15. 38. 20				
IV. Satellite.					
				6	18. 6. 30 Im.
				6	22. 37. 0 E.
				* 23	12. 18. 17 Im.
				23	16. 51. 30 E.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
♄ MERCURY. Gr. Elong. 14°.							
1	10. 24. 7	6. 50 S	3. 29. 51	4. 18 S	16. 0 N	23. 12	
4	11. 5. 59	6. 35	3. 28. 55	3. 40	16. 49	22. 59	
7	11. 18. 56	5. 53	3. 28. 54	2. 53	17. 34	22. 49	
10	0. 3. 8	4. 46	3. 29. 50	2. 4	18. 10	22. 44	
13	0. 18. 39	3. 13	4. 2. 1	1. 13	18. 33	22. 44	
16	1. 5. 32	1. 16 S	4. 5. 5	0. 25 S	18. 36	22. 48	
19	1. 23. 33	0. 56 N	4. 9. 4	0. 17 N	18. 17	22. 56	
22	2. 12. 18	3. 7	4. 13. 48	0. 51	17. 32	23. 4	
25	3. 1. 13	4. 59	4. 19. 5	1. 18	16. 21	23. 15	
28	3. 19. 37	6. 17	4. 24. 44	1. 35	14. 48	23. 26	
31	4. 6. 58	6. 55	5. 0. 32	1. 45	12. 56	23. 38	
♀ VENUS.							
1	2. 20. 13	0. 19 N	3. 19. 4	0. 9 N	22. 15 N	23. 38	
7	2. 29. 54	0. 53	3. 26. 24	0. 24	21. 17	22. 46	
13	3. 9. 37	1. 25	4. 3. 45	0. 38	19. 57	22. 54	
19	3. 19. 21	1. 55	4. 11. 7	0. 50	18. 16	23. 2	
25	3. 29. 5	2. 22	4. 18. 30	1. 1	16. 16	23. 10	
♂ MARS.							
1	3. 24. 13	1. 41 N	3. 29. 55	1. 3 N	21. 13 N	23. 22	
7	3. 26. 57	1. 44	4. 3. 47	1. 5	20. 22	23. 15	
13	3. 29. 40	1. 45	4. 7. 38	1. 6	19. 27	23. 8	
19	4. 2. 22	1. 47	4. 11. 29	1. 8	18. 27	23. 1	
25	4. 5. 3	1. 48	4. 15. 18	1. 9	17. 22	22. 55	
♃ JUPITER.							
1	10. 3. 7	0. 32 S	10. 1. 38	0. 40 S	20. 28 S	11. 28	
7	10. 3. 38	0. 33	10. 0. 53	0. 41	20. 39	11. 2	
13	10. 4. 10	0. 34	10. 0. 11	0. 41	20. 48	10. 36	
19	10. 4. 41	0. 34	9. 29. 33	0. 42	20. 57	10. 11	
25	10. 5. 12	0. 35	9. 28. 58	0. 42	21. 4	9. 47	
♄ SATURN.							
1	2. 5. 37	1. 49 S	2. 11. 4	1. 43 S	20. 26 N	19. 50	
7	2. 5. 50	1. 48	2. 11. 34	1. 44	20. 29	19. 29	
13	2. 6. 4	1. 48	2. 12. 2	1. 44	20. 32	19. 8	
19	2. 6. 17	1. 47	2. 12. 27	1. 45	20. 35	18. 48	
25	2. 6. 30	1. 47	2. 12. 48	1. 46	20. 37	18. 27	
♄ GEORGIAN. ♂ 26°. 14°.							
1	5. 3. 24	0. 46 N	5. 2. 9	0. 43 N	11. 24 N	1. 31	
11	5. 3. 31	0. 46	5. 2. 45	0. 43	11. 11	0. 55	
21	5. 3. 39	0. 46	5. 3. 22	0. 43	10. 57	0. 20	

		THE MOON'S							
Days of the Week.	Days of the Month.	Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.		S. D. M. S.		D. M. S.		D. M. S.	
Sa.	1	10. 17. 22. 53		10. 24. 6. 35		1 38. 34 S		2. 13. 11 S	
Sun.	2	11. 0. 54. 1		11. 7. 44. 59		2. 46. 13		3. 17. 8	
M.	3	11. 14. 39. 11		11. 21. 36. 16		3. 45. 26		4. 10. 33	
Tu.	4	11. 28. 35. 53		0. 5. 37. 37		4. 32. 6		4. 49. 40	
W.	5	0. 12. 41. 11		0. 19. 46. 3		5. 2. 55		5. 11. 37	
Th.	6	0. 26. 52. 1		1. 3. 58. 34		5. 15. 35		5. 14. 43	
F.	7	1. 11. 5. 30		1. 18. 12. 24		5. 9. 1		4. 58. 37	
Sa.	8	1. 25. 19. 2		2. 2. 25. 2		4. 43. 41		4. 24. 20	
Sun.	9	2. 9. 30. 13		2. 16. 34. 14		4. 1. 1		3. 34. 5	
M.	10	2. 23. 36. 51		3. 0. 37. 47		3. 3. 57		2. 31. 15	
Tu.	11	3. 7. 36. 45		3. 14. 33. 27		1. 56. 23		1. 20. 0	
W.	12	3. 21. 27. 37		3. 28. 18. 57		0. 42. 40 S		0. 4. 58 S	
Th.	13	4. 5. 7. 13		4. 11. 52. 10		0. 32. 28 N		1. 9. 9 N	
F.	14	4. 18. 33. 31		4. 25. 11. 11		1. 44. 29		2. 18. 4	
Sa.	15	5. 1. 44. 54		5. 8. 14. 40		2. 49. 26		3. 18. 15	
Sun.	16	5. 14. 40. 23		5. 21. 2. 5		3. 44. 13		4. 7. 6	
M.	17	5. 27. 19. 51		6. 3. 33. 48		4. 26. 43		4. 42. 56	
Tu.	18	6. 9. 44. 12		6. 15. 51. 16		4. 55. 42		5. 4. 57	
W.	19	6. 21. 55. 23		6. 27. 56. 54		5. 10. 41		5. 12. 57	
Th.	20	7. 3. 56. 17		7. 9. 54. 4		5. 11. 45		5. 7. 12	
F.	21	7. 15. 50. 40		7. 21. 46. 47		4. 59. 23		4. 48. 23	
Sa.	22	7. 27. 42. 52		8. 3. 39. 35		4. 34. 16		4. 17. 11	
Sun.	23	8. 9. 37. 33		8. 15. 37. 21		3. 57. 16		3. 34. 39	
M.	24	8. 21. 39. 34		8. 27. 44. 51		3. 9. 30		2. 42. 0	
Tu.	25	9. 3. 53. 40		9. 10. 6. 37		2. 12. 22		1. 40. 52	
W.	26	9. 16. 24. 7		9. 22. 46. 32		1. 7. 46 N		0. 33. 26 N	
Th.	27	9. 29. 14. 14		10. 5. 47. 24		0. 1. 47 S		0. 37. 26 S	
F.	28	10. 12. 26. 11		10. 19. 10. 37		1. 13. 3		1. 48. 4	
Sa.	29	10. 26. 0. 32		11. 2. 55. 44		2. 22. 0		2. 54. 15	
Sun.	30	11. 9. 55. 46		11. 17. 0. 13		3. 24. 17		3. 51. 28	
M.	31	11. 24. 8. 26		0. 1. 19. 41		4. 15. 13		4. 35. 6	

		THE MOON'S					
Days of the Week.	Days of the Month.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
			H. M.	D. M.	D. M.	D. M.	D. M.
Sa.	1	18	13. 3	320. 21	327. 11	17. 12 S	15. 35 S
Sun.	2	19	13. 55	333. 58	340. 41	13. 45	11. 43
M.	3	20	14. 46	347. 20	353. 57	9. 31	7. 10
Tu.	4	21	15. 36	0. 31	7. 5	4. 44 S	2. 12 S
W.	5	22	16. 27	13. 38	20. 13	0. 22 N	2. 56 N
Th.	6	23	17. 18	26. 50	33. 31	5. 28	7. 54
F.	7	24	18. 11	40. 17	47. 9	10. 16	12. 28
Sa.	8	25	19. 6	54. 9	61. 15	14. 31	16. 21
Sun.	9	26	20. 3	68. 28	75. 47	17. 56	19. 14
M.	10	27	21. 1	83. 12	90. 40	20. 15	20. 56
Tu.	11	28	21. 59	98. 10	105. 39	21. 19	21. 20
W.	12	29	22. 56	113. 5	120. 25	21. 3	20. 25
Th.	13	30	23. 50	127. 37	134. 40	19. 32	18. 21
F.	14	1	0	141. 33	148. 16	16. 56	15. 18
Sa.	15	2	0. 41	154. 48	161. 9	13. 30	11. 33
Sun.	16	3	1. 29	167. 21	173. 24	9. 29	7. 20
M.	17	4	2. 14	179. 20	185. 9	5. 8	2. 54 N
Tu.	18	5	2. 57	190. 53	196. 34	0. 40 N	1. 33 S
W.	19	6	3. 40	202. 12	207. 50	3. 44 S	5. 53
Th.	20	7	4. 23	213. 28	219. 8	7. 57	9. 56
F.	21	8	5. 7	224. 51	230. 38	11. 49	13. 35
Sa.	22	9	5. 52	236. 31	242. 29	15. 13	16. 42
Sun.	23	10	6. 38	248. 35	254. 48	18. 0	19. 8
M.	24	11	7. 26	261. 8	267. 36	20. 3	20. 45
Tu.	25	12	8. 17	274. 10	280. 52	21. 12	21. 24
W.	26	13	9. 10	287. 39	294. 30	21. 20	20. 59
Th.	27	14	10. 3	301. 24	308. 19	20. 22	19. 27
F.	28	15	10. 57	315. 15	322. 11	18. 16	16. 48
Sa.	29	16	11. 51	329. 5	335. 57	15. 5	13. 9
Sun.	30	17	12. 42	342. 47	349. 34	11. 0	8. 41
M.	31	18	13. 35	356. 19	3. 3	6. 14	3. 41

Days of the Week.	Days of the Month.	THE MOON'S				Proportional	
		Semidiameter.		Hor. Parallax.		Logarithm.	
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Sa.	1	15.43	15.47	57.39	57.55	4945	4924
Sun.	2	15.51	15.55	58.10	58.24	4906	4889
M.	3	15.58	16. 1	58.37	58.48	4872	4859
Tu.	4	16. 4	16. 7	58.58	59. 7	4846	4835
W.	5	16. 8	16.10	59.14	59.19	4827	4821
Th.	6	16.11	16.12	59.23	59.26	4816	4812
F.	7	16.12	16.12	59.27	59.27	4811	4811
Sa.	8	16.12	16.11	59.26	59.24	4812	4815
Sun.	9	16.10	16. 9	59.20	59.16	4820	4824
M.	10	16. 7	16. 5	59.10	59. 3	4832	4841
Tu.	11	16. 3	16. 0	58.54	58.43	4852	4865
W.	12	15.57	15.53	58.31	58.18	4880	4896
Th.	13	15.49	15.45	58. 3	57.47	4915	4934
F.	14	15.40	15.35	57.30	57.12	4956	4979
Sa.	15	15.30	15.25	56.53	56.35	5003	5026
Sun.	16	15.20	15.15	56.16	55.58	5050	5073
M.	17	15.10	15. 6	55.41	55.25	5095	5116
Tu.	18	15. 2	14.58	55.10	54.57	5136	5153
W.	19	14.55	14.53	54.45	54.36	5169	5181
Th.	20	14.51	14.49	54.29	54.24	5190	5197
F.	21	14.49	14.49	54.22	54.22	5199	5199
Sa.	22	14.50	14.51	54.25	54.30	5195	5189
Sun.	23	14.53	14.56	54.38	54.48	5178	5165
M.	24	14.59	15. 3	55. 0	55.15	5149	5129
Tu.	25	15. 8	15.13	55.33	55.52	5106	5081
W.	26	15.19	15.25	56.12	56.33	5055	5028
Th.	27	15.31	15.37	56.55	57.18	5000	4971
F.	28	15.43	15.49	57.41	58. 4	4942	4913
Sa.	29	15.55	16. 0	58.25	58.45	4887	4863
Sun.	30	16. 5	16.10	59. 3	59.19	4841	4821
M.	31	16.13	16.16	59.32	59.42	4805	4793

DISTANCES of MOON's Center from SUN, and from STARS EAST of her.

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .		
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.		
α Arietis.	1	77. 54. 30	76. 17. 20	74. 39. 59	73. 2. 29	71. 24. 50	69. 47. 3	68. 9. 10	66. 31. 12									
	2	64. 53. 8	63. 14. 59	61. 36. 47	59. 58. 34	58. 20. 20	56. 42. 6	55. 3. 55	53. 25. 49									
	3	51. 47. 47	50. 9. 51	48. 32. 8	46. 54. 39	45. 17. 24	43. 40. 28	42. 3. 55	40. 27. 46									
	4	38. 52. 3																
Aldebaran.	4	68. 2. 18	66. 17. 18	64. 32. 12	62. 47. 0	61. 1. 42	59. 16. 19	57. 30. 51	55. 45. 19									
	5	53. 59. 42	52. 14. 2	50. 28. 18	48. 42. 30	46. 56. 38	45. 10. 42	43. 24. 44	41. 38. 43									
	6	39. 52. 40	38. 6. 36	36. 20. 30	34. 34. 23	32. 48. 14	31. 2. 3	29. 15. 52	27. 29. 41									
	7	25. 43. 30	23. 57. 20	22. 11. 11	20. 25. 3	18. 38. 56												
	5	120. 6. 47	118. 28. 16	116. 49. 40	115. 11. 0	113. 32. 16	111. 53. 29	110. 14. 38	108. 35. 44									
	6	106. 56. 48	105. 17. 51	103. 38. 52	101. 59. 51	100. 20. 48	98. 41. 43	97. 2. 37	95. 23. 30									
	7	93. 44. 22	92. 5. 13	90. 26. 4	88. 46. 55	87. 7. 47	85. 28. 39	83. 49. 31	82. 10. 23									
The Sun.	8	80. 31. 16	78. 52. 10	77. 13. 6	75. 34. 3	73. 55. 2	72. 16. 2	70. 37. 4	68. 58. 8									
	9	67. 19. 14	65. 40. 24	64. 1. 37	62. 22. 54	60. 44. 14	59. 5. 37	57. 27. 5	55. 48. 37									
	10	54. 10. 14	52. 31. 56	50. 53. 44	49. 15. 37	47. 37. 36	45. 59. 41	44. 21. 54	42. 44. 14									
	11	41. 6. 41	39. 29. 16															
Antares.	16	82. 34. 27	80. 59. 46	79. 25. 23	77. 51. 17	76. 17. 27	74. 43. 54	73. 10. 38	71. 37. 39									
	17	70. 4. 57	68. 32. 31	67. 0. 21	65. 28. 27	63. 56. 50	62. 25. 29	60. 54. 25	59. 23. 36									
	18	57. 53. 4	56. 22. 47	54. 52. 46	53. 23. 1	51. 53. 32	50. 24. 18	48. 55. 19	47. 26. 36									

Stars Names.	Days	Noon.	III ^h .	V ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	19	45. 58. 8	44. 29. 56	43. 2. 0	41. 34. 20	40. 6. 57	38. 39. 51	37. 13. 3	35. 46. 32
	20	34. 20. 19							
α Aquilæ.	20	83. 3. 48	81. 46. 7	80. 28. 35	79. 11. 13	77. 54. 1	76. 37. 0	75. 20. 11	74. 3. 34
	21	72. 47. 8	71. 30. 55	70. 14. 55	68. 59. 9	67. 43. 37	66. 28. 19	65. 13. 17	63. 58. 32
	22	62. 44. 4	61. 29. 54	60. 16. 2	59. 2. 33	57. 49. 27	56. 36. 45	55. 24. 31	54. 12. 45
	23	53. 1. 27							
α Pegasi.	23	99. 1. 35	97. 39. 29	96. 17. 12	94. 54. 43	93. 32. 3	92. 9. 12	90. 46. 19	89. 22. 57
	24	87. 59. 34	86. 36. 0	85. 12. 15	83. 48. 20	82. 24. 15	81. 0. 0	79. 35. 35	78. 11. 1
	25	76. 46. 17	75. 21. 24	73. 56. 22	72. 31. 12	71. 5. 54	69. 40. 25	68. 14. 58	66. 49. 23
	26	65. 23. 42	63. 57. 57	62. 32. 11	61. 6. 25	59. 40. 40	58. 14. 58	56. 49. 20	55. 23. 48
	27	53. 58. 23							
α Arietis.	27	95. 29. 18	93. 54. 33	92. 19. 27	90. 44. 1	89. 8. 14	87. 32. 7	85. 55. 41	84. 18. 56
	28	82. 41. 52	81. 4. 29	79. 26. 48	77. 48. 50	76. 10. 36	74. 32. 5	72. 59. 21	71. 14. 22
	29	69. 35. 10	67. 55. 44	66. 16. 8	64. 36. 22	62. 56. 26	61. 16. 22	59. 36. 12	57. 55. 58
	30	56. 15. 40	54. 35. 21	52. 55. 3	51. 14. 47	49. 34. 32			
Aldebaran.	30	- - -	- - -	- - -	- - -	79. 37. 18	77. 50. 41	76. 3. 52	74. 16. 52
	31	72. 29. 40	70. 42. 19	68. 54. 49	67. 7. 11	65. 19. 24	63. 31. 3c	61. 43. 29	59. 55. 23
	S. I.	58. 7. 10							

DISTANCES of MOON's Center from SUN, and from STARS WEST of her.

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	1	70.24.25	72. 4. 2	73.43.53	75.23.58	77. 4.18	78.44.52	80.25.38	82. 6.37	84.38.38	86.16.47	87.59.21	89.43.41	91.27.21	93.11.35	94.55.10	96.38.43
	2	83.47.50	85.29.15	87.10.51	88.52.39	90.34.38	92.16.47	93.59. 6	95.41.35	97.24.13	99. 6.59	100.49.54	102.32.56	104.16. 5	105.59.21	107.42.43	109.26.10
	3	97.24.13	99. 6.59	100.49.54	102.32.56	104.16. 5	105.59.21	107.42.43	109.26.10	111. 9.43	112.51.18	114.33.43	116.16.18	117.58.43	119.41.18	121.23.43	123.06.18
	4	111. 9.43	112.51.18	114.33.43	116.16.18	117.58.43	119.41.18	121.23.43	123.06.18	124.48.43	126.31.18	128.13.43	129.96.18	130.78.43	132.61.18	134.43.43	136.26.18
α Aquile.	4	66.26.21	67.55.32	69.25. 8	70.55. 9	72.25.33	73.56.18	75.27.21	76.58.41	78.28.43	79.59.21	81.30.58	83.01.35	84.32.10	86.02.45	87.33.20	89.03.55
	5	78.30.17	80. 2. 7	81.34. 7	83. 6.18	84.38.38	86.16.47	87.59.21	89.43.41	91.27.21	93.11.35	94.55.10	96.38.43	98.21.18	100.03.55	101.46.30	103.29.05
	6	90.49. 1	92.21.18	93.52.43	95.23.58	96.55.13	98.26.28	99.57.43	101.28.58	103.00.13	104.31.28	106.02.43	107.33.58	109.05.13	110.36.28	112.07.43	113.38.58
Fomalhaut.	6	56.21.28	57.59.58	59.38.45	61.17.48	62.57. 7	64.36.40	66.16.26	67.56.23	69.35.10	71.14.07	72.53.04	74.31.51	76.10.38	77.49.25	79.28.12	81.06.59
	7	69.36.32	71.16.49	72.57.14	74.37.46	76.18.24	77.59. 6	79.39.52	81.20.41	83.01.35	84.42.25	86.23.18	88. 4.11	89.44.59	91.25.56	93.06.43	94.47.33
	8	83. 1.32	84.42.25	86.23.18	88. 4.11	89.45. 4	91.25.56	93.06.43	94.47.33	96.28.16	98.09.03	99.49.50	101.30.37	103.11.24	104.92.11	106.72.58	108.53.45
α Arietis.	9	96.28.16	98.09.03	99.49.50	101.30.37	103.11.24	104.92.11	106.72.58	108.53.45	110.34.32	112.15.19	113.96.06	115.76.53	117.57.40	119.38.27	121.19.14	123.00.01
	9	37.17. 8	38.53.14	40.29.54	42. 7. 6	43.44.49	45.22.58	47. 1.31	48.40.24	50.19.34	51.58.57	53.38.32	55.18.18	56.58.03	58.37.48	60.17.33	61.57.18
	10	50.19.34	51.58.57	53.38.32	55.18.18	56.58.03	58.37.48	60.17.33	61.57.18	63.36.53	65.16.38	66.96.23	67.76.08	69.55.53	71.35.38	73.15.23	74.95.08
Aldebaran.	11	63.38.41	65.18.27	66.98.12	68.77.57	70.57.42	72.37.27	74.17.12	75.96.57	77.76.42	79.56.27	81.36.12	83.15.57	84.95.42	86.75.27	88.55.12	90.34.57
	11	30.49. 5	32.33.43	34.18.13	36. 2.36	37.46.51	39.30.58	41.14.55	42.58.43	44.42.30	46.26.17	48.10.04	49.53.51	51.37.38	53.21.25	55.05.12	56.48.59
	12	44.42.22	46.26.51	48. 9. 9	49.52.16	51.35.13	53.17.59	55. 0.32	56.42.53	58.25.40	60.08.27	61.51.14	63.34.01	65.16.48	66.99.35	68.82.22	70.65.09
	13	58.25. 2	60.08.27	61.51.14	63.34.01	65.16.48	66.99.35	68.82.22	70.65.09	72.47.56	74.30.43	76.13.30	77.96.17	79.79.04	81.61.51	83.44.38	85.27.25

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	17	-	-	-	-	-	-	-	-	38. 51. 59	40. 17. 19	41. 42. 25	43. 7. 17	41. 42. 25	43. 7. 17	41. 42. 25	43. 7. 17
	18	44. 31. 56	45. 56. 22	47. 20. 36	48. 44. 37	49. 50. 18	50. 50. 18	51. 32. 6	52. 55. 34	50. 8. 27	51. 32. 6	52. 55. 34	54. 18. 51	53. 57. 22	55. 19. 29	54. 18. 51	55. 19. 29
	19	55. 41. 57	57. 4. 53	58. 27. 40	59. 50. 18	60. 47. 0	61. 12. 47	62. 35. 8	63. 57. 22	61. 12. 47	62. 35. 8	63. 57. 22	65. 19. 29	64. 51. 49	66. 13. 20	65. 19. 29	66. 13. 20
	20	66. 41. 30	68. 3. 25	69. 25. 15	70. 47. 0	71. 39. 9	72. 8. 40	73. 30. 16	74. 51. 49	72. 8. 40	73. 30. 16	74. 51. 49	76. 13. 20	75. 43. 30	77. 5. 0	76. 13. 20	77. 5. 0
	21	77. 34. 48	78. 56. 15	80. 17. 42	81. 39. 9	82. 31. 33	83. 0. 35	84. 22. 2	85. 43. 30	83. 0. 35	84. 22. 2	85. 43. 30	87. 5. 0	86. 37. 18	89. 15. 53	87. 5. 0	89. 15. 53
Spica μ .	22	88. 26. 33	89. 48. 9	91. 9. 49	92. 31. 33	93. 53. 22	95. 15. 7	96. 37. 18	97. 59. 26	93. 53. 22	95. 15. 7	96. 37. 18	97. 59. 26	96. 37. 18	98. 10. 42	97. 59. 26	98. 10. 42
	23	99. 21. 41	100. 44. 4	102. 6. 36	103. 29. 17	104. 52. 7	106. 15. 7	107. 38. 18	109. 1. 40	104. 52. 7	106. 15. 7	107. 38. 18	109. 1. 40	108. 51. 12	110. 16. 22	109. 1. 40	110. 16. 22
	24	110. 25. 13	111. 48. 59	113. 12. 58	114. 37. 11	116. 1. 37	117. 26. 17	118. 51. 12	120. 16. 22	116. 1. 37	117. 26. 17	118. 51. 12	120. 16. 22	118. 51. 12	120. 16. 22	120. 16. 22	120. 16. 22
	25	121. 41. 47	122. 41. 47	123. 41. 47	124. 41. 47	125. 41. 47	126. 41. 47	127. 41. 47	128. 41. 47	125. 41. 47	126. 41. 47	127. 41. 47	128. 41. 47	126. 41. 47	127. 41. 47	128. 41. 47	129. 41. 47
	26	37. 17. 28	38. 44. 31	40. 11. 44	41. 39. 8	43. 6. 42	44. 34. 27	46. 2. 23	47. 30. 30	43. 6. 42	44. 34. 27	46. 2. 23	47. 30. 30	46. 2. 23	47. 30. 30	47. 30. 30	47. 30. 30
Antares.	27	48. 58. 48	50. 27. 17	51. 55. 58	53. 24. 51	54. 53. 56	56. 23. 13	57. 52. 43	59. 22. 27	54. 53. 56	56. 23. 13	57. 52. 43	59. 22. 27	57. 52. 43	59. 22. 27	59. 22. 27	59. 22. 27
	28	60. 52. 24	62. 22. 35	63. 53. 1	65. 23. 41	66. 54. 37	68. 25. 48	69. 57. 16	71. 29. 0	66. 54. 37	68. 25. 48	69. 57. 16	71. 29. 0	69. 57. 16	71. 29. 0	71. 29. 0	71. 29. 0
	29	73. 1. 0	74. 31. 16	75. 51. 16	77. 11. 16	78. 31. 16	79. 51. 16	81. 11. 16	82. 31. 16	73. 1. 0	74. 31. 16	75. 51. 16	77. 11. 16	77. 11. 16	78. 31. 16	78. 31. 16	78. 31. 16
	30	27. 47. 51	29. 16. 16	30. 45. 19	32. 14. 59	33. 45. 16	35. 16. 8	36. 47. 33	38. 19. 30	33. 45. 16	35. 16. 8	36. 47. 33	38. 19. 30	36. 47. 33	38. 19. 30	38. 19. 30	38. 19. 30
	31	39. 51. 57	41. 24. 52	42. 58. 15	44. 32. 6	46. 6. 24	47. 41. 9	49. 16. 19	50. 51. 55	46. 6. 24	47. 41. 9	49. 16. 19	50. 51. 55	49. 16. 19	50. 51. 55	50. 51. 55	50. 51. 55
Aquilæ.	22	52. 27. 57	54. 4. 24	55. 41. 15	57. 18. 30	58. 50. 12	60. 34. 12	62. 12. 38	63. 51. 28	58. 50. 12	60. 34. 12	62. 12. 38	63. 51. 28	62. 12. 38	63. 51. 28	63. 51. 28	63. 51. 28
	23	65. 30. 40	67. 10. 15	68. 50. 12	70. 30. 31	72. 11. 11	73. 52. 12	75. 33. 34	77. 15. 16	72. 11. 11	73. 52. 12	75. 33. 34	77. 15. 16	75. 33. 34	77. 15. 16	77. 15. 16	77. 15. 16
	24	78. 57. 18	80. 39. 39	82. 22. 19	84. 5. 17	85. 48. 33	87. 32. 5	89. 15. 53	90. 59. 57	85. 48. 33	87. 32. 5	89. 15. 53	90. 59. 57	89. 15. 53	90. 59. 57	90. 59. 57	90. 59. 57
	25	92. 44. 17	94. 28. 51	96. 13. 39	97. 58. 40	99. 43. 54	101. 29. 19	103. 14. 55	105. 0. 42	99. 43. 54	101. 29. 19	103. 14. 55	105. 0. 42	103. 14. 55	105. 0. 42	105. 0. 42	105. 0. 42
	26	106. 46. 38	108. 31. 16	110. 16. 16	112. 1. 16	113. 46. 38	115. 31. 16	117. 16. 16	119. 1. 16	106. 46. 38	108. 31. 16	110. 16. 16	112. 1. 16	110. 16. 16	112. 1. 16	112. 1. 16	112. 1. 16

CONFIGURATIONS of the SATELLITES of JUPITER
at X o'Clock at *Night*.

1		3.	.2	○	1.	.4
2	1.○		.3	○	.2	.4
3	3.○		1.	○	2.	4.
4		2.		○	.1	.3
5		1.	.2	○		4. 3.
6				○	4. 1. 3.	.2
7	2●		3 4 .1	○		
8		4. 3.	.2	○	1.	
9	4.		.3	○	.2	1.○
10	4.		1.	○	2.	3.○
11	.4		2.	○	.1	.3
12	.4		1.	○		3.
13		.4		○	.1 .2	3.
14			.4 .1	○	2.	
15		3.	.2	○	.4	
16		.3	.1	○	.2	.4
17	1●		.3	○	2.	.4
18		2.		○	.1	.3
19		.1.		○		.3
20				○	.1 .2	3.
21		.1	3.	○	2.	4.
22		3.	2.	○	1.	4.
23	2.○ 4●		.3	○	.1	
24		4.	.3	○	1.	2.
25	4.		2.	○	.3	1.○
26	4.		.2	○		.3
27	4.			○	.1 .2	3.
28	.4		1.	○	2.	3●
29		.4	3. 2.	○	1.	
30		.3 .4	.1 .2	○		
31		.3	.4	○	1.	2.

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			☾ Last Quarter	5. 11. 57
			● New Moon	12. 18. 46
			☽ First Quarter	20. 21. 39
			☾ Full Moon	28. 4. 25
			Other Phenomena.	
			D. H. M.	
Tu.	1	Giles.	2. 19. 4	☽ 2 ad ☿ Ceti.
W.	2	London burnt, 1666, O.S.	3. 2. 28	☽ μ Ceti.
Th.	3		4. 20. 11	☽ 1 ad ☿ 8
F.	4		20. 37	☽ 2 ad ☿ 8
Sa.	5		6. 2. 44	☽ ζ 8
Sun.	6	14th Sunday after Trinity.	23. 33	☽ ν Π
M.	7	Enurhus.	7. 12. 25 $\frac{1}{2}$ I.	γ Π * $10\frac{3}{4}$ N. of ☽'s C.
Tu.	8	Nativity of B. V. Mary.	13. 10	E. γ Π * $5\frac{1}{4}$
W.	9		20. 8	☽ δ Π
Th.	10		9. 8. 13	☽ δ Θ
F.	11		10. 21. 3	☽ δ
Sa.	12		12 - - -	δ α Ω diff. Lat. 44'.
			17. 20. 52	☽ γ $\approx$
Sun.	13	15th Sunday after Trinity.	18. 1. 24	☽ η $\approx$
M.	14	Holy Crois.	6. 14 $\frac{2}{3}$ I.	θ $\approx$ * $4\frac{1}{3}$ S. of ☽'s C.
Tu.	15		7. 29 $\frac{1}{4}$ E.	θ $\approx$ * 3
W.	16		20. 1. 1	☽ ρ Ophiuchi.
Th.	17	Lambert.	21. 1. 41	☽ 1 ad μ $\dagger$
F.	18		22. 0. 51	☽ $\circ$ $\dagger$
Sa.	19		3. 18	☽ π $\dagger$
			14. 32	☉ enters $\approx$
Sun.	20	16th Sunday after Trinity.	23. - - 24	Stationary.
M.	21	St. Matthew.	6. 4 I.	24. 24 $\frac{1}{3}$ N. of ☽'s C.
Tu.	22	K. Geo. III. crowned, 1761	6. 35 $\frac{3}{4}$ E.	24. 21. 33
W.	23			☽ γ ν
Th.	24		25 - - -	Stationary.
F.	25		0. 41	☽ δ ν
Sa.	26	St. Cyprian.	9. 49	☽ ι $\approx$
			26. 15. 59	☽ 1 ad $\downarrow$ $\approx$
Sun.	27	17th Sunday after Trinity.	16. 43	☽ 2 ad $\downarrow$ $\approx$
M.	28		16. 51	☽ 3 ad $\downarrow$ $\approx$
Tu.	29	St. Michael. Prs. Royal b.	27. 13. 3	☽ 33 $\times$
W.	30	St. Jerome.	30. 3. 17	☽ 2 ad ξ Ceti.
			9. 39 $\frac{1}{2}$ I.	μ Cc. * $12\frac{1}{4}$ N. of ☽'s C.
			10. 22 $\frac{1}{4}$ E.	μ Cc. * $10\frac{1}{4}$

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time.	Diff.
		Longitude.	R ^t . Ascen. <i>in Time.</i>	Declin. <i>North</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Tu.	1	5. 8. 56. 28	10. 42. 11, 2	8. 13. 33	0. 15, 5	18, 9
W.	2	5. 9. 54. 36	10. 45. 48, 8	7. 51. 40	0. 34, 4	19, 2
Th.	3	5. 10. 52. 47	10. 49. 26, 1	7. 29. 39	0. 53, 6	19, 4
F.	4	5. 11. 50. 59	10. 53. 3, 2	7. 7. 31	1. 13, 0	19, 7
Sa.	5	5. 12. 49. 13	10. 56. 39, 9	6. 45. 15	1. 32, 7	19, 8
Sun.	6	5. 13. 47. 29	11. 0. 16, 7	6. 22. 53	1. 52, 5	20, 1
M.	7	5. 14. 45. 48	11. 3. 53, 1	6. 0. 24	2. 12, 6	20, 2
Tu.	8	5. 15. 44. 9	11. 7. 29, 4	5. 37. 49	2. 32, 8	20, 3
W.	9	5. 16. 42. 31	11. 11. 5, 6	5. 15. 9	2. 53, 1	20, 5
Th.	10	5. 17. 40. 56	11. 14. 41, 6	4. 52. 22	3. 13, 6	20, 6
F.	11	5. 18. 39. 23	11. 18. 17, 5	4. 29. 31	3. 34, 2	20, 6
Sa.	12	5. 19. 37. 52	11. 21. 53, 4	4. 6. 35	3. 54, 8	20, 8
Sun.	13	5. 20. 36. 24	11. 25. 29, 1	3. 43. 34	4. 15, 6	20, 9
M.	14	5. 21. 34. 56	11. 29. 4, 7	3. 20. 30	4. 36, 5	20, 9
Tu.	15	5. 22. 33. 31	11. 32. 40, 3	2. 57. 22	4. 57, 4	20, 9
W.	16	5. 23. 32. 8	11. 36. 15, 9	2. 34. 10	5. 18, 3	21, 0
Th.	17	5. 24. 30. 46	11. 39. 51, 4	2. 10. 56	5. 39, 3	20, 9
F.	18	5. 25. 29. 27	11. 43. 27, 0	1. 47. 38	6. 0, 2	21, 0
Sa.	19	5. 26. 28. 8	11. 47. 2, 5	1. 24. 19	6. 21, 2	20, 0
Sun.	20	5. 27. 26. 52	11. 50. 38, 1	1. 0. 57	6. 42, 1	20, 9
M.	21	5. 28. 25. 37	11. 54. 13, 7	0. 37. 35	7. 3, 0	20, 8
Tu.	22	5. 29. 24. 24	11. 57. 49, 4	0. 14. 11 <i>South.</i>	7. 23, 8	20, 7
W.	23	6. 0. 23. 12	12. 1. 25, 1	0. 9. 14	7. 44, 5	20, 6
Th.	24	6. 1. 22. 2	12. 5. 1, 0	0. 32. 40	8. 5, 1	20, 5
F.	25	6. 2. 20. 54	12. 8. 37, 1	0. 56. 6	8. 25, 6	20, 3
Sa.	26	6. 3. 19. 48	12. 12. 13, 2	1. 19. 31	8. 45, 9	20, 2
Sun.	27	6. 4. 18. 43	12. 15. 49, 6	1. 42. 56	9. 6, 1	19, 9
M.	28	6. 5. 17. 41	12. 19. 26, 2	2. 6. 21	9. 26, 0	19, 7
Tu.	29	6. 6. 16. 40	12. 23. 3, 0	2. 29. 44	9. 45, 7	19, 4
W.	30	6. 7. 15. 42	12. 26. 40, 1	2. 53. 6	10. 5, 1	

III. SEPTEMBER 1795. 99

Days	Time of ☉'s pass ^g Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 4. 3	15. 54. 8	2. 25. 3	0. 003582	3. 27. 2
7	1. 4. 1	15. 56. 3	2. 25. 7	0. 002941	3. 26. 43
13	1. 4. 0	15. 57. 9	2. 26. 2	0. 002159	3. 26. 24
19	1. 4. 0	15. 59. 4	2. 26. 7	0. 001529	3. 26. 5
25	1. 4. 1	16. 1. 1	2. 27. 3	0. 000770	3. 25. 46

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
* 2	10. 7. 46	* 1	9. 55. 37	4	13. 45. 51 Im.
4	4. 37. 10	4	23. 14. 20	4	17. 19. 17 E.
5	23. 6. 40	8	12. 33. 15	11	17. 49. 27 Im.
7	17. 36. 8	12	1. 52. 13	11	21. 23. 1 E.
9	12. 5. 38	15	15. 11. 10	18	21. 53. 14 Im.
11	6. 35. 11	19	4. 30. 7	19	1. 26. 57 E.
13	1. 4. 40	22	17. 49. 3	26	1. 57. 2 Im.
14	19. 34. 14	* 26	7. 8. 1	26	5. 30. 50 E.
16	14. 3. 44	29	20. 26. 56		
* 18	8. 33. 15				
20	3. 2. 50				
21	21. 32. 21				
23	16. 1. 57				
* 25	10. 31. 26				
27	5. 1. 1				
28	23. 30. 31				
30	17. 59. 58				
				IV. Satellite.	
				9	6. 33. 4 Im.
				* 9	11. 8. 42 E.
				26	0. 49. 20 Im.
				26	5. 27. 14 E.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.		D. M.	H. M.
♿ MERCURY. Sup. ☿ 7 ^h . 19 ^h ₂ .							
1	4. 12. 27	6. 59 N	5. 2. 28	1. 46 N	12. 16 N	23. 42	
4	4. 27. 57	6. 51	5. 8. 18	1. 46	10. 7	23. 53	
7	5. 12. 2	6. 17	5. 14. 2	1. 41	7. 51	0. 0	
10	5. 24. 48	5. 28	5. 19. 38	1. 30	5. 30	0. 9	
13	6. 6. 28	4. 28	5. 25. 6	1. 17	3. 8	0. 19	
16	6. 17. 11	3. 22	6. 0. 24	1. 0	0. 46 N	0. 27	
19	6. 27. 9	2. 16	6. 5. 33	0. 42	1. 34 S	0. 34	
22	7. 6. 32	1. 9	6. 10. 33	0. 22	3. 50	0. 41	
25	7. 15. 27	0. 3 N	6. 15. 24	0. 1 N	6. 3	0. 48	
28	7. 24. 3	1. 0 S	6. 20. 8	0. 20 S	8. 12	0. 54	
30	7. 29. 39	1. 40	6. 23. 12	0. 35	9. 34	0. 58	
♀ VENUS. ☿							
1	4. 10. 27	2. 48 N	4. 27. 9	1. 12 N	13. 36 N	23. 18	
7	4. 20. 13	3. 5	5. 4. 35	1. 19	11. 4	23. 25	
13	4. 29. 58	3. 17	5. 12. 2	1. 23	8. 20	23. 31	
19	5. 9. 43	3. 23	5. 19. 30	1. 25	5. 28	23. 38	
25	5. 19. 28	3. 23	5. 26. 58	1. 25	2. 30	23. 43	
♂ MARS. ☿							
1	4. 8. 10	1. 49 N	4. 19. 46	1. 10 N	16. 1 N	22. 47	
7	4. 10. 50	1. 50	4. 23. 33	1. 11	14. 49	22. 40	
13	4. 13. 29	1. 51	4. 27. 21	1. 12	13. 33	22. 33	
19	4. 16. 8	1. 51	5. 1. 8	1. 13	12. 13	22. 26	
25	4. 18. 46	1. 51	5. 4. 55	1. 14	10. 52	22. 19	
♃ JUPITER. ☿							
1	10. 5. 48	0. 36 S	9. 28. 24	0. 42 S	21. 12 S	9. 19	
7	10. 6. 20	0. 36	9. 28. 3	0. 42	21. 16	8. 56	
13	10. 6. 51	0. 37	9. 27. 47	0. 42	21. 20	8. 33	
19	10. 7. 22	0. 37	9. 27. 38	0. 42	21. 21	8. 11	
25	10. 7. 54	0. 38	9. 27. 37	0. 42	21. 21	7. 50	
♄ SATURN. ☿ □ 5 ^h . 12 ^h ₁ .							
1	2. 6. 46	1. 47 S	2. 13. 9	1. 46 S	20. 39 N	18. 3	
7	2. 6. 59	1. 46	2. 13. 23	1. 47	20. 40	17. 42	
13	2. 7. 13	1. 46	2. 13. 33	1. 48	20. 40	17. 21	
19	2. 7. 26	1. 45	2. 13. 39	1. 49	20. 40	17. 1	
25	2. 7. 39	1. 45	2. 13. 41	1. 49	20. 40	16. 39	
♅ GEORGIAN. ☿							
1	5. 3. 48	0. 40 N	5. 4. 4	0. 43 N	10. 42 N	23. 39	
11	5. 3. 56	0. 46	5. 4. 41	0. 43	10. 28	23. 5	
21	5. 4. 3	0. 46	5. 5. 18	0. 43	10. 15	22. 32	

Days of the Week.	Days of the Month.	THE MOON'S							
		Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.	S. D. M. S.	S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Tu.	1	0. 8. 33. 16	0. 15. 48. 19	4. 50. 41 S	5. 1. 40 S				
W.	2	0. 23. 4. 10	1. 0. 19. 56	5. 7. 50	5. 9. 1				
Th.	3	1. 7. 34. 56	1. 14. 48. 34	5. 5. 17	4. 56. 42				
F.	4	1. 22. 0. 15	1. 29. 9. 37	4. 43. 28	4. 25. 51				
Sa.	5	2. 6. 16. 15	2. 13. 20. 0	4. 4. 14	3. 39. 3				
Sun.	6	2. 20. 20. 38	2. 27. 18. 8	3. 10. 43	2. 39. 45				
M.	7	3. 4. 12. 25	3. 11. 3. 32	2. 6. 43	1. 32. 4				
Tu.	8	3. 17. 51. 30	3. 24. 36. 25	0. 56. 25 S	0. 20. 14 S				
W.	9	4. 1. 18. 16	4. 7. 57. 13	0. 15. 54 N	0. 51. 33 N				
Th.	10	4. 14. 33. 13	4. 21. 6. 18	1. 26. 11	1. 59. 22				
F.	11	4. 27. 36. 31	5. 4. 3. 49	2. 30. 42	2. 59. 49				
Sa.	12	5. 10. 28. 12	5. 16. 49. 40	3. 26. 23	3. 50. 8				
Sun.	13	5. 23. 8. 10	5. 29. 23. 44	4. 10. 49	4. 28. 19				
M.	14	6. 5. 36. 22	6. 11. 46. 10	4. 42. 27	4. 53. 9				
Tu.	15	6. 17. 53. 12	6. 23. 57. 37	5. 0. 24	5. 4. 10				
W.	16	6. 29. 59. 36	7. 5. 59. 28	5. 4. 31	5. 1. 29				
Th.	17	7. 11. 57. 29	7. 17. 54. 2	4. 55. 11	4. 45. 41				
F.	18	7. 23. 49. 35	7. 29. 44. 31	4. 33. 9	4. 17. 41				
Sa.	19	8. 5. 39. 26	8. 11. 34. 53	3. 59. 28	3. 38. 37				
Sun.	20	8. 17. 31. 28	8. 23. 29. 47	3. 15. 20	2. 49. 48				
M.	21	8. 29. 30. 30	9. 5. 34. 17	2. 22. 13	1. 52. 47				
Tu.	22	9. 11. 41. 48	9. 17. 53. 37	1. 21. 45	0. 49. 25 N				
W.	23	9. 24. 10. 26	10. 0. 32. 46	0. 16. 3 N	0. 17. 57 S				
Th.	24	10. 7. 1. 10	10. 13. 36. 1	0. 52. 15 S	1. 26. 22				
F.	25	10. 20. 17. 36	10. 27. 6. 6	1. 59. 52	2. 32. 10				
Sa.	26	11. 4. 1. 30	11. 11. 3. 41	3. 2. 45	3. 31. 2				
Sun.	27	11. 18. 12. 12	11. 25. 26. 32	3. 56. 23	4. 18. 17				
M.	28	0. 2. 45. 54	0. 10. 9. 22	4. 36. 11	4. 49. 36				
Tu.	29	0. 17. 35. 53	0. 25. 4. 19	4. 58. 14	5. 1. 48				
W.	30	1. 2. 33. 25	1. 10. 2. 3	5. 0. 13	4. 53. 29				

THE MOON'S							
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
			D.	H. M.	D. M.	D. M.	D. M.
Tu.	1	19	14. 27	9. 46	16. 30	1. 3 S	1. 35 N
W.	2	20	15. 20	23. 15	30. 3	4. 12 N	6. 46
Th.	3	21	16. 14	36. 54	43. 50	9. 14	11. 34
F.	4	22	17. 8	50. 50	57. 56	13. 43	15. 40
Sa.	5	23	18. 5	65. 8	72. 24	17. 22	18. 48
Sun.	6	24	19. 3	79. 44	87. 7	19. 57	20. 47
M.	7	25	20. 0	94. 31	101. 53	21. 17	21. 28
Tu.	8	26	20. 56	109. 13	116. 28	21. 20	20. 53
W.	9	27	21. 51	123. 36	130. 37	20. 9	19. 8
Th.	10	28	22. 42	137. 28	144. 10	17. 52	16. 22
F.	11	29	23. 30	150. 42	157. 4	14. 40	12. 49
Sa.	12	1	0	163. 18	169. 24	10. 59	8. 44
Sun.	13	2	0. 16	175. 22	181. 14	6. 34	4. 20 N
M.	14	3	1. 1	187. 1	192. 44	2. 5 N	0. 10 S
Tu.	15	4	1. 44	198. 24	204. 3	2. 24 S	4. 35
W.	16	5	2. 27	209. 42	215. 21	6. 44	8. 47
Th.	17	6	3. 10	221. 3	226. 48	10. 45	12. 36
F.	18	7	3. 54	232. 36	238. 30	14. 20	15. 55
Sa.	19	8	4. 40	244. 29	250. 34	17. 20	18. 35
Sun.	20	9	5. 27	256. 46	263. 4	19. 38	20. 29
M.	21	10	6. 16	269. 28	275. 58	21. 6	21. 28
Tu.	22	11	7. 7	282. 35	289. 16	21. 35	21. 27
W.	23	12	8. 0	296. 1	302. 49	21. 2	20. 21
Th.	24	13	8. 52	309. 39	316. 30	19. 23	18. 8
F.	25	14	9. 46	323. 22	330. 13	16. 38	14. 53
Sa.	26	15	10. 39	337. 3	343. 53	12. 53	10. 41
Sun.	27	16	11. 32	350. 43	357. 32	8. 18	5. 46
M.	28	17	12. 25	4. 22	11. 14	3. 7 S	0. 25 S
Tu.	29	18	13. 18	18. 7	25. 4	2. 19 N	5. 2 N
W.	30	19	14. 13	32. 5	39. 11	7. 40	10. 11

VII. SEPTEMBER 1795. 103

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Tu.	1	16. 18	16. 20	59. 50	59. 55	4783	4777
W.	2	16. 20	16. 20	59. 57	59. 57	4775	4775
Th.	3	16. 19	16. 18	59. 54	59. 49	4778	4784
F.	4	16. 16	16. 14	59. 43	59. 35	4792	4801
Sa.	5	16. 11	16. 8	59. 25	59. 14	4813	4827
Sun.	6	16. 5	16. 2	59. 3	58. 51	4841	4855
M.	7	15. 59	15. 55	58. 38	58. 25	4871	4887
Tu.	8	15. 51	15. 47	58. 11	57. 57	4905	4922
W.	9	15. 43	15. 39	57. 42	57. 27	4941	4960
Th.	10	15. 35	15. 31	57. 12	56. 57	4979	4998
F.	11	15. 27	15. 23	56. 42	56. 26	5017	5037
Sa.	12	15. 18	15. 14	56. 11	55. 56	5056	5076
Sun.	13	15. 11	15. 7	55. 42	55. 28	5094	5112
M.	14	15. 3	15. 0	55. 14	55. 2	5130	5146
Tu.	15	14. 57	14. 54	54. 51	54. 40	5161	5175
W.	16	14. 52	14. 50	54. 32	54. 25	5186	5195
Th.	17	14. 48	14. 47	54. 20	54. 16	5202	5207
F.	18	14. 47	14. 47	54. 15	54. 16	5209	5207
Sa.	19	14. 48	14. 50	54. 20	54. 26	5202	5194
Sun.	20	14. 52	14. 55	54. 35	54. 46	5182	5167
M.	21	14. 59	15. 3	54. 59	55. 15	5150	5129
Tu.	22	15. 8	15. 14	55. 33	55. 54	5106	5079
W.	23	15. 20	15. 27	56. 17	56. 41	5049	5018
Th.	24	15. 34	15. 41	57. 7	57. 34	4985	4951
F.	25	15. 48	15. 56	58. 1	58. 27	4917	4885
Sa.	26	16. 3	16. 10	58. 53	59. 18	4853	4822
Sun.	27	16. 16	16. 21	59. 41	60. 1	4794	4770
M.	28	16. 26	16. 30	60. 18	60. 32	4750	4733
Tu.	29	16. 32	16. 34	60. 41	60. 46	4722	4716
W.	30	16. 34	16. 34	60. 48	60. 47	4714	4715

DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
Fomalhaut.	1	39.54.0	41.29.0	43.4.50	44.41.29	46.18.52	47.56.56	49.35.33	51.14.42								
	2	52.54.21	54.34.21	56.14.39	57.55.17	59.36.13	61.17.20	62.58.37	64.40.4								
	3	66.21.41	68.3.23	69.45.9	71.26.59	73.8.52	74.50.44	76.32.35	78.14.24								
	4	79.56.12	81.37.57	83.19.36	85.1.10	86.42.39	88.24.0	90.5.13	91.46.16								
	5	93.27.10															
α Arietis.	5	34.20.26	35.55.11	37.30.35	39.6.34	40.43.3	42.20.3	43.57.21	45.35.1								
	6	47.13.2	48.51.12	50.29.30	52.7.57	53.46.33	55.25.15	57.3.54	58.42.34								
	7	60.21.16															
Aldebaran.	7	27.25.5	29.8.18	30.51.21	32.34.14	34.16.57	35.59.29	37.41.51	39.24.2								
	8	41.6.2	42.47.52	44.29.31	46.10.59	47.52.16	49.33.21	51.14.15	52.54.59								
	9	54.35.31	56.15.53	57.56.4	59.36.4	61.15.52	62.55.28	64.34.53	66.14.6								
	10	67.53.8	69.31.58	71.10.36	72.49.2	74.27.17	76.5.20	77.43.11	79.20.51								
	11	80.58.19															
The Sun.	16	-	-	39.29.21	40.51.3	42.12.40	43.34.12	44.55.39	46.17.1								
	17	47.38.19	48.59.33	50.20.43	51.41.50	53.2.54	54.23.55	55.44.55	57.5.53								
	18	58.26.49	59.47.44	61.8.39	62.29.34	63.50.29	65.11.26	66.32.24	67.53.25								
	19	69.14.28	70.35.34	71.56.44	73.17.59	74.39.18	76.0.42	77.22.13	78.43.50								

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Stars Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVII ^h .	XX ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	20	80. 5. 34	81. 27. 26	82. 49. 26	84. 11. 35	85. 33. 53	86. 56. 20	88. 18. 59	89. 41. 49
	21	91. 4. 50	92. 28. 3	93. 51. 30	95. 15. 10	96. 39. 4	98. 3. 13	99. 27. 36	100. 52. 16
	22	102. 17. 11	103. 42. 22	105. 7. 51	106. 33. 38	107. 59. 42	109. 26. 6	110. 52. 49	112. 19. 51
	23	113. 47. 13	115. 14. 55	116. 42. 58	118. 11. 22	119. 40. 7			
	24	123. 37. 6	125. 2. 5	126. 27. 41	127. 54. 6	129. 21. 12	130. 48. 55	132. 17. 14	133. 46. 6
Antares.	25	35. 15. 33	36. 45. 27	38. 15. 48	39. 46. 40	41. 18. 0	42. 49. 47	44. 21. 59	45. 54. 40
	26	47. 27. 47	49. 1. 20	50. 35. 19	52. 9. 45	53. 44. 37	55. 19. 55	56. 55. 40	58. 31. 51
	27	60. 8. 28	61. 45. 32	63. 23. 1	65. 0. 58	66. 39. 20	68. 18. 9	69. 57. 23	71. 37. 4
	28	73. 17. 11	74. 57. 45	76. 38. 43	78. 20. 8	80. 1. 58	81. 44. 13	83. 26. 54	85. 9. 58
	29	86. 53. 28	88. 37. 21	90. 21. 37	92. 6. 17	93. 51. 21	95. 36. 45	97. 22. 29	99. 8. 34
α Aquilæ.	30	100. 55. 0	102. 41. 45	104. 28. 48	106. 16. 9	108. 3. 49			
	31	69. 54. 57	71. 29. 8	73. 3. 47	74. 38. 53	76. 14. 28	77. 50. 25	79. 26. 39	81. 3. 12
	32	82. 40. 1	84. 17. 3	85. 54. 13	87. 31. 28	89. 8. 53			
Fomalhaut.	33	61. 43. 16	63. 27. 56	65. 12. 46	66. 57. 45	68. 42. 53	70. 28. 7	72. 13. 21	73. 58. 35
	34	75. 43. 53							

CONFIGURATIONS of the SATELLITES of JUPITER
at IX o'Clock in the *Evening*.

1	2●			.1 ○		.3.4
2	1●		.2	○		.3.4
3				○	.2.3	.4
4			1.	○	3. 2.	.4
5			3. 2.	○	.1	4.
6		.3	.1.2	○		4.
7			.3	○	1. .2	4.
8	2●			.1 ○	.3 4.	
9	1●		.2 4.	○		.3
10		4.		○	.1 .2	3.
11		4.		1. ○	3. 2.	
12		4.	3. 2.	○	.1	
13	.4		3. .2	○		
14	.4		.3	○	1. .2	
15		.4	.1	○	3. .3	
16			2 6 4	○	1.	.3
17	1.○ 4.○			○	.2	3.
18			1.	○	3. 2. .4	
19			3. 2.	○	.1	.4
20		3.	.2 1.	○		.4
21		.3		○	1. .2	.4
22	3.○		.1	○	2.	4.
23		2.		○	1. .3	4.
24	2.○			.1 ○		3 6 4
25	1●			○	4. 2 6 3	
26			2 6 3 4	○	.1	
27		4. 3.	.2 1.	○		
28		4.	.3	○	.1.2	
29	4.		.1 .3	○	2.	
30	.4		2.	○	1.	.3

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			☾ Last Quarter	4. 19. 15
			● New Moon	12. 10. 21
			☽ First Quarter	20. 15. 11
			○ Full Moon	27. 13. 53
			Other Phenomena.	
			D. H. M.	
Th.	1	Remigius.	2. 2. 54	☽ 1 ad ☽ 8
F.	2		3. 20	☽ 2 ad ☽ 8
Sa.	3		3. 8. 45	☽ 3 8
			23. 28	☽ 4 11
Sun.	4	18th Sunday after Trinity.	4. 2. 40	☽ 5 11
M.	5		19. 30	☽ 6 11
Tu.	6	Faith.	5. - -	☽ 7 11 diff. Lat. 5°.
W.	7		1. 41	☽ 8 11
Th.	8		6. 12. 5	I. ☽ 9 11 * 5 1/2 S. of ☽'s C.
F.	9	St. Denys.	12. 50 1/2 E.	
Sa.	10	Oxford & Camb. T. beg.	12. - -	☽ 10 11 diff. Lat. 26°.
			15. 3. 57	☽ 11 11
Sun.	11	19th Sunday after Trinity.	8. 29	☽ 12 11
M.	12		13. 33	☽ 13 11
Tu.	13	Transl. of K. Edw. Conf.	17. 8. 15	☽ 14 11 ☽ Ophiuchi.
W.	14			☽ 15 11 ad ☽ 11 diff. Lat. 41°.
Th.	15		9. 11	☽ 16 11 ad ☽ 11
F.	16		19. 8. 43	☽ 17 11
Sa.	17	Etheldred.	11. 14	☽ 18 11
			20. 17. 23	☽ 19 11
Sun.	18	20th Sunday after Trinity.	22. 7. 7	☽ 20 11
M.	19	[St. Luke.	10. 20	☽ 21 11
Tu.	20		19. 43	☽ 22 11
W.	21		22. 34	☽ 23 11 ☽ enters 11
Th.	22		24. 2. 33	☽ 24 11 ad ☽ 11
F.	23		3. 18	☽ 25 11 ad ☽ 11
Sa.	24		3. 25	☽ 26 11 ad ☽ 11
		[Access. Crispin.	25. - -	☽ 27 11 ad ☽ 11 diff. Lat. 35°.
Sun.	25	21st Su. aft. T. K. Geo. III.	27. 13. 50	☽ 28 11 ad ☽ 11 Ceti.
M.	26	K. Geo. III. procl. 1760.	20. 51	☽ 29 11 Ceti.
Tu.	27		29. - -	☽ 30 11 ad ☽ 11 diff. Lat. 56°.
W.	28	St. Simon and St. Jude.	12. 9	☽ 31 11 ad ☽ 11
Th.	29		12. 33	☽ 32 11 ad ☽ 11
F.	30		14. 41	☽ 33 11
Sa.	31		30. 16. 57	☽ 34 11
			31. 7. 11	☽ 35 11
			10. 15	☽ 36 11

Days of the Week.	Days of the Month.	THE S U N ' s			Equation of Time. Sub.	Diff.
		Longitude.	Rt. Ascen. in Time.	Declin. South.		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Th.	1	6. 8. 14. 46	12. 30. 17, 4	3. 16. 25	10. 24, 3	18, 8
F.	2	6. 9. 13. 52	12. 33. 55, 0	3. 39. 44	10. 43, 1	18, 5
Sa.	3	6. 10. 13. 0	12. 37. 33, 0	4. 3. 0	11. 1, 6	18, 2
Sun.	4	6. 11. 12. 11	12. 41. 11, 4	4. 26. 13	11. 19, 8	17, 8
M.	5	6. 12. 11. 24	12. 44. 50, 1	4. 49. 23	11. 37, 6	17, 4
Tu.	6	6. 13. 10. 40	12. 48. 29, 2	5. 12. 29	11. 55, 0	17, 0
W.	7	6. 14. 9. 58	12. 52. 8, 7	5. 35. 32	12. 12, 0	16, 5
Th.	8	6. 15. 9. 19	12. 55. 48, 7	5. 58. 31	12. 28, 5	16, 1
F.	9	6. 16. 8. 42	12. 59. 29, 2	6. 21. 25	12. 44, 6	15, 6
Sa.	10	6. 17. 8. 7	13. 3. 10, 1	6. 44. 14	13. 0, 2	15, 1
Sun.	11	6. 18. 7. 34	13. 6. 51, 4	7. 6. 57	13. 15, 3	14, 6
M.	12	6. 19. 7. 4	13. 10. 33, 3	7. 29. 35	13. 29, 9	14, 1
Tu.	13	6. 20. 6. 36	13. 14. 15, 8	7. 52. 7	13. 44, 0	13, 6
W.	14	6. 21. 6. 10	13. 17. 58, 7	8. 14. 33	13. 57, 6	13, 0
Th.	15	6. 22. 5. 46	13. 21. 42, 2	8. 36. 51	14. 10, 6	12, 5
F.	16	6. 23. 5. 24	13. 25. 26, 2	8. 59. 2	14. 23, 1	11, 9
Sa.	17	6. 24. 5. 3	13. 29. 10, 8	9. 21. 5	14. 35, 0	11, 4
Sun.	18	6. 25. 4. 44	13. 32. 56, 0	9. 43. 0	14. 46, 4	10, 8
M.	19	6. 26. 4. 27	13. 36. 41, 8	10. 4. 46	14. 57, 2	10, 1
Tu.	20	6. 27. 4. 12	13. 40. 28, 2	10. 26. 23	15. 7, 3	9, 5
W.	21	6. 28. 3. 58	13. 44. 15, 2	10. 47. 51	15. 16, 8	8, 9
Th.	22	6. 29. 3. 46	13. 48. 2, 9	11. 9. 9	15. 25, 7	8, 2
F.	23	7. 0. 3. 36	13. 51. 51, 2	11. 30. 17	15. 33, 9	7, 5
Sa.	24	7. 1. 3. 27	13. 55. 40, 2	11. 51. 15	15. 41, 4	6, 8
Sun.	25	7. 2. 3. 20	13. 59. 29, 9	12. 12. 2	15. 48, 2	6, 1
M.	26	7. 3. 3. 15	14. 3. 20, 3	12. 32. 37	15. 54, 3	5, 4
Tu.	27	7. 4. 3. 11	14. 7. 11, 4	12. 53. 0	15. 59, 7	4, 7
W.	28	7. 5. 3. 10	14. 11. 3, 3	13. 13. 11	16. 4, 4	3, 9
Th.	29	7. 6. 3. 11	14. 14. 56, 0	13. 33. 10	16. 8, 3	3, 1
F.	30	7. 7. 3. 13	14. 18. 49, 5	13. 52. 56	16. 11, 4	2, 3
Sa.	31	7. 8. 3. 17	14. 22. 43, 7	14. 12. 29	16. 13, 7	

Days	Time of ☉'s Semidiam. pass ^g Merid.	THE SUN'S			Place of the ☿'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 4. 3	16. 2. 7	2. 27. 8	0.000021	3. 25. 27
7	1. 4. 6	16. 4. 4	2. 28. 4	9. 999290	3. 25. 8
13	1. 5. 0	16. 6. 0	2. 28. 9	9. 998556	3. 24. 49
19	1. 5. 5	16. 7. 6	2. 29. 2	9. 997806	3. 24. 30
25	1. 6. 1	16. 9. 3	2. 29. 7	9. 997078	3. 24. 11

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	12. 29. 30	* 3	9. 45. 47	3	6. 0. 44 Im.
* 4	6. 58. 58	6	23. 4. 29	* 3	9. 34. 36 E.
6	1. 28. 27	10	12. 23. 8	10	10. 4. 6 Im.
7	19. 57. 54	14	1. 41. 45	10	13. 37. 59 E.
9	14. 27. 22	17	15. 0. 16	17	14. 7. 11 Im.
* 11	8. 56. 46	21	4. 18. 40	17	17. 41. 7 E.
13	3. 26. 9	24	17. 36. 57	24	18. 9. 48 Im.
14	21. 55. 30	* 28	6. 55. 5	24	21. 43. 47 E.
16	16. 24. 50	31	20. 13. 6	31	22. 11. 52 Im.
18	10. 54. 6				
20	5. 23. 23				
21	23. 52. 36				
23	18. 21. 48				
25	12. 50. 56				
* 27	7. 20. 4				
29	1. 49. 8				
30	20. 18. 12				
				IV. Satellite.	
				12	19. 4. 59 Im.
				12	23. 44. 47 E.
				29	13. 18. 48 Im.
				29	18. 0. 8 E.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage	
	Long.	Lat.	Long.	Lat.		Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.		D. M.	H. M.
♿ MERCURY. Gr. Elong. 24°.							
1	8. 2. 26	2. 0 S	6. 24. 44	0. 42 S	10. 14 S	1. 0	
4	8. 10. 42	2. 57	6. 29. 12	1. 3	12. 11	1. 6	
7	8. 18. 56	3. 50	7. 3. 33	1. 24	14. 2	1. 11	
10	8. 27. 14	4. 38	7. 7. 45	1. 44	15. 45	1. 16	
13	9. 5. 42	5. 21	7. 11. 49	2. 3	17. 21	1. 21	
16	9. 14. 25	5. 59	7. 15. 43	2. 20	18. 48	1. 25	
19	9. 23. 30	6. 29	7. 19. 25	2. 35	20. 5	1. 28	
22	10. 3. 4	6. 50	7. 22. 50	2. 46	21. 11	1. 31	
25	10. 13. 15	7. 0	7. 25. 55	2. 54	22. 5	1. 32	
28	10. 24. 11	6. 56	7. 28. 31	2. 56	22. 43	1. 31	
31	11. 6. 3	6. 35	8. 0. 28	2. 51	23. 3	1. 28	
♀ VENUS. Sup. ♂ 15 ^d . 11 ^h 15 ^m .							
1	5. 29. 11	3. 17 N	6. 4. 27	1. 23 N	0. 31 S	23. 49	
7	6. 8. 53	3. 6	6. 11. 57	1. 18	3. 32	23. 55	
13	6. 18. 34	2. 49	6. 19. 28	1. 11	6. 32	0. 0	
19	6. 28. 13	2. 28	6. 26. 59	1. 2	9. 27	0. 5	
25	7. 7. 51	2. 2	7. 4. 29	0. 52	12. 13	0. 11	
♂ MARS. □ 21 ^d . 21 ^h .							
1	4. 21. 24	1. 51 N	5. 8. 40	1. 15 N	9. 29 N	22. 12	
7	4. 24. 1	1. 50	5. 12. 26	1. 16	8. 4	22. 4	
13	4. 26. 39	1. 50	5. 16. 11	1. 16	6. 38	21. 56	
19	4. 29. 16	1. 49	5. 19. 55	1. 17	5. 11	21. 47	
25	5. 1. 53	1. 48	5. 23. 39	1. 17	3. 43	21. 38	
♃ JUPITER. □ 21 ^d . 21 ^h .							
1	10. 8. 25	0. 39 S	9. 27. 42	0. 42 S	21. 20 S	7. 28	
7	10. 8. 56	0. 39	9. 27. 55	0. 42	21. 17	7. 8	
13	10. 9. 28	0. 40	9. 28. 15	0. 42	21. 13	6. 47	
19	10. 9. 59	0. 41	9. 28. 41	0. 42	21. 8	6. 26	
25	10. 10. 31	0. 41	9. 29. 13	0. 42	21. 1	6. 6	
♄ SATURN. □ 21 ^d . 21 ^h .							
1	2. 7. 53	1. 45 S	2. 13. 39	1. 50 S	20. 39 N	16. 17	
7	2. 8. 6	1. 44	2. 13. 34	1. 51	20. 37	15. 55	
13	2. 8. 20	1. 44	2. 13. 24	1. 51	20. 35	15. 32	
19	2. 8. 33	1. 43	2. 13. 11	1. 52	20. 33	15. 9	
25	2. 8. 46	1. 43	2. 12. 54	1. 52	20. 31	14. 45	
♅ GEORGIAN. □ 21 ^d . 21 ^h .							
1	5. 4. 11	0. 46 N	5. 5. 52	0. 44 N	10. 3 N	21. 58	
11	5. 4. 19	0. 46	5. 6. 24	0. 44	9. 51	21. 22	
21	5. 4. 27	0. 46	5. 6. 53	0. 44	9. 41	20. 48	

Days of the Week.	Days of the Month.	THE M O O N ' s			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Th.	1	1. 17. 29. 8	1. 24. 53. 36	4. 41. 47 S	4. 25. 23 S
F.	2	2. 2. 14. 40	2. 9. 31. 39	4. 4. 42	3. 40. 11
Sa.	3	2. 16. 44. 1	2. 23. 51. 24	3. 12. 22	2. 41. 49
Sun.	4	3. 0. 53. 42	3. 7. 50. 50	2. 9. 9	1. 34. 56
M.	5	3. 14. 42. 55	3. 21. 30. 6	0. 59. 46 S	0. 24. 9 S
Tu.	6	3. 28. 12. 36	4. 4. 50. 46	0. 11. 24 N	0. 46. 23 N
W.	7	4. 11. 24. 47	4. 17. 55. 5	1. 20. 23	1. 52. 57
Th.	8	4. 24. 21. 52	5. 0. 45. 30	2. 23. 45	2. 52. 25
F.	9	5. 7. 6. 10	5. 13. 24. 9	3. 18. 42	3. 42. 17
Sa.	10	5. 19. 39. 35	5. 25. 52. 37	4. 3. 2	4. 20. 41
Sun.	11	6. 2. 3. 23	6. 8. 12. 0	4. 35. 9	4. 46. 18
M.	12	6. 14. 18. 31	6. 20. 23. 5	4. 54. 4	4. 58. 26
Tu.	13	6. 26. 25. 43	7. 2. 26. 34	4. 59. 24	4. 57. 1
W.	14	7. 8. 25. 44	7. 14. 23. 24	4. 51. 21	4. 42. 30
Th.	15	7. 20. 19. 44	7. 26. 15. 4	4. 30. 36	4. 15. 46
F.	16	8. 2. 9. 38	8. 8. 3. 49	3. 58. 13	3. 38. 5
Sa.	17	8. 13. 58. 1	8. 19. 52. 43	3. 15. 35	2. 50. 55
Sun.	18	8. 25. 48. 25	9. 1. 45. 40	2. 24. 17	1. 55. 56
M.	19	9. 7. 45. 2	9. 13. 47. 12	1. 26. 6	0. 55. 3 N
Tu.	20	9. 19. 52. 47	9. 26. 2. 25	0. 23. 4 N	0. 9. 33 S
W.	21	10. 2. 16. 50	10. 8. 36. 42	0. 42. 28 S	1. 15. 20
Th.	22	10. 15. 2. 36	10. 21. 35. 4	1. 47. 46	2. 19. 18
F.	23	10. 28. 14. 37	11. 5. 1. 35	2. 49. 31	3. 17. 51
Sa.	24	11. 11. 56. 11	11. 18. 58. 24	3. 43. 50	4. 6. 53
Sun.	25	11. 26. 8. 8	0. 3. 24. 54	4. 26. 28	4. 42. 3
M.	26	0. 10. 48. 5	0. 18. 16. 46	4. 53. 10	4. 59. 26
Tu.	27	0. 25. 49. 54	1. 3. 26. 13	5. 0. 33	4. 56. 22
W.	28	1. 11. 4. 19	1. 18. 42. 45	4. 46. 53	4. 32. 15
Th.	29	1. 26. 20. 8	2. 3. 55. 7	4. 12. 48	3. 48. 56
F.	30	2. 11. 26. 29	2. 18. 53. 15	3. 21. 12	2. 50. 17
Sa.	31	2. 26. 14. 36	3. 3. 29. 56	2. 16. 51	1. 41. 34

		THE MOON'S					
Days of the Week.	Days of the Month.	Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight	Noon.	Midnight,
			D.	H. M.	D. M.	D. M.	D. M.
Th.	1	20	15. 10	46. 22	53. 39	12. 33 N	14. 43 N
F.	2	21	16. 7	61. 0	68. 26	16. 38	18. 16
Sa.	3	22	17. 6	75. 55	83. 26	19. 36	20. 37
Sun.	4	23	18. 5	90. 58	98. 27	21. 18	21. 39
M.	5	24	19. 2	105. 52	113. 11	21. 39	21. 20
Tu.	6	25	19. 56	120. 22	127. 24	20. 43	19. 49
W.	7	26	20. 47	134. 16	140. 58	18. 39	17. 16
Th.	8	27	21. 36	147. 30	153. 52	15. 40	13. 54
F.	9	28	22. 22	160. 4	166. 8	11. 59	9. 57
Sa.	10	29	23. 6	172. 5	177. 57	7. 49	5. 38
Sun.	11	30	23. 49	183. 43	189. 25	3. 23 N	1. 8 N
M.	12	1	0	195. 4	200. 41	1. 8 S	3. 22 S
Tu.	13	2	0. 32	206. 19	211. 58	5. 33	7. 41
W.	14	3	1. 15	217. 38	223. 21	9. 43	11. 40
Th.	15	4	1. 58	229. 8	234. 58	13. 30	15. 11
F.	16	5	2. 43	240. 54	246. 54	16. 43	18. 5
Sa.	17	6	3. 29	253. 1	259. 13	19. 15	20. 14
Sun.	18	7	4. 17	265. 31	271. 54	20. 59	21. 31
M.	19	8	5. 7	278. 21	284. 52	21. 48	21. 50
Tu.	20	9	5. 58	291. 27	298. 4	21. 36	21. 7
W.	21	10	6. 49	304. 43	311. 23	20. 21	19. 20
Th.	22	11	7. 40	318. 4	324. 45	18. 3	16. 31
F.	23	12	8. 31	331. 25	338. 6	14. 45	12. 45
Sa.	24	13	9. 23	344. 47	351. 29	10. 32	8. 9
Sun.	25	14	10. 15	358. 13	5. 0	5. 37	2. 57 S
M.	26	15	11. 8	11. 50	18. 46	0. 13 S	2. 33 N
Tu.	27	16	12. 3	25. 46	32. 54	5. 19 N	8. 1
W.	28	17	13. 0	40. 9	47. 32	10. 37	13. 3
Th.	29	18	13. 59	55. 2	62. 40	15. 15	17. 12
F.	30	19	14. 59	70. 23	78. 10	18. 51	20. 10
Sa.	31	20	16. 0	85. 59	93. 46	21. 7	21. 43

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Th.	1	16.32	16.29	60.40	60.31	4723	4734
F.	2	16.26	16.22	60.19	60.4	4748	4766
Sa.	3	16.17	16.12	59.47	59.29	4787	4809
Sun.	4	16.7	16.2	59.10	58.50	4832	4856
M.	5	15.56	15.51	58.30	58.9	4881	4907
Tu.	6	15.45	15.40	57.49	57.29	4932	4957
W.	7	15.35	15.30	57.10	56.52	4981	5004
Th.	8	15.25	15.20	56.34	56.17	5027	5049
F.	9	15.16	15.12	56.1	55.46	5069	5089
Sa.	10	15.8	15.4	55.32	55.19	5107	5124
Sun.	11	15.1	14.58	55.7	54.56	5140	5154
M.	12	14.55	14.53	54.46	54.37	5167	5179
Tu.	13	14.51	14.49	54.29	54.22	5190	5199
W.	14	14.47	14.46	54.16	54.12	5207	5213
Th.	15	14.45	14.45	54.8	54.7	5218	5219
F.	16	14.45	14.45	54.7	54.9	5219	5217
Sa.	17	14.47	14.49	54.14	54.21	5210	5201
Sun.	18	14.51	14.54	54.29	54.40	5190	5175
M.	19	14.57	15.2	54.53	55.9	5158	5137
Tu.	20	15.7	15.12	55.27	55.47	5114	5087
W.	21	15.18	15.25	56.10	56.35	5058	5026
Th.	22	15.32	15.40	57.1	57.28	4992	4958
F.	23	15.47	15.55	57.57	58.26	4922	4886
Sa.	24	16.3	16.11	58.55	59.24	4850	4815
Sun.	25	16.18	16.25	59.51	60.16	4782	4752
M.	26	16.31	16.36	60.38	60.57	4725	4703
Tu.	27	16.40	16.43	61.11	61.21	4686	4675
W.	28	16.44	16.44	61.26	61.26	4669	4669
Th.	29	16.43	16.41	61.22	61.13	4673	4684
F.	30	16.37	16.33	61.0	60.43	4699	4719
Sa.	31	16.27	16.21	60.23	60.0	4743	4771

DISTANCES of MOON's Center from SUN, and from STARS EAST of her.

Stars Names.	Days	Noon.	III ^b .	V ^b .	IX ^b .	Midnight.	XV ^b .	XVIII ^b .	XXI ^b .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Pollux.	1	63. 49. 11	61. 59. 11	60. 9. 24	58. 19. 49	56. 30. 26	54. 41. 17	52. 52. 25	51. 3. 49
	2	49. 15. 30	47. 27. 30	45. 39. 50	43. 52. 31	42. 5. 34	40. 19. 0	38. 32. 51	36. 47. 7
	3	35. 1. 49							
Regulus.	3	70. 18. 42	68. 31. 22	66. 44. 20	64. 57. 36	63. 11. 9	61. 25. 0	59. 39. 9	57. 53. 36
	4	56. 8. 22	54. 23. 26	52. 38. 49	50. 54. 31	49. 10. 31	47. 26. 48	45. 43. 24	44. 0. 21
	5	42. 17. 36							
The Sun.	2	-	-	-	-	120. 7. 41	118. 27. 1	116. 46. 37	115. 6. 30
	3	113. 26. 39	111. 47. 5	110. 7. 47	108. 28. 46	106. 50. 3	105. 11. 37	103. 33. 28	101. 55. 37
	4	100. 18. 3	98. 40. 48	97. 3. 52	95. 27. 13	93. 50. 52	92. 14. 49	90. 39. 5	89. 3. 39
	5	87. 28. 31	85. 53. 41	84. 19. 9	82. 44. 54	81. 10. 57	79. 37. 18	78. 3. 56	76. 30. 51
	6	74. 58. 3	73. 25. 32	71. 53. 18	70. 21. 21	68. 49. 40	67. 18. 16	65. 47. 7	64. 16. 15
	7	62. 45. 39	61. 15. 18	59. 45. 13	58. 15. 23	56. 45. 47	55. 16. 27	53. 47. 21	52. 18. 30
	8	50. 49. 54	49. 21. 32	47. 53. 24	46. 25. 30	44. 57. 51	43. 30. 26	42. 3. 15	40. 36. 17
	9	39. 9. 36							
	14	79. 18. 37	78. 1. 27	76. 44. 30	75. 27. 45	74. 11. 13	72. 54. 55	71. 38. 53	70. 23. 7
α Aquila.	15	69. 7. 37	67. 52. 24	66. 37. 29	65. 22. 54	64. 8. 40	62. 54. 46	61. 41. 15	60. 28. 9
	16	59. 15. 29	58. 3. 14	56. 51. 29	55. 40. 15	54. 29. 34	53. 19. 30	52. 10. 2	51. 1. 15
	17	49. 53. 9							

Stars Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XX ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Fomalhaut.	17	79. 6. 58	77. 42. 52	76. 18. 45	74. 54. 38	73. 30. 30	72. 6. 22	70. 42. 15	69. 18. 7
	18	67. 53. 59	66. 29. 50	65. 5. 41	63. 41. 33	62. 17. 26	60. 53. 19	59. 29. 13	58. 5. 9
	19	56. 41. 7							
α Pegasi.	19	73. 24. 3	72. 1. 52	70. 39. 38	69. 17. 20	67. 55. 0	66. 32. 39	65. 10. 19	63. 47. 59
	20	62. 25. 41	61. 3. 22	59. 41. 8	58. 19. 1	56. 56. 57	55. 35. 1	54. 13. 14	52. 51. 36
	21	51. 30. 8							
α Arietis.	21	92. 36. 46	91. 5. 11	89. 33. 15	88. 0. 59	86. 38. 23	84. 55. 26	83. 22. 9	81. 48. 30
	22	80. 14. 31	78. 40. 11	77. 5. 29	75. 30. 26	73. 55. 2	72. 19. 16	70. 43. 11	69. 6. 43
	23	67. 29. 56	65. 52. 49	64. 15. 22	62. 37. 36	60. 59. 34	59. 21. 12	57. 42. 35	56. 3. 43
	24	54. 24. 38	52. 45. 19	51. 5. 50	49. 26. 14	47. 46. 33	46. 6. 49	44. 27. 4	42. 47. 20
	25	41. 7. 42							
Aldebaran.	25	70. 30. 11	68. 41. 57	66. 53. 18	65. 4. 14	63. 14. 47	61. 24. 57	59. 34. 45	57. 44. 12
	26	55. 53. 20	54. 2. 7	52. 10. 35	50. 18. 44	48. 26. 38	46. 34. 16	44. 41. 39	42. 48. 47
	27	40. 55. 42	39. 2. 25	37. 8. 58	35. 15. 22	33. 21. 41	31. 27. 53	29. 34. 0	27. 40. 4
	28	25. 46. 8							
Pollux.	28	70. 8. 39	68. 15. 19	66. 22. 0	64. 28. 43	62. 35. 28	60. 42. 18	58. 49. 14	56. 56. 19
	29	55. 3. 32	53. 10. 56	51. 18. 33	49. 26. 24	47. 34. 29	45. 42. 53	43. 51. 34	42. 0. 35
	30	40. 9. 59							
Regulus. N. 1	30	75. 36. 2	73. 43. 54	71. 52. 4	70. 0. 31	68. 9. 16	66. 18. 19	64. 27. 43	62. 37. 28
	31	60. 47. 33	58. 58. 0	57. 8. 49	55. 20. 2	53. 31. 35	51. 43. 33	49. 55. 55	48. 8. 41
		46. 21. 50							

DISTANCES of MOON'S Center from SUN, and from STARS WEST of her.

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Pegasi.	1	60. 51. 40	62. 39. 45	-	64. 10. 3	65. 49. 32	67. 29. 9	69. 8. 53	70. 48. 40	72. 28. 29	74. 8. 18	75. 48. 6	77. 27. 52	79. 7. 27	80. 46. 52	82. 26. 46	84. 6. 30
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
α Arietis.	3	43. 46. 56	45. 26. 47	47. 6. 50	48. 47. 3	49. 27. 19	50. 27. 19	51. 27. 19	52. 27. 19	53. 27. 19	54. 27. 19	55. 27. 19	56. 27. 19	57. 27. 19	58. 27. 19	59. 27. 19	60. 27. 19
	4	57. 8. 13	58. 48. 16	59. 28. 11	60. 28. 11	61. 28. 11	62. 28. 11	63. 28. 11	64. 28. 11	65. 28. 11	66. 28. 11	67. 28. 11	68. 28. 11	69. 28. 11	70. 28. 11	71. 28. 11	72. 28. 11
	5	70. 24. 34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aldebaran.	5	37. 58. 26	39. 40. 57	41. 23. 10	43. 5. 6	45. 17. 36	47. 29. 9	49. 41. 32	51. 53. 36	53. 65. 40	55. 77. 44	57. 89. 48	59. 101. 52	61. 113. 56	63. 125. 60	65. 137. 64	67. 149. 68
	6	51. 30. 31	53. 10. 45	54. 50. 44	56. 30. 28	58. 10. 12	59. 59. 56	61. 49. 40	63. 39. 24	65. 29. 8	67. 18. 52	69. 8. 36	70. 58. 20	72. 48. 4	74. 38. 48	76. 28. 32	78. 18. 16
	7	64. 45. 7	66. 23. 18	68. 1. 17	69. 38. 59	71. 26. 40	73. 14. 21	75. 2. 2	76. 50. 22	78. 38. 2	80. 26. 2	82. 14. 2	84. 2. 2	85. 50. 2	87. 38. 2	89. 26. 2	91. 14. 2
	8	77. 43. 59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pollux.	8	34. 6. 51	35. 41. 0	37. 15. 4	38. 49. 3	40. 33. 7	42. 7. 1	43. 50. 5	45. 44. 9	47. 38. 3	49. 31. 7	51. 25. 1	53. 18. 5	55. 12. 9	57. 6. 3	59. 0. 7	60. 54. 1
	9	46. 37. 41	48. 11. 5	49. 44. 24	51. 17. 36	52. 50. 39	54. 23. 35	55. 56. 22	57. 29. 2	59. 2. 18	60. 35. 11	62. 8. 5	63. 42. 39	65. 16. 32	66. 50. 26	68. 24. 20	69. 58. 14
	10	59. 1. 33	60. 33. 57	62. 6. 13	63. 38. 20	65. 10. 21	66. 42. 27	68. 14. 33	69. 46. 39	71. 18. 45	72. 50. 51	74. 22. 57	75. 55. 3	77. 27. 39	79. 0. 45	80. 32. 51	82. 5. 57
The Sun.	16	39. 14. 23	40. 34. 38	41. 54. 56	43. 15. 16	44. 35. 39	45. 56. 4	47. 16. 32	48. 37. 4	49. 57. 40	51. 18. 19	52. 39. 4	53. 59. 53	55. 20. 47	56. 41. 46	58. 2. 52	59. 24. 5
	17	49. 57. 40	51. 18. 19	52. 39. 4	53. 59. 53	55. 20. 47	56. 41. 46	58. 2. 52	59. 24. 5	60. 45. 24	62. 6. 49	63. 28. 24	64. 50. 6	66. 11. 56	67. 33. 56	68. 56. 6	70. 18. 26
	18	60. 45. 24	62. 6. 49	63. 28. 24	64. 50. 6	66. 11. 56	67. 33. 56	68. 56. 6	70. 18. 26	71. 40. 56	73. 3. 38	74. 26. 33	75. 49. 40	77. 12. 58	78. 36. 30	80. 0. 18	81. 24. 19
	19	71. 40. 56	73. 3. 38	74. 26. 33	75. 49. 40	77. 12. 58	78. 36. 30	80. 0. 18	81. 24. 19	82. 48. 35	84. 13. 6	85. 37. 54	87. 2. 59	88. 28. 20	89. 53. 59	91. 19. 57	92. 46. 15
	20	82. 48. 35	84. 13. 6	85. 37. 54	87. 2. 59	88. 28. 20	89. 53. 59	91. 19. 57	92. 46. 15	-	-	-	-	-	-	-	-

CONFIGURATIONS of the SATELLITES of JUPITER
at VII o'Clock in the *Evening*.

1		.4	.1.2	○	.3
2		.4		○	1. 2. 3.
3	1.○2●3●		.4	○	
4		3.	.2	1. ○	.4
5		.3		○	1 6 2 .4
6			.3 1.	○	2. .4
7			2.	○	1. .3 .4
8			1 6 2	○	.3 .4
9				○	1. .2 3. 4.
10	2●3●		.1	○	.4
11	1●	3.	.2	○	.4
12		.3		○	4. 1 6 2
13			4. .3 1.	○	3.
14		4.	2.	○	1 6 3
15		4.	1 6 2	○	.3
16		4.		○	1. .2 3.
17		.4	.1	○	2 6 3
18	1●	.4	3. 2.	○	
19			3 6 4	○	1 6 2
20			.3 .4 1.	○	2.
21			2.	○	1 6 3 4
22			.2 1.	○	3 6 4
23				○	1. .2 3. .4
24			.1	○	2 6 3 .4
25			2 6 3	○	1. .4
26	1.○2.○	3.		○	.4
27	1●	.3		○	2. .4
28			2.	○	.3 .1 4.
29			.2 1. 4.	○	.3
30		4.		○	1. .2 3.
31		4.	.1	○	.2. 3.

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.	
			D. H. M.	
			☾ Last Quarter - - -	3. 5. 40
			● New Moon - - - -	11. 4. 11
			☽ First Quarter - - -	19. 6. 44
			○ Full Moon - - - -	25. 23. 42
			Other Phenomena.	
			D. H. M.	
Sun.	1	22d Su. aft. Tr. All Saints.	1. 2. 32	☽ ζ II
M.	2	Prince Edward born.	8. 33	☽ δ II
Tu.	3	Prs. Soph. born. On mor.	2. 19. 53	☽ δ ☾
W.	4	[of All Souls, 1 ret.	4 - -	☽ Stationary.
Th.	5	Powder-Plot, 1605.	7 - -	☽ n ☾ diff. Lat. 4'.
F.	6	Leon ^d . Mich. Ter. beg.	2. 49	☽ c ☾
Sa.	7		14. 15. 25	☽ i ad μ ♄
Sun.	8	23d Sunday after Trinity.	15. 15. 5	☽ o ♄
M.	9	[Prs. Aug. Sophia b.	17. 37	☽ π ♄
Tu.	10	St. Martin.	17. 6. 46	☽ 24
W.	11	On mor. of St. Mart. 2 ret.	18. 14. 49	☽ γ ☾
Th.	12	Britius. [Camb. T. div. m.	18. 6	☽ δ ☾
F.	13		19. 3. 47	☽ i ☾
Sa.	14		20. 11. 40	☽ i ad ↓ ☾
Sun.	15	24th Sunday after Trinity.	12. 27	☽ 2 ad ↓ ☾
M.	16	[Machutus.	12. 34	☽ 3 ad ↓ ☾
Tu.	17	Hugh Bp. of Lincoln.	21. 9. 44	☽ 33 ✕
W.	18	In 8 days of St. Mart. 3	18. 51	☉ enters ♄
Th.	19	[ret.	23 - -	☽ Stationary.
F.	20	Edm. K. and Mart.	24. 1. 6	☽ 2 ad ξ Ceti.
Sa.	21		7. 27 ¹ / ₂	☽ 1. μ Ce. * 6 ¹ / ₂ N. of ♄'s C.
Sun.	22	25th Sun. aft. Tr. Cecilia.	8. 29 ¹ / ₂	☽ 2. 19
M.	23	St. Clement.	23. 43	☽ 2 ad δ ☽
Tu.	24		26. 1. 49	☽ ε ☽
W.	25	D. of Glo. born. Cath. In	27. 3. 32	☽ ζ ☽
Th.	26	[15 days of St. Mart. 4 r.	17. 21	☽ η II
F.	27		20. 20	☽ μ II
Sa.	28	Michaelmas Term ends.	28. 17. 53	☽ δ II
Sun.	29	Advent Sunday.	29 - -	☽ θ ☾ diff. Lat. 28'.
M.	30	St. Andrew.		

Days of the Week.	Days of the Month.	THE S U N ' s			Equation of Time.	Diff.
		Longitude.	R ^t . Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sun.	1	7. 9. 3. 24	14. 26. 38, 7	14. 31. 48	16. 15, 2	0, 7
M.	2	7. 10. 3. 33	14. 30. 34, 6	14. 50. 54	16. 15, 9	0, 1
Tu.	3	7. 11. 3. 44	14. 34. 31, 3	15. 9. 45	16. 15, 8	1, 0
W.	4	7. 12. 3. 57	14. 38. 28, 8	15. 28. 21	16. 14, 8	1, 8
Th.	5	7. 13. 4. 12	14. 42. 27, 2	15. 46. 42	16. 13, 0	2, 7
F.	6	7. 14. 4. 30	14. 46. 26, 4	16. 4. 47	16. 10, 3	3, 6
Sa.	7	7. 15. 4. 50	14. 50. 26, 5	16. 22. 36	16. 6, 7	4, 4
Sun.	8	7. 16. 5. 12	14. 54. 27, 5	16. 40. 9	16. 2, 3	5, 3
M.	9	7. 17. 5. 36	14. 58. 29, 4	16. 57. 25	15. 57, 0	6, 1
Tu.	10	7. 18. 6. 1	15. 2. 32, 1	17. 14. 23	15. 50, 9	7, 0
W.	11	7. 19. 6. 28	15. 6. 35, 6	17. 31. 3	15. 43, 9	7, 8
Th.	12	7. 20. 6. 57	15. 10. 40, 0	17. 47. 26	15. 36, 1	8, 7
F.	13	7. 21. 7. 27	15. 14. 45, 2	18. 3. 30	15. 27, 4	9, 5
Sa.	14	7. 22. 7. 59	15. 18. 51, 3	18. 19. 15	15. 17, 9	10, 3
Sun.	15	7. 23. 8. 33	15. 22. 58, 3	18. 34. 41	15. 7, 6	11, 2
M.	16	7. 24. 9. 8	15. 27. 6, 1	18. 49. 47	14. 56, 4	12, 0
Tu.	17	7. 25. 9. 44	15. 31. 14, 7	19. 4. 32	14. 44, 4	12, 8
W.	18	7. 26. 10. 21	15. 35. 24, 1	19. 18. 57	14. 31, 6	13, 6
Th.	19	7. 27. 11. 0	15. 39. 34, 3	19. 33. 1	14. 18, 0	14, 5
F.	20	7. 28. 11. 40	15. 43. 45, 3	19. 46. 44	14. 3, 5	15, 2
Sa.	21	7. 29. 12. 21	15. 47. 57, 1	20. 0. 5	13. 48, 3	16, 0
Sun.	22	8. 0. 13. 2	15. 52. 9, 7	20. 13. 4	13. 32, 3	16, 7
M.	23	8. 1. 13. 45	15. 56. 23, 0	20. 25. 40	13. 15, 6	17, 5
Tu.	24	8. 2. 14. 29	16. 0. 37, 0	20. 37. 53	12. 58, 1	18, 2
W.	25	8. 3. 15. 14	16. 4. 51, 8	20. 49. 45	12. 39, 9	19, 0
Th.	26	8. 4. 16. 0	16. 9. 7, 5	21. 1. 12	12. 20, 9	19, 7
F.	27	8. 5. 16. 48	16. 13. 23, 8	21. 12. 15	12. 1, 2	20, 4
Sa.	28	8. 6. 17. 37	16. 17. 40, 9	21. 22. 54	11. 40, 8	21, 1
Sun.	29	8. 7. 18. 27	16. 21. 58, 6	21. 33. 9	11. 19, 7	21, 8
M.	30	8. 8. 19. 19	16. 26. 17, 0	21. 43. 0	10. 57, 9	

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Days	Time of ☉'s Semidiam. pass ^s Merid.	THE SUN'S			Place of the ☿'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 6, 9	16. 11, 1	2. 30, 3	9.996287	3. 23. 49
7	1. 7, 6	16. 12, 5	2. 30, 8	9.995667	3. 23. 30
13	1. 8, 3	16. 13, 8	2. 31, 2	9.995079	3. 23. 10
19	1. 9, 0	16. 15, 0	2. 31, 7	9.994519	3. 22. 51
25	1. 9, 6	16. 16, 1	2. 32, 0	9.994020	3. 22. 32

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	14. 47. 16	4	9. 30. 52	1	1. 45. 50 E.
3	9. 16. 13	7	22. 48. 26	8	2. 13. 13 Im.
5	3. 45. 8	11	12. 5. 53	*8	5. 47. 8 E.
6	22. 13. 59	15	1. 23. 13	*15	6. 13. 13 Im.
8	16. 42. 47	18	14. 40. 25	15	9. 47. 45 E.
10	11. 11. 32	22	3. 57. 27	22	10. 13. 49 Im.
*12	5. 40. 14	25	17. 14. 19	22	13. 47. 37 E.
14	0. 8. 54	*29	6. 31. 2	29	14. 12. 57 Im.
15	18. 37. 32			29	17. 46. 41 E.
17	13. 6. 8			IV. Satellite.	
*19	7. 34. 41				
21	2. 3. 11			*15	7. 29. 33 Im.
22	20. 31. 39			15	12. 12. 20 E.
24	15. 0. 3				
26	9. 28. 24				
28	3. 56. 43				
29	22. 24. 58				

Days	THE PLANETS					
	Heliocentric		Geocentric		Declin.	Passage Merid.
	Long.	Lat.	Long.	Lat.		
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
♿ MERCURY.						Inf. ♂ 14 ^h 21 ^m 3 ^s .
1	11. 10. 15	6. 23 S	8. 0. 56	2. 47 S	23. 5 S	1. 26
4	11. 23. 36	5. 33	8. 1. 37	2. 29	22. 57	1. 17
7	0. 8. 14	4. 18	8. 1. 2	1. 58	22. 19	1. 3
10	0. 24. 14	2. 36	7. 28. 58	1. 13	21. 8	0. 43
13	1. 11. 32	0. 32 S	7. 25. 35	0. 15 S	19. 25	0. 18
16	1. 29. 52	1. 42 N	7. 21. 34	0. 46 N	17. 26	23. 41
19	2. 18. 46	3. 49	7. 18. 3	1. 39	15. 39	23. 17
22	3. 7. 34	5. 30	7. 15. 56	2. 14	14. 29	22. 59
25	3. 25. 40	6. 34	7. 15. 33	2. 32	14. 5	22. 47
28	4. 12. 34	6. 59	7. 16. 40	2. 34	14. 22	22. 40
30	4. 23. 4	6. 57	7. 18. 5	2. 30	14. 50	22. 38
♀ VENUS.						
1	7. 19. 3	1. 29 N	7. 13. 16	0. 38 N	15. 15 S	0. 17
7	7. 28. 37	0. 57	7. 20. 48	0. 24	17. 35	0. 23
13	8. 8. 10	0. 24 N	7. 28. 20	0. 10 N	19. 39	0. 20
19	8. 17. 42	0. 10 S	8. 5. 52	0. 5 S	21. 23	0. 36
25	8. 27. 12	0. 44	8. 13. 23	0. 19	22. 44	0. 43
♂ MARS.						
1	5. 4. 57	1. 46 N	5. 27. 59	1. 18 N	1. 59 N	21. 27
7	5. 7. 34	1. 45	6. 1. 41	1. 18	0. 31 N	21. 16
13	5. 10. 12	1. 43	6. 5. 23	1. 18	0. 57 S	21. 5
19	5. 12. 49	1. 41	6. 9. 4	1. 18	2. 24	20. 54
25	5. 15. 27	1. 39	6. 12. 44	1. 18	3. 50	20. 42
♃ JUPITER.						
1	10. 11. 7	0. 42 S	9. 29. 59	0. 41 S	20. 51 S	5. 43
7	10. 11. 39	0. 43	10. 0. 44	0. 41	20. 41	5. 21
13	10. 12. 10	0. 43	10. 1. 34	0. 41	20. 30	5. 0
19	10. 12. 42	0. 44	10. 2. 29	0. 41	20. 18	4. 39
25	10. 13. 13	0. 44	10. 3. 29	0. 41	20. 4	4. 18
♄ SATURN.						
1	2. 9. 2	1. 42 S	2. 12. 30	1. 53 S	20. 27 N	14. 16
7	2. 9. 15	1. 42	2. 12. 7	1. 53	20. 24	13. 51
13	2. 9. 29	1. 41	2. 11. 41	1. 53	20. 21	13. 25
19	2. 9. 42	1. 41	2. 11. 13	1. 53	20. 17	12. 58
25	2. 9. 56	1. 41	2. 10. 44	1. 53	20. 13	12. 30
♅ GEORGIAN.						□ 20 ^h 16 ^m 3 ^s .
1	5. 4. 35	0. 46 N	5. 7. 20	0. 45 N	9. 31 N	20. 7
11	5. 4. 43	0. 46	5. 7. 40	0. 45	9. 24	19. 28
21	5. 4. 51	0. 46	5. 7. 55	0. 45	9. 19	18. 48

Days of the Week.	Days of the Month.	THE MOON'S							
		Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.	S. D. M. S.	S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Sun.	1	3. 10. 38. 54	3. 17. 41. 19	1. 5. 9 S	0. 28. 15 S				
M.	2	3. 24. 37. 11	4. 1. 26. 39	0. 8. 34 N	0. 44. 38 N				
Tu.	3	4. 8. 10. 0	4. 14. 47. 32	1. 19. 34	1. 52. 57				
W.	4	4. 21. 19. 42	4. 27. 46. 56	2. 24. 21	2. 53. 30				
Th.	5	5. 4. 9. 42	5. 10. 28. 24	3. 20. 6	3. 43. 57				
F.	6	5. 16. 43. 35	5. 22. 55. 34	4. 4. 51	4. 22. 39				
Sa.	7	5. 29. 4. 48	6. 5. 11. 36	4. 37. 15	4. 48. 32				
Sun.	8	6. 11. 16. 16	6. 17. 19. 5	4. 56. 28	5. 1. 3				
M.	9	6. 23. 20. 20	6. 29. 23. 8	5. 2. 13	5. 0. 4				
Tu.	10	7. 5. 18. 45	7. 11. 16. 18	4. 54. 34	4. 45. 53				
W.	11	7. 17. 12. 58	7. 23. 8. 52	4. 34. 3	4. 19. 18				
Th.	12	7. 29. 4. 14	8. 4. 59. 13	4. 1. 44	3. 41. 31				
F.	13	8. 10. 54. 2	8. 16. 48. 55	3. 18. 54	2. 54. 5				
Sa.	14	8. 22. 44. 11	8. 28. 40. 7	2. 27. 19	1. 58. 51				
Sun.	15	9. 4. 37. 7	9. 10. 35. 37	1. 28. 56	0. 57. 54 N				
M.	16	9. 16. 36. 2	9. 22. 38. 54	0. 26. 0 N	0. 6. 27 S				
Tu.	17	9. 28. 44. 45	10. 4. 54. 6	0. 39. 7 S	1. 11. 41				
W.	18	10. 11. 7. 37	10. 17. 25. 52	1. 43. 45	2. 15. 0				
Th.	19	10. 23. 49. 26	11. 0. 18. 52	2. 45. 0	3. 13. 19				
F.	20	11. 6. 54. 43	11. 13. 37. 25	3. 39. 34	4. 3. 15				
Sa.	21	11. 20. 27. 14	11. 27. 24. 25	4. 23. 53	4. 41. 2				
Sun.	22	0. 4. 28. 58	0. 11. 40. 45	4. 54. 14	5. 3. 2				
M.	23	0. 18. 59. 21	0. 26. 24. 14	5. 7. 6	5. 6. 4				
Tu.	24	1. 3. 54. 31	1. 11. 29. 12	4. 59. 49	4. 48. 17				
W.	25	1. 19. 7. 4	1. 26. 46. 42	4. 31. 32	4. 9. 51				
Th.	26	2. 4. 26. 45	2. 12. 5. 47	3. 43. 35	3. 13. 22				
F.	27	2. 19. 42. 26	2. 27. 15. 27	2. 39. 47	2. 3. 36				
Sa.	28	3. 4. 43. 43	3. 12. 6. 23	1. 25. 37	0. 40. 35 S				
Sun.	29	3. 19. 22. 45	3. 26. 32. 23	0. 7. 19 S	0. 31. 31 N				
M.	30	4. 3. 35. 1	4. 10. 30. 34	1. 9. 15 N	1. 45. 21				

Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Passage	Right Ascension.		Declination.	
			Merid.	Noon.	Midnight.	Noon.	Midnight.
			D. H. M.	D. M.	D. M.	D. M.	D. M.
Sun.	1	21	16. 59	101. 29	109. 6	21. 57 N	21. 49 N
M.	2	22	17. 56	116. 34	123. 52	21. 21	20. 35
Tu.	3	23	18. 49	130. 57	137. 50	19. 31	18. 12
W.	4	24	19. 38	144. 31	151. 0	16. 41	14. 58
Th.	5	25	20. 24	157. 18	163. 25	13. 6	11. 6
F.	6	26	21. 8	169. 24	175. 15	9. 0	6. 50
Sa.	7	27	21. 51	181. 0	186. 41	4. 36	2. 21 N
Sun.	8	28	22. 33	192. 18	197. 53	0. 5 N	2. 10 S
M.	9	29	23. 15	203. 28	209. 3	4. 23 S	6. 34
Tu.	10	30	23. 58	214. 40	220. 20	8. 40	10. 41
W.	11	1	0	226. 4	231. 52	12. 36	14. 23
Th.	12	2	0. 42	237. 46	243. 44	16. 2	17. 31
F.	13	3	1. 27	249. 49	255. 59	18. 49	19. 55
Sa.	14	4	2. 14	262. 14	268. 34	20. 48	21. 28
Sun.	15	5	3. 3	274. 59	281. 27	21. 54	22. 4
M.	16	6	3. 53	287. 57	294. 29	22. 0	21. 40
Tu.	17	7	4. 43	301. 1	307. 33	21. 4	20. 13
W.	18	8	5. 33	314. 5	320. 36	19. 7	17. 46
Th.	19	9	6. 22	327. 5	333. 34	16. 11	14. 23
F.	20	10	7. 11	340. 2	346. 30	12. 23	10. 12
Sa.	21	11	8. 0	352. 59	359. 30	7. 50	5. 20
Sun.	22	12	8. 50	6. 4	12. 43	2. 43 S	0. 2 S
M.	23	13	9. 42	19. 28	26. 21	2. 42 N	5. 26 N
Tu.	24	14	10. 36	33. 22	40. 34	8. 8	10. 43
W.	25	15	11. 34	47. 56	55. 28	13. 10	15. 24
Th.	26	16	12. 35	63. 11	71. 3	17. 23	19. 4
F.	27	17	13. 37	79. 1	87. 3	20. 24	21. 22
Sa.	28	18	14. 39	95. 6	103. 5	21. 57	22. 8
Sun.	29	19	15. 39	110. 58	118. 40	21. 56	21. 23
M.	30	20	16. 35	126. 11	133. 28	20. 29	19. 18

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Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
Sun.	1	16. 14	16. 7	59. 36	59. 10	4800	4832
M.	2	16. 0	15. 53	58. 43	58. 16	4865	4898
Tu.	3	15. 46	15. 39	57. 50	57. 25	4931	4962
W.	4	15. 32	15. 26	57. 1	56. 38	4992	5022
Th.	5	15. 20	15. 15	56. 17	55. 57	5049	5075
F.	6	15. 10	15. 5	55. 39	55. 22	5098	5120
Sa.	7	15. 1	14. 58	55. 7	54. 54	5140	5157
Sun.	8	14. 55	14. 52	54. 43	54. 33	5171	5185
M.	9	14. 50	14. 48	54. 25	54. 18	5195	5205
Tu.	10	14. 46	14. 45	54. 12	54. 8	5213	5218
W.	11	14. 44	14. 44	54. 5	54. 3	5222	5225
Th.	12	14. 44	14. 44	54. 3	54. 4	5225	5223
F.	13	14. 44	14. 45	54. 6	54. 9	5221	5217
Sa.	14	14. 47	14. 49	54. 14	54. 21	5210	5201
Sun.	15	14. 51	14. 54	54. 30	54. 41	5189	5174
M.	16	14. 57	15.	54. 53	55. 7	5158	5140
Tu.	17	15. 5	15. 10	55. 23	55. 41	5119	5095
W.	18	15. 16	15. 22	56. 1	56. 23	5069	5041
Th.	19	15. 29	15. 36	56. 47	57. 13	5010	4977
F.	20	15. 43	15. 51	57. 40	58. 8	4943	4908
Sa.	21	15. 58	16. 6	58. 37	59. 5	4872	4838
Sun.	22	16. 14	16. 21	59. 32	60. 0	4804	4771
M.	23	16. 28	16. 34	60. 21	60. 47	4741	4715
Tu.	24	16. 39	16. 43	61. 6	61. 21	4692	4675
W.	25	16. 45	16. 47	61. 32	61. 38	4661	4654
Th.	26	16. 47	16. 46	61. 3	33	4654	4660
F.	27	16. 44	16. 40	61. 2	9	4672	4689
Sa.	28	16. 35	16. 29	60. 5	28	4711	4737
Sun.	29	16. 22	16. 14	60.	36	4768	4800
M.	30	16. 7	15. 59	59.	38	4835	4871

DISTANCES of MOON's Center from SUN, and from STARS EAST of her.

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Regulus.	1	46.	21. 50	44.	35. 25	42.	49. 25	41.	3. 49	39.	18. 38	37.	33. 53	35.	49. 33	34.	5. 39
	2	32.	22. 11	30.	39. 9	28.	56. 33	27.	14. 24	25.	32. 42	23.	51. 26	22.	10. 38	20.	30. 17
	3	18.	50. 23														
The Sun.	1	118.	24. 10	116.	45. 33	115.	7. 20	113.	29. 31	111.	52. 6	110.	15. 4	108.	38. 26	107.	2. 12
	2	105.	26. 22	103.	50. 55	102.	15. 52	100.	41. 12	99.	6. 56	97.	33. 3	95.	59. 33	94.	26. 26
	3	92.	53. 41	91.	21. 19	89.	49. 19	88.	17. 41	86.	46. 24	85.	15. 28	83.	44. 53	82.	14. 39
	4	80.	44. 45	79.	15. 11	77.	45. 56	76.	16. 59	74.	48. 21	73.	20. 1	71.	51. 59	70.	24. 14
	5	68.	56. 46	67.	29. 35	66.	2. 41	64.	36. 2	63.	9. 39	61.	43. 31	60.	17. 36	58.	51. 56
	6	57.	26. 30	56.	1. 19	54.	36. 21	53.	11. 35	51.	47. 2	50.	22. 41	48.	58. 32	47.	34. 34
	7	46.	10. 48	44.	47. 14	43.	23. 51	42.	0. 39	40.	37. 37						
α Pegasi.	13	98.	3. 16	96.	42. 9	95.	20. 58	93.	59. 43	92.	38. 24	91.	17. 2	89.	55. 37	88.	34. 9
	14	87.	12. 39	85.	51. 7	84.	29. 34	83.	7. 59	81.	46. 23	80.	24. 47	79.	3. 10	77.	41. 33
	15	76.	19. 55	74.	58. 17	73.	36. 39	72.	15. 3	70.	53. 28	69.	31. 55	68.	10. 25	66.	48. 58
	16	65.	27. 35	64.	6. 17	62.	45. 5	61.	23. 59	60.	3. 0	58.	42. 8	57.	21. 26	56.	0. 56
α Arietis.	17	54.	40. 38	53.	20. 35	52.	0. 50	50.	41. 23	49.	22. 16						
	17	-	-	-	-	-	-	-	-	90.	6. 58	88.	36. 50	87.	6. 27	85.	35. 49
	18	84.	4. 56	82.	33. 47	81.	2. 23	79.	30. 43	77.	58. 48	76.	26. 37	74.	54. 9	73.	21. 25
	19	71.	48. 25	70.	15. 8	68.	41. 36	67.	7. 48	65.	33. 44	63.	59. 24	*62.	24. 49	60.	50. 0

* Read thus in first Edition.

Stars Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Arietis.	20	59. 14. 56	57. 39. 37	56. 4. 5	54. 28. 21	52. 52. 27	51. 16. 24	49. 40. 12	48. 3. 53
	21	46. 27. 27							
	21	76. 9. 24	74. 26. 4	72. 42. 17	70. 58. 4	69. 13. 25	67. 28. 19	65. 42. 47	63. 56. 49
	22	62. 10. 25	60. 23. 34	58. 36. 18	56. 48. 37	55. 0. 30	53. 11. 58	51. 23. 2	49. 33. 43
	23	47. 44. 0	45. 53. 54	44. 3. 25	42. 12. 35	40. 21. 24	38. 29. 53	36. 38. 3	34. 45. 55
Aldebaran.	24	32. 53. 31	31. 0. 49	29. 7. 53	27. 14. 45	25. 21. 25	23. 27. 55	21. 34. 17	19. 40. 32
	25	17. 46. 41							
	25	62. 11. 42	60. 18. 10	58. 24. 34	56. 30. 54	54. 37. 12	52. 43. 30	50. 49. 51	48. 56. 16
Pollux.	26	47. 2. 45	45. 9. 20	43. 16. 6	41. 23. 5	39. 30. 17	37. 37. 45	35. 45. 34	33. 53. 44
	27	32. 2. 16							
	27	67. 20. 5	65. 26. 21	63. 32. 51	61. 39. 36	59. 46. 36	57. 53. 53	56. 1. 28	54. 9. 22
Regulus.	28	52. 17. 36	50. 26. 11	48. 35. 7	46. 44. 25	44. 54. 7	43. 4. 13	41. 14. 41	39. 25. 40
	29	37. 37. 2	35. 48. 51	34. 1. 7	32. 13. 52	30. 27. 5	28. 40. 48	26. 55. 1	25. 9. 44
	30	23. 24. 59							
	30	77. 27. 24	75. 43. 21	73. 59. 46	72. 16. 39	70. 34. 0	68. 51. 50	67. 10. 8	65. 28. 54
Spica η	D. 1	63. 48. 9							
The Sun.	30	- - -	- - -	121. 30. 11	119. 54. 2	118. 18. 20	116. 43. 4	115. 8. 14	113. 33. 51
	D. 1	111. 59. 55							

Stars Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	19	76. 45. 12	78. 21. 6	79. 57. 23	81. 34. 2	83. 11. 4	84. 48. 29	86. 26. 17	88. 4. 29
	20	89. 43. 5	91. 22. 4	93. 1. 29	94. 41. 18	96. 21. 31	98. 2. 9	99. 43. 11	101. 24. 39
	21	103. 6. 31	104. 48. 48	106. 31. 30	108. 14. 38	109. 58. 10			
α Aquilæ.	21	- - -	- - -	- - -	- - -	65. 33. 17	67. 1. 35	68. 30. 38	70. 0. 24
	22	71. 30. 53	73. 2. 3	74. 33. 50	76. 6. 13	77. 39. 14	79. 12. 47	80. 46. 51	82. 21. 25
	23	83. 56. 26	85. 31. 53	87. 7. 43	88. 43. 55	90. 20. 29			
Fomalhaut.	23	- - -	- - -	- - -	- - -	55. 59. 29	57. 43. 25	59. 27. 59	61. 13. 7
	24	62. 58. 48	64. 44. 59	66. 31. 36	68. 18. 39	70. 6. 6	71. 53. 53	73. 41. 59	75. 30. 22
	25	77. 19. 0	79. 7. 51	80. 56. 52	82. 46. 2	84. 35. 20	86. 24. 43	88. 14. 9	90. 3. 38
α Arietis.	26	91. 53. 8							
	27	32. 32. 20	34. 14. 0	35. 56. 39	37. 40. 10	39. 24. 27	41. 9. 26	42. 54. 58	44. 41. 1
	28	46. 27. 25	48. 14. 3	50. 0. 51	51. 47. 49	53. 34. 52	55. 21. 56	57. 8. 59	58. 55. 56
Aldebaran.	28	60. 42. 42							
	29	28. 1. 38	29. 53. 0	31. 44. 2	33. 34. 43	35. 25. 2	37. 14. 59	39. 4. 33	40. 53. 44
	30	42. 42. 31	44. 30. 53	46. 18. 50	48. 6. 21	49. 53. 26	51. 40. 5	53. 26. 17	55. 12. 2
D. I		56. 57. 21	58. 42. 12	60. 26. 36	62. 10. 33	63. 54. 3	65. 37. 6	67. 19. 41	69. 1. 49
		70. 43. 30							

CONFIGURATIONS of the SATELLITES of JUPITER
at VI o'Clock in the *Evening*.

1		4.		2. 3.	○	1.	
2		4.		3.	1 2 Q		
3		4.		3.	○	2	1
4	2	4.		3.	○	1	
5			4.	2.	1. ○		3.
6				4.	○	1 2	3.
7				1.	○	2. 3.	
8				2. 3.	○	1.	4.
9			3.		1 2 ○		4.
10			3.		○	1.	2. 4.
11	1. ○			3.	○	2.	4.
12			2.		1. ○	3.	4.
13					○	2. 1	3. 4.
14				1.	○	4. 2. 3.	
15				3.	3 4 ○	1.	
16			3 4	2. 1	○		
17		4.		3.	○	1.	2.
18		4.		3.	1. ○	2.	
19		4.		2.	○	3.	1
20		4.			○	1.	3. 2. ○
21		4.		1.	○	2. 3.	
22	3. ○		4.	2.	○	1.	
23			3.	2. 1	4. ○		
24			3.		○	1. 2. 4.	
25				3. 1	○	2.	4.
26	1			2.	○	3.	4.
27	2. ○				○	1. 3.	4.
28				1.	○	2. 3.	4.
29	2				○	1. 3.	4.
30				3. 1.	○		4.

Days of the Week.	Days of the Month.	Sundays, Holidays, Terms, &c.	Phases of the MOON.
			D. H. M.
			<i>☾</i> Last Quarter ----- 2. 19. 39 <i>☉</i> New Moon ----- 10. 23. 17 <i>☽</i> First Quarter ----- 18. 19. 29 <i>☾</i> Full Moon ----- 25. 10. 22
			Other Phenomena.
			D. H. M.
Tu.	1		4. - - - ☿ 4 ad ζ = diff. Lat. 5'.
W.	2		8. 41 ☽ c ♄
Th.	3		10. - - - ☿ β m diff. Lat. 25'.
F.	4		11. - - - ☿ γ m diff. Lat. 20'.
Sa.	5		14. 22. 6 ☽ 4
Sun.	6	2d Sunday in Advent.	15. 20. 33 ☽ γ ♄
M.	7	[Nicholas.	23. 54 ☽ δ ♄
Tu.	8	Conception of V. Mary.	16. 9. 42 ☽ ι ♄
W.	9		17. 18. 16 ☽ ι ad ↓ ♄
Th.	10		19. 4 ☽ 2 ad ↓ ♄
F.	11		19. 11 ☽ 3 ad ↓ ♄
Sa.	12		18. 17. 2 ☽ 33 ♄
Sun.	13	3d Sunday in Advent.	21. 7. 15 ☉ enters ♄
M.	14	[Lucy.	10. 47 ☽ 2 ad ξ Ceti.
Tu.	15		18. 6 ☽ μ Ceti.
W.	16	O. Sap. Camb' T. ends.	23. 10. 17 ☽ ι ad δ 8
Th.	17	Oxford Term ends.	10. 43 1/4 I. 2 ad δ 8 * 11' N. 1/4 S. C.
F.	18		11. 2 1/2 E.
Sa.	19		12. 50 ☽ ε 8
Sun.	20	4th Sunday in Advent.	24. 14. 47 ☽ ζ 8
M.	21	St. Thomas.	25. 4. 35 ☽ η II
Tu.	22		7. 34 ☽ μ II
W.	23		26. 4. 51 ☽ δ II
Th.	24		30. - - - ☿ λ m diff. Lat. 44'.
F.	25	Christmas-Day,	31. 15. 57 ☽ c ♄
Sa.	26	St. Stephen.	
Sun.	27	1st Su. aft. Christ. St. John.	
M.	28	Innocents.	
Tu.	29		
W.	30		
Th.	31	Silvester.	

Days of the Week.	Days of the Month.	THE S U N ' s			Equation of Time. <i>Sub.</i>	Diff.
		Longitude.	R ^t . Ascen. <i>in Time.</i>	Declin. <i>South</i>		
		S. D. M. S.	H. M. S.	D. M. S.		
Tu.	1	8. 9. 20. 12	16. 30. 36, 2	21. 52. 27	10. 35, 3	23, 1
W.	2	8. 10. 21. 6	16. 34. 55, 9	22. 1. 27	10. 12, 2	23, 8
Th.	3	8. 11. 22. 2	16. 39. 16, 3	22. 10. 2	9. 48, 4	24, 4
F.	4	8. 12. 22. 59	16. 43. 37, 4	22. 18. 12	9. 24, 0	25, 0
Sa.	5	8. 13. 23. 58	16. 47. 59, 1	22. 25. 56	8. 59, 0	25, 6
Sun.	6	8. 14. 24. 58	16. 52. 21, 3	22. 33. 13	8. 33, 4	26, 2
M.	7	8. 15. 26. 0	16. 56. 44, 0	22. 40. 3	8. 7, 2	26, 6
Tu.	8	8. 16. 27. 2	17. 1. 7, 2	22. 46. 27	7. 40, 6	27, 1
W.	9	8. 17. 28. 6	17. 5. 30, 9	22. 52. 24	7. 13, 5	27, 5
Th.	10	8. 18. 29. 10	17. 9. 55, 0	22. 57. 54	6. 46, 0	27, 9
F.	11	8. 19. 30. 15	17. 14. 19, 5	23. 2. 57	6. 18, 1	28, 3
Sa.	12	8. 20. 31. 21	17. 18. 44, 5	23. 7. 32	5. 49, 8	28, 6
Sun.	13	8. 21. 32. 28	17. 23. 9, 8	23. 11. 40	5. 21, 2	29, 0
M.	14	8. 22. 33. 35	17. 27. 35, 4	23. 15. 20	4. 52, 2	29, 2
Tu.	15	8. 23. 34. 43	17. 32. 1, 3	23. 18. 32	4. 23, 0	29, 4
W.	16	8. 24. 35. 51	17. 36. 27, 3	23. 21. 15	3. 53, 6	29, 5
Th.	17	8. 25. 36. 59	17. 40. 53, 5	23. 23. 31	3. 24, 1	29, 7
F.	18	8. 26. 38. 7	17. 45. 19, 8	23. 25. 19	2. 54, 4	29, 9
Sa.	19	8. 27. 39. 16	17. 49. 46, 3	23. 26. 38	2. 24, 5	29, 9
Sun.	20	8. 28. 40. 24	17. 54. 12, 9	23. 27. 29	1. 54, 6	30, 0
M.	21	8. 29. 41. 33	17. 58. 39, 5	23. 27. 52	1. 24, 6	30, 0
Tu.	22	9. 0. 42. 41	18. 3. 6, 2	23. 27. 46	0. 54, 6	30, 0
W.	23	9. 1. 43. 50	18. 7. 32, 8	23. 27. 12	0. 24, 6	30, 0
Th.	24	9. 2. 44. 59	18. 11. 59, 3	23. 26. 10	Add. 5, 4	29, 8
F.	25	9. 3. 46. 8	18. 16. 25, 8	23. 24. 39	0. 35, 2	29, 8
Sa.	26	9. 4. 47. 17	18. 20. 52, 2	23. 22. 41	1. 5, 0	29, 6
Sun.	27	9. 5. 48. 27	18. 25. 18, 5	23. 20. 14	1. 34, 6	29, 4
M.	28	9. 6. 49. 36	18. 29. 44, 6	23. 17. 19	2. 4, 0	29, 2
Tu.	29	9. 7. 50. 46	18. 34. 10, 5	23. 13. 56	2. 33, 2	29, 0
W.	30	9. 8. 51. 56	18. 38. 36, 1	23. 10. 5	3. 2, 2	28, 9
Th.	31	9. 9. 53. 7	18. 43. 1, 6	23. 5. 46	3. 31, 1	

Days	Time of ☉'s Semidiam. pass ^s Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 10. 2	16. 17. 1	2. 32. 2	9. 993609	3. 22. 13
7	1. 10. 7	16. 17. 9	2. 32. 5	9. 993282	3. 21. 54
13	1. 11. 0	16. 18. 5	2. 32. 7	9. 993010	3. 21. 35
19	1. 11. 1	16. 19. 0	2. 32. 8	9. 992799	3. 21. 16
25	1. 11. 2	16. 19. 2	2. 32. 9	9. 992667	3. 20. 57

ECLIPSES of the SATELLITES of JUPITER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emerfions.</i>		<i>Emerfions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	16. 53. 12	2	19. 47. 38	6	18. 11. 30 Im.
3	11. 21. 23	6	9. 4. 8	6	21. 45. 9 E.
* 5	5. 49. 33	9	22. 20. 31	13	22. 9. 36 Im.
7	0. 17. 40	13	11. 36. 48	14	1. 43. 6 E.
8	18. 45. 48	17	0. 53. 3	21	2. 7. 27 Im.
10	13. 13. 52	20	14. 9. 17	* 21	5. 40. 49 E.
12	7. 41. 55	24	3. 25. 33	28	6. 5. 12 Im.
14	2. 9. 55	27	16. 41. 51	28	9. 38. 25 E.
15	20. 37. 55	31	5. 58. 12		
17	15. 5. 54				
19	9. 33. 53				
21	4. 1. 51				
22	22. 29. 48				
24	16. 57. 44				
26	11. 25. 41				
28	5. 53. 38				
30	0. 21. 35				
31	18. 49. 33				
				IV. Satellite.	
				2	1. 36. 45 Im.
				* 2	6. 20. 41 E.
				18	19. 41. 7 Im.
				19	0. 26. 0 E.

THE PLANETS							
Days	Heliocentric		Geocentric		Declin.	Passage Merid.	
	Long.	Lat.	Long.	Lat.			
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
♿ MERCURY. Gr. Elong. 2 ^d .							
1	4.28.4	6.51 N	7.18.56	2.27 N	15.7 S	22.38	
4	5.12.9	6.17	7.22.1	2.12	16.10	22.38	
7	5.24.55	5.27	7.25.36	1.53	17.21	22.39	
10	6.6.34	4.27	7.29.32	1.32	18.35	22.42	
13	6.17.17	3.22	8.3.42	1.9	19.47	22.46	
16	6.27.15	2.15	8.8.0	0.46	20.54	22.51	
19	7.6.38	1.8	8.12.24	0.23	21.55	22.56	
22	7.15.34	0.3 N	8.16.53	0.1 N	22.48	23.2	
25	7.24.10	1.0 S	8.21.25	0.20 S	23.32	23.8	
28	8.2.33	2.1	8.26.0	0.40	24.4	23.15	
31	8.10.49	2.57	9.0.38	0.58	24.25	23.22	
♀ VENUS. Gr. Elong. 2 ^d .							
1	9.6.42	1.16 S	8.20.55	0.33 S	23.42 S	0.50	
7	9.16.11	1.46	8.28.27	0.47	24.14	0.56	
13	9.25.40	2.13	9.5.58	0.59	24.19	1.3	
19	10.5.9	2.37	9.13.30	1.10	23.57	1.9	
25	10.14.39	2.56	9.21.1	1.20	23.8	1.15	
♂ MARS. Gr. Elong. 2 ^d .							
1	5.18.5	1.36 N	6.16.23	1.18 N	5.15 S	20.30	
7	5.20.44	1.34	6.20.2	1.17	6.39	20.17	
13	5.23.23	1.31	6.23.39	1.17	8.0	20.4	
19	5.26.3	1.28	6.27.15	1.16	9.18	19.51	
25	5.28.43	1.24	7.0.49	1.15	10.36	19.38	
♃ JUPITER. Gr. Elong. 2 ^d .							
1	10.13.46	0.45 S	10.4.33	0.41 S	19.48 S	3.57	
7	10.14.17	0.45	10.5.41	0.41	19.32	3.36	
13	10.14.49	0.46	10.6.51	0.41	19.15	3.14	
19	10.15.21	0.47	10.8.5	0.41	18.56	2.53	
25	10.15.53	0.47	10.9.23	0.41	18.35	2.31	
♄ SATURN. Gr. Elong. 2 ^d .							
1	2.10.9	1.40 S	2.10.15	1.52 S	20.10 N	12.2	
7	2.10.22	1.40	2.9.45	1.51	20.6	11.34	
13	2.10.36	1.39	2.9.16	1.51	20.2	11.6	
19	2.10.49	1.39	2.8.48	1.50	19.58	10.38	
25	2.11.3	1.39	2.8.22	1.49	19.55	10.9	
♅ GEORGIAN. Gr. Elong. 2 ^d .							
1	5.4.59	0.46 N	5.8.5	0.46 N	9.16 N	18.6	
11	5.5.6	0.46	5.8.9	0.46	9.15	17.23	
21	5.5.14	0.46	5.8.7	0.47	9.16	16.39	
31	5.5.22	0.46	5.8.0	0.47	9.19	15.54	

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Days of the Week.	Days of the Month.	THE MOON'S							
		Longitude.				Latitude.			
		Noon.		Midnight.		Noon.		Midnight.	
		S. D. M. S.		S. D. M. S.		D. M. S.		D. M. S.	
Tu.	1	4. 17. 19.	8	4. 24. 0.	57	2 19. 21 N		2. 50. 52 N	
W.	2	5. 0. 36.	21	5. 7. 5.	43	3. 19. 35		3. 45. 18	
Th.	3	5. 13. 29.	35	5. 19. 48.	26	4. 7. 47		4. 26. 55	
F.	4	5. 26. 2.	46	6. 2. 13.	10	4. 42. 42		4. 54. 57	
Sa.	5	6. 8. 20.	7	6. 14. 24.	9	5. 3. 45		5. 9. 3	
Sun.	6	6. 20. 25.	43	6. 26. 25.	18	5. 10. 53		5. 9. 17	
M.	7	7. 2. 23.	17	7. 8. 20.	6	5. 4. 21		4. 56. 7	
Tu.	8	7. 14. 16.	3	7. 20. 11.	28	4. 44. 43		4. 30. 16	
W.	9	7. 26. 6.	38	8. 2. 1.	49	4. 12. 55		3. 52. 49	
Th.	10	8. 7. 57.	14	8. 13. 53.	8	3. 30. 10		3. 5. 12	
F.	11	8. 19. 49.	42	8. 25. 47.	8	2. 38. 8		2. 9. 14	
Sa.	12	9. 1. 45.	40	9. 7. 45.	31	1. 38. 47		1. 7. 7	
Sun.	13	9. 13. 46.	54	9. 19. 50.	7	0. 34. 30 N		0. 1. 19 N	
M.	14	9. 25. 55.	22	10. 2. 3.	3	0. 32. 7 S		1. 5. 25 S	
Tu.	15	10. 8. 13.	26	10. 14. 26.	57	1. 38. 13		2. 10. 9	
W.	16	10. 20. 43.	57	10. 27. 4.	50	2. 40. 49		3. 9. 50	
Th.	17	11. 3. 30.	1	11. 9. 59.	54	3. 36. 49		4. 1. 20	
F.	18	11. 16. 34.	53	11. 23. 15.	15	4. 23. 0		4. 41. 26	
Sa.	19	0. 0. 1.	20	0. 6. 53.	21	4. 56. 14		5. 7. 2	
Sun.	20	0. 13. 51.	23	0. 20. 55.	23	5. 13. 32		5. 15. 23	
M.	21	0. 28. 5.	13	1. 5. 20.	34	5. 12. 25		5. 4. 27	
Tu.	22	1. 12. 40.	58	1. 20. 5.	44	4. 51. 25		4. 33. 26	
W.	23	1. 27. 34.	8	2. 5. 5.	7	4. 10. 37		3. 43. 21	
Th.	24	2. 12. 37.	44	2. 20. 10.	45	3. 12. 8		2. 37. 29	
F.	25	2. 27. 43.	4	3. 5. 13.	26	2. 0. 6		1. 20. 45 S	
Sa.	26	3. 12. 40.	49	3. 20. 4.	11	0. 40. 16 S		0. 0. 35 N	
Sun.	27	3. 27. 22.	42	4. 4. 35.	36	0. 41. 0 N		1. 20. 14	
M.	28	4. 11. 42.	24	4. 18. 42.	40	1. 57. 42		2. 32. 47	
Tu.	29	4. 25. 36.	15	5. 2. 23.	5	3. 5. 5		3. 34. 14	
W.	30	5. 9. 3.	18	5. 15. 37.	4	3. 59. 57		4. 22. 6	
Th.	31	5. 22. 4.	47	5. 28. 26.	47	4. 40. 32		4. 55. 12	

Days of the Week.	Days of the Month.	THE M O O N ' s					
		Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight.	Noon.	Midnight.
				D.M.	D.M.	D.M.	D.M.
Tu.	1	21	17. 27	140. 30	147. 19	17. 52 N	16. 13 N
W.	2	22	18. 15	153. 53	160. 14	14. 23	12. 24
Th.	3	23	19. 0	166. 24	172. 24	10. 18	8. 8
F.	4	24	19. 43	178. 15	184. 0	5. 54	3. 37 N
Sa.	5	25	20. 24	189. 39	195. 15	1. 20 N	0. 56 S
Sun.	6	26	21. 6	200. 49	206. 22	3. 11 S	5. 24
M.	7	27	21. 48	211. 57	217. 34	7. 33	9. 37
Tu.	8	28	22. 31	223. 14	228. 59	11. 36	13. 28
W.	9	29	23. 15	234. 49	240. 44	15. 12	16. 47
Th.	10	1	0	246. 46	252. 54	18. 12	19. 26
F.	11	2	0. 2	259. 9	265. 29	20. 27	21. 15
Sa.	12	3	0. 51	271. 54	278. 23	21. 48	22. 7
Sun.	13	4	1. 40	284. 55	291. 28	22. 10	21. 58
M.	14	5	2. 29	298. 1	304. 34	21. 30	20. 47
Tu.	15	6	3. 18	311. 6	317. 35	19. 48	18. 35
W.	16	7	4. 7	324. 1	330. 25	17. 8	15. 28
Th.	17	8	4. 55	336. 46	343. 5	13. 36	11. 33
F.	18	9	5. 43	349. 23	355. 40	9. 20	6. 59
Sa.	19	10	6. 31	1. 59	8. 21	4. 31 S	1. 58 S
Sun.	20	11	7. 19	14. 47	21. 18	0. 40 N	3. 18 N
M.	21	12	8. 10	27. 57	34. 45	5. 56	8. 32
Tu.	22	13	9. 4	41. 44	48. 54	11. 2	13. 24
W.	23	14	10. 1	56. 16	63. 50	15. 34	17. 30
Th.	24	15	11. 1	71. 36	79. 31	19. 9	20. 29
F.	25	16	12. 4	87. 33	95. 38	21. 26	22. 0
Sa.	26	17	13. 6	103. 43	111. 43	22. 11	21. 58
Sun.	27	18	14. 6	119. 35	127. 16	21. 22	20. 26
M.	28	19	15. 2	134. 44	141. 58	19. 10	17. 39
Tu.	29	20	15. 54	148. 57	155. 41	15. 54	13. 58
W.	30	21	16. 42	162. 11	168. 29	11. 53	9. 42
Th.	31	22	17. 27	174. 35	180. 32	7. 26	5. 7

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Days of the Week.	Days of the Month.	THE MOON'S				Proportional	
		Semidiameter.		Hor. Parallax.		Logarithm.	
		Noon.	Midnight.	Noon.	Midnight.	Noon.	Midn.
		M. S.	M. S.	M. S.	M. S.		
Tu.	1	15. 51	15. 43	58. 9	57. 40	4907	4943
W.	2	15. 35	15. 28	57. 12	56. 45	4979	5013
Th.	3	15. 21	15. 15	56. 20	55. 57	5045	5075
F.	4	15. 9	15. 4	55. 37	55. 18	5100	5125
Sa.	5	15. 0	14. 55	55. 1	54. 46	5148	5167
Sun.	6	14. 52	14. 50	54. 34	54. 25	5183	5195
M.	7	14. 48	14. 46	54. 18	54. 12	5205	5213
Tu.	8	14. 45	14. 44	54. 7	54. 5	5219	5222
W.	9	14. 44	14. 44	54. 4	54. 5	5223	5222
Th.	10	14. 45	14. 46	54. 7	54. 10	5219	5215
F.	11	14. 47	14. 49	54. 15	54. 21	5209	5201
Sa.	12	14. 51	14. 53	54. 28	54. 36	5191	5181
Sun.	13	14. 55	14. 58	54. 45	54. 56	5169	5154
M.	14	15. 1	15. 5	55. 7	55. 20	5140	5123
Tu.	15	15. 9	15. 13	55. 35	55. 51	5103	5082
W.	16	15. 18	15. 23	56. 8	56. 26	5060	5037
Th.	17	15. 28	15. 34	56. 46	57. 7	5012	4985
F.	18	15. 40	15. 46	57. 28	57. 51	4958	4930
Sa.	19	15. 52	15. 59	58. 15	58. 40	4900	4869
Sun.	20	16. 6	16. 12	59. 4	59. 28	4839	4810
M.	21	16. 18	16. 24	59. 50	60. 11	4783	4758
Tu.	22	16. 29	16. 34	60. 30	60. 46	4735	4716
W.	23	16. 37	16. 40	60. 59	61. 8	4700	4690
Th.	24	16. 41	16. 41	61. 13	61. 13	4684	4684
F.	25	16. 40	16. 38	61. 9	61. 1	4689	4698
Sa.	26	16. 34	16. 29	60. 48	60. 31	4714	4734
Sun.	27	16. 24	16. 17	60. 10	59. 46	4759	4788
M.	28	16. 10	16. 3	59. 20	58. 53	4820	4853
Tu.	29	15. 55	15. 47	58. 24	57. 55	4889	4924
W.	30	15. 39	15. 32	57. 27	56. 59	4960	4995
Th.	31	15. 25	15. 18	56. 33	56. 8	5028	5060

Stars Names.	Days	Noon.	III ^h .	V th .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
	18	-	-	-	-	73. 21. 4	71. 40. 25	69. 59. 25	68. 18. 5
	19	66. 36. 24	64. 54. 22	63. 11. 58	61. 29. 13	59. 46. 7	58. 2. 38	56. 18. 48	54. 34. 36
Aldebaran.	20	52. 50. 3	51. 5. 8	49. 19. 51	47. 34. 13	45. 48. 13	44. 1. 52	42. 15. 9	40. 28. 6
	21	38. 40. 42	36. 52. 57	35. 4. 52	33. 16. 28	31. 27. 43	29. 38. 41	27. 49. 22	25. 59. 46
	22	24. 9. 52							
	22	68. 34. 34	66. 44. 58	64. 55. 5	63. 4. 57	61. 14. 34	59. 23. 58	57. 33. 10	55. 42. 12
Pollux.	23	53. 51. 5	51. 59. 50	50. 8. 27	48. 17. 0	46. 25. 28	44. 33. 55	42. 42. 20	40. 50. 45
	24	38. 59. 12							
	24	74. 25. 11	72. 31. 54	70. 38. 36	68. 45. 17	66. 51. 57	64. 58. 39	63. 5. 25	61. 12. 14
Regulus.	25	59. 19. 7	57. 26. 7	55. 33. 16	53. 40. 33	51. 47. 59	49. 55. 35	48. 3. 25	46. 11. 28
	26	44. 19. 44	42. 28. 18	40. 37. 9	38. 46. 17	36. 55. 43	35. 5. 29	33. 15. 37	31. 26. 8
	27	29. 37. 2	27. 48. 21	26. 0. 6	24. 12. 19	22. 25. 0			
	27	-	-	-	-	76. 27. 34	74. 40. 48	72. 54. 29	71. 8. 35
	28	69. 23. 8	67. 38. 8	65. 53. 35	64. 9. 29	62. 25. 52	60. 42. 43	59. 0. 3	57. 17. 51
	29	55. 36. 9	53. 54. 56	52. 14. 13	50. 34. 1	48. 54. 18	47. 15. 5	45. 36. 24	43. 58. 14
Spica μ	30	42. 20. 35	40. 43. 28	39. 6. 53	37. 30. 52	35. 55. 24	34. 20. 28	32. 46. 9	31. 12. 28
	31	29. 39. 25	28. 6. 56	26. 35. 13	25. 4. 22	23. 34. 24	22. 5. 22	20. 37. 27	19. 10. 38
	J. 1	17. 44. 59							
	30	119. 43. 51	118. 12. 33	116. 41. 39	115. 11. 10	113. 41. 5	112. 11. 24	110. 42. 6	109. 13. 11
The Sun.	31	107. 44. 39	106. 16. 30	104. 48. 43	103. 21. 18	101. 54. 14	100. 27. 30	99. 4. 6	97. 55. 2
	J. 1	96. 9. 17							

DISTANCES of MOON's Center from SUN, and from STARS EAST of her.

Stars Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Spica η	1	63.48.9	62.7.52	60.28.1	58.48.39	57.9.43	55.34.16	53.53.17	52.15.45
	2	50.38.41	49.2.4	47.25.55	45.50.13	44.14.36	42.40.10	41.5.49	39.31.55
	3	37.38.28							
The Sun.	4	111.59.55	110.26.26	108.53.22	107.20.43	105.48.30	104.16.42	102.45.18	101.14.19
	2	99.43.45	98.13.35	96.43.48	95.14.24	93.45.22	92.16.42	90.48.23	89.20.25
	3	87.52.47	86.25.29	84.58.30	83.31.51	82.5.30	80.39.28	79.13.42	77.48.14
	4	76.23.2	74.58.6	73.33.24	72.8.57	70.44.45	69.20.46	67.57.0	66.33.26
	5	65.10.5	63.46.55	62.23.56	61.1.8	59.38.30	58.16.1	56.53.41	55.31.30
	6	54.9.27	52.47.32	51.25.44	50.4.3	48.42.28	47.20.59	45.59.36	44.38.18
	7	43.17.6	41.55.58	40.34.54	39.13.53	37.52.56			
α Pegasi.	12	-	-	-	-	73.29.56	72.8.0	70.40.6	69.24.14
	13	68.2.23	66.40.39	65.19.1	63.57.31	62.36.8	61.14.53	59.53.49	58.32.57
	14	57.12.18	55.51.53	54.31.45	53.11.56	51.52.24			
α Arieus.	14	-	-	-	-	92.54.18	91.24.48	89.55.8	88.25.18
	15	86.55.18	85.25.8	83.54.47	82.24.17	80.53.37	79.22.46	77.51.46	76.20.36
	16	74.49.16	73.17.46	71.46.7	70.14.18	68.42.19	67.10.10	65.37.53	64.5.27
	17	62.32.52	61.0.8	59.27.17	57.54.20	56.21.15	54.48.3	53.14.47	51.41.27
	18	50.8.4	48.34.41	47.1.17	45.27.56	43.54.37			

Stars Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.		D. M. S.	
Aldebaran.	18	-	-	-	-	-	-	-	-	73. 21. 4	-	71. 40. 25	-	69. 59. 25	-	68. 18. 5	-
	19	66. 36. 24	-	64. 54. 22	-	63. 11. 58	-	61. 29. 13	-	59. 46. 7	-	58. 2. 38	-	56. 18. 48	-	54. 34. 36	-
	20	52. 50. 3	51. 5. 8	51. 5. 8	49. 19. 51	47. 34. 13	45. 48. 13	44. 1. 52	42. 15. 9	40. 28. 6	38. 42. 15	36. 52. 57	35. 4. 52	33. 16. 28	31. 27. 43	29. 38. 41	27. 49. 22
	21	38. 40. 42	36. 52. 57	35. 4. 52	33. 16. 28	31. 27. 43	29. 38. 41	27. 49. 22	25. 59. 46	23. 42. 15	21. 28. 48	19. 19. 38	17. 10. 38	14. 52. 12	12. 42. 20	10. 50. 45	8. 52. 12
	22	24. 9. 52	22. 4. 52	20. 34. 36	18. 45. 17	16. 58. 36	15. 33. 16	13. 40. 33	11. 47. 59	9. 55. 35	8. 3. 25	6. 5. 25	4. 3. 25	2. 15. 37	1. 12. 14	1. 12. 14	1. 12. 14
Pollux.	23	68. 34. 34	66. 44. 58	64. 55. 5	63. 4. 57	61. 14. 34	59. 23. 58	57. 33. 10	55. 42. 12	53. 51. 57	51. 47. 59	49. 55. 35	48. 3. 25	46. 11. 28	44. 1. 52	42. 15. 9	40. 28. 6
	24	53. 51. 5	51. 59. 50	50. 8. 27	48. 17. 0	46. 25. 28	44. 33. 55	42. 42. 20	40. 50. 45	38. 58. 39	36. 55. 43	35. 5. 29	33. 15. 37	31. 26. 8	29. 38. 41	27. 49. 22	25. 59. 46
	25	38. 59. 12	36. 52. 57	35. 4. 52	33. 16. 28	31. 27. 43	29. 38. 41	27. 49. 22	25. 59. 46	23. 42. 15	21. 28. 48	19. 19. 38	17. 10. 38	14. 52. 12	12. 42. 20	10. 50. 45	8. 52. 12
	26	74. 25. 11	72. 31. 54	70. 38. 36	68. 45. 17	66. 51. 57	64. 58. 39	62. 25. 52	60. 42. 43	58. 59. 48	57. 33. 10	55. 42. 12	53. 51. 57	51. 47. 59	49. 55. 35	48. 3. 25	46. 11. 28
	27	59. 19. 7	57. 26. 7	55. 33. 16	53. 40. 33	51. 47. 59	49. 55. 35	48. 3. 25	46. 11. 28	44. 1. 52	42. 15. 9	40. 28. 6	38. 42. 15	36. 52. 57	35. 4. 52	33. 16. 28	31. 27. 43
Regulus.	28	44. 19. 44	42. 28. 18	40. 37. 9	38. 46. 17	36. 55. 43	35. 5. 29	33. 15. 37	31. 26. 8	29. 38. 41	27. 49. 22	25. 59. 46	23. 42. 15	21. 28. 48	19. 19. 38	17. 10. 38	14. 52. 12
	29	29. 37. 2	27. 48. 21	26. 0. 6	24. 12. 19	22. 25. 0	20. 34. 36	18. 45. 17	16. 58. 36	15. 33. 16	13. 40. 33	11. 47. 59	9. 55. 35	8. 3. 25	6. 5. 25	4. 3. 25	2. 15. 37
	30	69. 23. 8	67. 38. 8	65. 53. 35	64. 9. 29	62. 25. 52	60. 42. 43	58. 59. 48	57. 33. 10	55. 42. 12	53. 51. 57	51. 47. 59	49. 55. 35	48. 3. 25	46. 11. 28	44. 1. 52	42. 15. 9
	31	55. 36. 9	53. 54. 56	52. 14. 13	50. 34. 1	48. 54. 18	47. 15. 5	45. 36. 24	43. 58. 14	42. 15. 9	40. 28. 6	38. 42. 15	36. 52. 57	35. 4. 52	33. 16. 28	31. 27. 43	29. 38. 41
	32	42. 20. 35	40. 43. 28	39. 6. 53	37. 30. 52	35. 55. 24	34. 20. 28	32. 46. 9	31. 12. 28	29. 38. 41	27. 49. 22	25. 59. 46	23. 42. 15	21. 28. 48	19. 19. 38	17. 10. 38	14. 52. 12
Spica μ .	33	29. 39. 25	28. 6. 56	26. 35. 13	25. 4. 22	23. 34. 24	21. 23. 52	19. 12. 24	17. 1. 5	14. 51. 5	12. 41. 5	10. 31. 5	8. 21. 5	6. 11. 5	4. 1. 5	2. 1. 5	1. 1. 5
The Sun.	30	119. 43. 51	118. 12. 33	116. 41. 39	115. 11. 10	113. 41. 5	112. 11. 24	110. 42. 6	109. 13. 11	107. 44. 39	106. 16. 30	104. 48. 43	103. 21. 18	101. 54. 14	100. 27. 30	99. 1. 6	97. 35. 2
	31	107. 44. 39	106. 16. 30	104. 48. 43	103. 21. 18	101. 54. 14	100. 27. 30	99. 1. 6	97. 35. 2	95. 9. 17	93. 42. 3	91. 14. 3	89. 46. 3	87. 18. 3	85. 0. 3	82. 52. 3	80. 24. 3
	J. 1	96. 9. 17	94. 41. 3	92. 13. 3	90. 45. 3	88. 17. 3	86. 49. 3	84. 21. 3	82. 53. 3	80. 25. 3	78. 57. 3	76. 29. 3	74. 1. 3	71. 33. 3	69. 5. 3	67. 37. 3	65. 9. 3

DISTANCES of MOON's *Center* from SUN, and from STARS *WEST* of her.

[illegible]

Stars Names.	Days	Noon.	III ^b .	VI ^b .	IX ^b .	Midnight.	XV ^b .	XVIII ^b .	XXI ^b .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	20	105. 7. 6	106. 44. 26	108. 22. 8	110. 0. 12	111. 38. 38	113. 17. 26	114. 56. 36	116. 36. 7
	21	118. 16. 0	119. 56. 14	121. 36. 48	-	-	-	-	-
	18	-	-	-	-	62. 12. 38	63. 36. 0	65. 0. 6	66. 24. 54
α Aquilæ.	19	67. 50. 23	69. 16. 32	70. 43. 17	72. 10. 40	73. 38. 38	75. 7. 10	76. 36. 14	78. 5. 49
	20	79. 35. 54	81. 6. 27	82. 37. 25	84. 8. 48	85. 40. 35	-	-	-
	20	-	-	-	-	50. 53. 27	52. 31. 42	54. 10. 38	55. 50. 14
Fomalhaut.	21	57. 30. 28	59. 11. 18	60. 52. 43	62. 34. 42	64. 17. 12	66. 0. 12	67. 43. 41	69. 27. 37
	22	71. 11. 58	72. 56. 43	74. 41. 51	76. 27. 20	78. 13. 9	79. 59. 17	81. 45. 43	83. 32. 25
	23	85. 19. 21	87. 6. 30	88. 53. 49	90. 41. 18	92. 28. 55	-	-	-
α Arietis.	23	-	-	-	-	33. 7. 0	34. 47. 14	36. 28. 33	38. 10. 51
	24	39. 54. 3	41. 38. 6	43. 22. 46	45. 8. 3	46. 53. 57	48. 40. 11	50. 26. 46	52. 13. 40
	25	54. 0. 50	55. 48. 12	57. 35. 39	59. 23. 11	61. 10. 44	-	-	-
Aldebaran.	25	-	-	-	-	28. 31. 43	30. 24. 4	32. 16. 15	34. 8. 14
	26	36. 0. 0	37. 51. 32	39. 42. 51	41. 33. 52	43. 24. 39	45. 15. 7	47. 5. 15	48. 55. 4
	27	50. 44. 34	52. 33. 42	54. 22. 27	56. 10. 50	57. 58. 50	59. 46. 26	61. 33. 38	63. 20. 25
Pollux.	28	65. 6. 47	66. 52. 43	68. 38. 14	70. 23. 18	72. 7. 57	73. 52. 9	75. 35. 54	77. 19. 12
	29	79. 2. 3	-	-	-	-	-	-	-
	29	35. 14. 21	36. 54. 51	38. 35. 3	40. 14. 56	41. 54. 30	43. 33. 44	45. 12. 37	46. 51. 10
Pollux.	30	48. 29. 22	50. 7. 11	51. 44. 37	53. 21. 42	54. 58. 26	56. 34. 48	58. 10. 49	59. 46. 30
	31	61. 21. 49	62. 56. 47	64. 31. 24	66. 5. 42	67. 39. 40	69. 13. 18	70. 46. 38	72. 19. 39
	J. 1	73. 52. 21	-	-	-	-	-	-	-

CONFIGURATIONS of the SATELLITES of JUPITER
at V o'Clock in the *Evening*.

1			3.		○	² 1 6 4
2		4 ●		³ 1	○	² 3.
3			4.	2.	○	³ 1.
4			4.		² ○	³
5		⁵ .			1. ○	² 3.
6		⁴			○	¹ 3.
7		⁴		² 3. 1.	○	
8			⁴ 3.		○	² 1
9			³ ⁴ ¹		○	²
10		3. ○ 4. ○		2.	○	1.
11				² 1	○	⁴ 3.
12		1 ●			○	² 3. ⁴
13					○	¹ 3. ⁴
14				2. 3. 1.	○	
15		2. ○		3.	○	¹ 4.
16			³	¹	○	2. 4.
17				² ³	○	1. 4.
18				² 1	○	³ 4.
19				4.	○	1. ² ³
20		1. ○		4.	○	2. 3.
21			4.	2. 1.	○	
22			⁴	3.	○	¹
23		⁴	³	1.	○	2.
24		⁴		³ 2.	○	1.
25			⁴	² 1	○	³
26				⁴	○	1. ² ³
27					¹ ○	⁴ 2. 3.
28		1 ● 3 ●		2.	○	⁴
29			3.		² ○	¹ ⁴
30			³	1.	○	² ⁴
31		2 ●		³	○	¹

EXPLANATION AND USE OF THE ARTICLES

CONTAINED IN THE
ASTRONOMICAL and NAUTICAL EPHEMERIS.

IT may be proper first to premise, that all the Calculations of the *Ephemeris* are made according to apparent Time by the Meridian of the *Royal Observatory at Greenwich*: And the Sun's, Planet's, and Moon's Places, with the Particulars depending on them in the II^d, IVth, Vth, VIth, and VIIth Pages of each Month, are computed to the Instant of apparent Noon, or that of the Sun's Center passing the Meridian of *Greenwich*.

Apparent Time, at any Place, is that deduced immediately from the Sun, whether from the Observation of his passing the Meridian, from his Altitude observed at a Distance from the Meridian, or from his observed Rising or Setting. This Time is different from that shewn by Clocks and Watches well regulated at Land, which is called equated or mean Time. This will be explained when we come to treat of the Equation of Time.

The Day is here supposed, according to the Method of Astronomers, to begin at noon or 12 Hours later than the civil Day of the same Denomination, and to be counted up to 24 Hours or the succeeding Noon, when the next Day begins. Thus the Day of the Month and the Hour of the Day are the same in this Method as in the civil Account at Noon, and from Noon till Midnight; but from Midnight till Noon they differ; for whereas in the civil Account a fresh Day is supposed to begin at Midnight, and the Hours to begin over again, in this Method the Day is still continued beyond Midnight, and the Reckoning of the Hours is continued up to 24. Thus the Distances put down to January 10, XV Hours belong to January 11 at Three in the Morning by Civil Reckoning.

There are XII. Pages for every Month. The first Column of the first Page of each Month contains the Day of the Week expressed concisely by the initial Letter or Letters, *Sun.* standing for Sunday, *M.* for Monday, *Tu.* for Tuesday, *W.* for Wednesday, *Th.* for Thursday, *F.* for Friday, and *Sa.* for Saturday: the second the Day

of the Month: the third Column exhibits the Sundays and Festivals of the Church of England, and other remarkable Days: The last Column shews at Top the Moon's Phases, or the Times of New and Full Moon, and of the first and last Quarter or two Quadratures with the Sun: Beneath are contained miscellaneous Phenomena, namely, Eclipses of the Sun and Moon, and Occultations of Planets or fixt Stars not less than the fourth Magnitude, by the Moon, as they should happen at *Greenwich* by the Tables; the Conjunctions of the Moon with all Stars not less than the fourth Magnitude, which can be Occultations, any where on the Globe, between the Latitudes of 60° North and 40° South: The Entrance of the Sun into the several Signs, and any other remarkable Phenomena.

The Stars are expressed by *Bayer's* Characters of Reference. The Conjunction of the Moon or a Planet with a Star is denoted by prefixing the Character of the Moon or Planet to that of the Star, the Time of the Conjunction being placed immediately before. The Case is the same with respect to the Occultation of a Star or Planet by the Moon, only this is further distinguished by the Addition of Im. or Immersion, to signify the Disappearance behind the Moon; and Em. or Emerision, to signify the Re-appearance of the same. Thus $8^d. 16^h. 22'$ D 9 ν s, signifies that the Moon will be in Conjunction with the Star 9 ν s on the Eighth Day at $16^h. 22'$, exclusive of Parallax: And $10^d. 9^h. 14'$ Im. of $\pi. 10^d. 10^h. 23'$ Em. signifies that the Moon will eclipse π on the 10th Day, the Immersion being at $9^h. 14'$, and the Emerision at $10^h. 23'$ apparent Time at *Greenwich*.

The Occultations set down are those only visible at *Greenwich*; the Circumstances of which will commonly not differ very widely in most Parts of the Kingdom; but in very distant Places they will differ very much, owing to the Change of the Moon's Parallax, or it may become no Occultation at all: The like may be said of Eclipses of the Sun.

An Eclipse of the Sun, or Occultation of a fixt Star by the Moon, if observed in a Place whose Latitude and Longitude are well determined, may be applied to the Correction of the Lunar Tables; but if made in a Place whose Latitude only is well known, may be applied to the Determination of the Longitude of the Place; but for this Purpose an accurate Calculation must be made of the Moon's Parallaxes in Longitude and Latitude, which makes this Method of settling the Longitude of Places, though a very accurate one, less convenient in Use for Persons not much versed in astronomical Calculations. However, this ought not to discourage Travellers or Mariners from endeavouring to make these Observations as often and as carefully as possible, when they shall happen to be at any Place whose Longitude they have Reason to think has not been well settled; since the necessary Calculations may be made at any time afterwards by themselves, at Leisure, or referred to the Skill of Astronomers and Mathematicians.

Eclipses of the Moon are not liable to this Inconvenience; the Longitude of any Place, where the Eclipse has been observed, being deduced immediately by taking the Difference of the Time of the Observation and that set down in the *Ephemeris*, and converting it into Degrees, at the Rate of 15° to One Hour, &c. or more briefly by Table XIV. Page 38 of the 2d Edition of the Tables requisite to be used with the *Ephemeris*. But, as the Beginning or Ending of an Eclipse of the Moon cannot be generally observed nearer than One Minute, and sometimes Two or Three Minutes of Time, the Longitudes of Places cannot be certainly determined by this Method from a single Observation of the Beginning or End nearer than a Degree. Even this Point of Exactness will often be of great Service. If both the Beginning and End of the Eclipse be observed, a greater Degree of Exactness will be attained.

The Conjunctions of the Moon with the Planets, or fix Stars not less than the fourth Magnitude, which may prove Occultations in some inhabited Parts of the Globe, are evidently designed to instruct Mariners or Travellers to look out frequently for such Observations; which if they happen to prove Occultations, and are carefully observed, will afford a certain means of determining the Longitude of the Place of Observation.

The Two first Columns of the Second Page of the Month contain the Day of the Week and Month as before; next follow the Sun's Longitude, right Ascension in Time, Declination, and the Equation of Time with its Difference from Day to Day.

The Longitude of the Sun is made use of in most of the succeeding Calculations of the *Ephemeris*, and may serve either to verify them, or to make other similar Calculations at a different Time of the Day. Particularly it may serve, with the Help of the Moon's Longitude, to find the Distance of the Moon from the Sun at any Time, independent of the Distances contained in the VIIIth, IXth, Xth, and XIth pages of the Month. To find the Sun's Longitude at any Time different from Noon, Proportion must be made according to its daily Increase: Saying, as 24^{h} is to the Hour from Noon reckoned by the Meridian of *Greenwich*, so is the Daily Variation of the Sun's Longitude, to a fourth Number; which added to the Sun's Longitude at the preceding Noon, gives the true Longitude at the given Time.

If the Time given be that of a Meridian different from *Greenwich*, it must be first reduced thereto, by adding or subtracting the Difference of Longitude turned into Time (at the Rate of One Hour to 15° , and One Minute of Time to 15 Minutes, or more briefly by Table XIV. Page 38, of the *Requisite Tables*) according as the Place is to the West or to the East of *Greenwich*. Example: Suppose any one should want to know the Sun's Longitude, January 19, 1767, at $4^{\text{h}} 35'$, being in $21^{\circ} 15'$ Longitude East of *Greenwich*. The Difference of Longitude turned into Time is $1^{\text{h}} 25'$ which subtracted from $4^{\text{h}} 35'$ because the Place is East of *Greenwich*, leaves $3^{\text{h}} 10'$ for the Time re-

duced to the Meridian of *Greenwich*. The Sun's Longitude the preceding Noon is $9^{\circ}.29'.18''.2''$, and the following Noon it is $10^{\circ}.0'.19''.4''$, the Difference is, $1^{\circ}.1'.2''$, or $61'.2''$, the daily variation. Then say as 24^h is to $3^h.10'$, so is $61'.2''$, to $8'.3''$, which added to $9^{\circ}.29'.18''.2''$, the Sun's Longitude on the preceding Noon, gives $9^{\circ}.29'.26''.5''$, the Sun's Longitude at the Time given. In like Manner any other of the following Articles is to be found by the Help of the *Ephemeris*.

The Sun's Longitude serves also to compute the Aberration of the fixt Stars and Planets.

The sun's right Ascension in Time is useful to the practical Astronomer in regular Observatories, who adjusts his Clocks by sidereal Time. It is also useful to him for converting apparent into sidereal Time; as suppose that of an Eclipse of Jupiter's Satellites, in order to know at what Time it may be expected to happen by his Clocks: For this Purpose the Sun's right Ascension at the preceding Noon, together with the Increase of right Ascension from Noon, must be added to the apparent Time of the Phenomenon set down in the *Ephemeris*.

The Sun's right Ascension in Time serves also to compute the apparent Time of a known Star's passing the Meridian: Thus, subtract the Sun's right Ascension in Time at Noon from the Star's right Ascension in Time, the Remainder is the apparent Time of the Star's passing the Meridian nearly; from which the proportional Part of the daily Increase of the Sun's right Ascension for this apparent Time from Noon being subtracted, leaves the correct Time of the Star's passing the Meridian.

Hence the apparent Time may be found from an observed Altitude of a known fixt Star, suppose one contained in Page 7, of the *Requisite Tables*; as will be explained hereafter.

The Sun's right Ascension in Time is also useful for computing the Time of the Moon and Planets passing the Meridian, as will be shewn under their proper Articles.

The Sun's Declination is necessary to find the Latitude, whether at Sea or Land, from the Meridian Altitude observed; it is also requisite for finding the Latitude from Two Altitudes observed with the Interval of Time measured by a Watch; it serves for computing the Sun's Azimuth, having his Altitude and the Latitude of the Place given, in order to find the Variation of the Compass; it is required, jointly with the Latitude of the Place and the Sun's horary Angle, to compute his Altitude, if neglected to be observed at the Time of taking the Moon's Distance from the Sun for finding the Longitude, being useful to facilitate the Calculation of the Effect of Refraction and Parallax upon the Distance; it is also necessary to calculate the apparent Time from an observed Altitude of the Sun at a Distance from the Meridian, the Latitude being given; or to compute the Time of the Sun's Setting or Rising; which, though a less accurate Method than the former of obtaining the Time, may yet be useful when that cannot be had. For any of these Purposes the Sun's Declination must

be found to the Time given nearly, reduced to the Meridian of *Greenwich*, making Proportion according to the daily Increase or Decrease, in like manner as was shewn with respect to the Sun's Longitude.

The Equation of Time is a Correction, which added to, or subtracted from the apparent Time (according to its Title at the top of the Column) gives equated or mean Time, or that which should be shewn by a good Clock or Watch. Apparent Time is that which takes its Beginning from the Passage of the Sun's Center over the Meridian of any Place; and had the Sun no Motion in the Ecliptic, or was his Motion reduced to the Equator or in right Ascension uniform, he would always return to the Meridian after equal Intervals of Time. But his apparent Motion in the Ecliptic being continually varying, and his Motion in right Ascension being rendered further unequal on account of the Obliquity of the Ecliptic to the Equator, from these Causes it arise that the Intervals of his Return to the Meridian become unequal, and the Sun will gradually come too slow or too soon to the Meridian for an equable Motion, such as that of Clocks and Watches ought to be.

This Retardation or Acceleration of the Sun's coming to the Meridian is called the Equation of Time, and is contained in the last Column but One of Page II. and when applied according to its Title to the apparent Time, or that deduced immediately from the Sun, gives the mean or equated Time, whence the Error of a Clock or Watch may be found, and, if required, it may be corrected.

If it be proposed to convert mean Time into apparent, this is done by a contrary Process, by applying the Equation of Time to the mean Time given, with its Title or Sign changed; *viz.* subtracting instead of adding, and adding instead of subtracting.

The Equation of Time being set down in the *Ephemeris* for Noon at *Greenwich*, Proportion must be made, according to the daily Difference, to find what it should be at any given Time reduced to the same Meridian, as in the preceding Articles. The last Column of this Page, containing the daily Differences of the Equation, is designed for this Purpose.

As often as it may be required to make any Calculations from astronomical Tables, and the Time given be apparent Time; it is necessary first to apply the Equation of Time thereto to convert it into mean Time, the Tables being disposed according to mean Motions. Thus the Articles contained in the *Ephemeris* answering to Noon were computed to 0^h. increased, or 24 Hours of the preceding Day diminished, by the Equation of Time: And the moon's places set down for midnight were computed to 12^h. increased or diminished by the Equation of Time.

What has been shewn concerning the Equation of Time chiefly respects the Astronomer, the Mariner having nothing to do with it in computing his Longitude from the Moon's Distances from the Sun and Stars observed at Sea with the Help of the *Ephemeris*, all the

Calculations thereof being adapted to apparent Time, the same which he will obtain by the Altitudes of the Sun or Stars in the manner hereafter prescribed.

But if Time-keepers should be brought into Use at Sea, the apparent Time deduced from an altitude of the Sun must be corrected by the Equation of time, and the mean Time found compared with that shewn by the Watch; the Difference will be the Longitude in Time from the Meridian by which the Watch was set, as near as the Going of the Watch can be depended upon.

The Equation of Time is computed by taking the Difference of the Sun's true right Ascension and his mean Longitude corrected by the Equation of the Equinoxes in right Ascension, and turning it into Time at the Rate of 1'. to 15'. &c. The Equation of Time will be additive or subtractive as the Sun's true right Ascension is greater or less than his mean Longitude so corrected.

The Time of the Sun's Semidiameter passing the Meridian, Page III. serves to reduce an Observation of a Transit of the preceding or subsequent Limb over the Meridian to that of the Center, when only One was observed. It signifies a Portion of apparent Time, or even mean Time, the Difference being absolutely insensible upon so small an interval. It is found thus: Increase the Sun's Semidiameter in the Ratio of the Cosine of his Declination to the Radius, to find his Semidiameter in right Ascension, which turned into Time at the Rate of 1' to 15'. and 1" to 15" gives the Time required. The Sun's Semidiameter in right Ascension is readily found by adding the Log. Cosine of his Declination to the logistic Logarithm of his Semidiameter, the Sum is the logistic Logarithm of his Semidiameter in right Ascension; which divided by 15 gives the Time of his Semidiameter passing the Meridian. If the Clock by which the Observation is made be regulated according to the sidereal Time, this Quantity must be increased in the Ratio of 365 to 366, if great Precision is required. From the Time of the Sun's Semidiameter passing the Meridian may also be found the Time of its passing the horizontal or vertical wire of Quadrant or Sextant, which on some Occasions may have its Use.

The Semidiameter of the Sun, is necessary to reduce the observed Altitude of his upper or lower Limb to that of the Center; also to reduce the observed Distance of the Moon's nearest Limb from the Sun's nearest Limb to the Distance of the Centers. It is also useful to Astronomers to verify or ascertain the Exactness of the Scale of their Micrometers, by comparison with the measure of the Sun's horizontal Diameter. This Practice is particularly useful in solar Eclipses, when the Distance of the Cusps or the Verse Sine of the unclipped Part has been measured with the micrometer. The Semidiameters of the Sun in *Mayer's* Tables, on which all the Calculations respecting the Sun and Moon are made, suppose the Semidiameter at the mean Distance to be 16'. 2", 8. which Mr. *Mayer* says he deduced from above 130 Observations taken with his Six Feet mural Quadrant, which seemed to him not ill adapted to the Purpose. It may not be amiss to take this

Opportunity to remark, that the Quadrant here mentioned was given to the *University of Gottingen* by his late Majesty, and was made by that ingenious Artist the late Mr. *John Bird* after the Model of the Eight Feet mural Arch, which he finished for the *Royal Observatory at Greenwich*, and put up there in the Year 1750. Mr. *Mayer* made his Observations with his Six Feet mural Arch, from the Year 1756, to the Time of his Decease; with it he settled the mean Obliquity of the Ecliptic to the Beginning of the Year 1756, at $23^{\circ}. 28'. 16''$, which Dr. *Bradley* settled by his Observations, reduced to the Year 1750, at $23^{\circ}. 28'. 18''$. The Difference is agreeable to what ought to arise from the gradual Diminution of the Obliquity of the Ecliptic at the Rate of about $\frac{1}{2}$ a Second in a Year. The same Instrument he also used in settling the Elements of his solar Tables; and it is most probable that with the same he settled his Table of Refractions at the End of his solar Tables; the Agreement of this Table with Dr. *Bradley's*, see Page 1st of *Requisite Tables* (being both suited to the same Temperature of the Air) is so great, that they seem rather like One and the same than two different Tables.

The hourly Motion of the Sun is useful in computing solar and lunar Eclipses; also in correcting the assumed Longitude of the Ship, in order to find the Time from an Observation of the Distance of the Moon from the Sun, independent of the Distances contained in the *Nautical Ephemeris*; See *British Mariner's Guide*, Page 49, and Table at the End of the same, Page 25. The Logarithm of the Sun's Distance is useful in the Calculation of the Places of the Planets and Comets. The Place of the Moon's Node signifies its mean Longitude, and is necessary for finding the Equation of the equinoctial Points both in Longitude and right Ascension, the Equation of the Obliquity of the Ecliptic, and the Deviations of the fixed Stars in right Ascension and Declination.

The Eclipses of Jupiter's Satellites are well known to afford the readiest, and for general Practice the best Method of settling the Longitudes of Places at Land; and it is by their Means principally that Geography has been so much reformed within a Century past, and the Positions of most distant Places determined with equal Accuracy to the nearest. It was hoped that some Means might be found of using proper Telescopes on Shipboard to observe these Eclipses; and could this be effected, it would be of great Service in ascertaining the Longitude of a Ship from time to time. In my Voyage to *Barbadoes*, under the Direction of the COMMISSIONERS OF LONGITUDE, in 1763 I made a full Trial of the late Mr. *Irwin's* Marine Chair proposed for this Purpose, but could not derive any Advantage from the Use of it; and, considering the great Power requisite in a Telescope for making these Observations well, and the Violence as well as irregularities of the Motion of a Ship, I am afraid the complete Management of a Telescope on Shipboard will always remain among the Desiderata. However, I would not be understood to mean to discourage any

Attempt founded upon good Principles to get over this Difficulty.

The Telescopes proper for observing the Eclipses of Jupiter's Satellites, are common refracting Telescopes from 15 to 20 Feet, reflecting Telescopes of 18 Inches or Two Feet focal Length, and Telescopes of Mr. *Dolland's* Construction with Two Object Glasses from 5 to 10 Feet; or, which are still more convenient, those of 46 Inches focal Length, constructed with Three Object Glasses, which are as manageable as reflecting Telescopes, and perform as much as those which he makes of 10 Feet with Two Object Glasses.

The Eclipses of Jupiter's Satellites are observed by Astronomers at Land, as well in order to provide Materials for improving the Theories and Tables of their Motions, as for the sake of Comparison with the corresponding Observations which may be made by Persons in different Parts of the Globe, whereby the Longitude of such Places will be accurately ascertained. It is indeed to be lamented that Persons, who visit distant Countries, are not more diligent to multiply Observations of this Kind; for want of which, the Observations made by Astronomers in established Observatories lose Half their Use, and the Improvement of Geography is retarded. But it is to be hoped that an Emulation will spring up among those who may have Opportunities of rendering so useful a Service to the Public, to incite them to watch diligently for the Occasions of observing these Eclipses carefully, particularly of the First and Second, which are most exact for the Purpose. The Eclipses, carefully calculated and set down in the *Ephemeris*, will serve to advertise them and Observers in general of the Times when they should attend to these Observations. The Person, who shall be under any Meridian different from *Greenwich*, must turn his Difference of Longitude into Time: See *Requisite Tables*, Page 38, and add it to or subtract it from the Time of the Eclipse set down in the *Ephemeris*, according as he is to the East or West of *Greenwich*, to find the apparent Time at which the Eclipse will happen at his Meridian, nearly. He must further take care to regulate his Watch or Clock by apparent Time, or at least to know the Difference, as well in order to apprize him of the Time to look out for the Eclipse, as for ascertaining the apparent Time exactly at which he shall observe it. Equal Altitudes of the Sun or Stars taken with an Astronomical Quadrant afford the best Means of regulating Clocks and Watches for occasional Observations; or they may be taken with a *Hadley's* Quadrant, by Reflection from a Basin of Water or Quick-silver, or from the Horizon of the Sea, if the Observer has an open Prospect, and is not elevated above 5 or 600 Feet above the Level of the Sea. But, if Opportunity does not admit of taking equal Altitudes, the Time may be determined from One Altitude taken in any of the Methods above-mentioned, at least Two or three Points of the Compass distant from the Meridian, but the nearer to the East or West the better, the Latitude of the Place being known, or being found by Observations of the Meridian Altitude of the Sun or Stars made

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on Purpose. It will be better to take several Altitudes in order to take a mean of the Results for greater Certainty. And if one Star be observed to the East and the other to the West of the Meridian, the Time will be determined with rather more Certainty. The Manner of computing the apparent Time from the Altitude of the Sun or a Star is shewn by Problems VIII. and IX. Pages 25 and 26 of the Explanation and Use of the *Requisite Tables*.

The Observer, being in a Place whose Longitude is well known, should be settled at his Telescope Three Minutes before the expected Time of an Immersion of the first Satellite; Six or Eight Minutes before that of the second and third Satellites; and a Quarter of an Hour or more before that of the fourth Satellite; chiefly on account of the Uncertainty of their Theories; but if the Longitude of the Place is very uncertain, he must begin to look out for the Eclipse proportionably sooner: Thus, if the Longitude of the Place is uncertain to 3 Degrees, answering to 12 Minutes of Time, he ought to fix himself to his Telescope 12 Minutes sooner than is mentioned above. Nevertheless, when he has observed one Eclipse of any Satellite, and thereby found the Error of the Tables, he may allow the same Correction to the Calculations of the *Ephemeris* for several Months, which will advertise him very nearly of the Time of expecting the Eclipses of the same Satellite, and dispense with his attending so long.

The Immersions signify the Instant of the Disappearance of the Satellite by entering into the Shadow of Jupiter; and the Emersions signify the first Instant of its Appearance at coming out of the same. They generally happen when the Satellite is at some Distance from the Body of Jupiter, except near the Opposition of Jupiter to the Sun, when the Satellite approaches nearer to his Body. Before the Opposition of Jupiter to the Sun the Immersions and Emersions happen on the West Side of Jupiter, and after the Opposition on the East Side; but, if an Astronomical Telescope be used, which reverses Objects, the Appearance will be directly the contrary. Before the Opposition, the Immersions only of the first Satellite are visible; and after the Opposition, the Emersions only. The same is generally the Case with respect to the second Satellite; both the Phenomena of the same Eclipse are frequently observable in the two outer Satellites. The Immersions and Emersions marked with an Asterisk in the *Ephemeris*, are those visible at *Greenwich*.

To know if an Eclipse will be visible in any Place, find whether Jupiter be 8°. above the Horizon of the Place, and the Sun as much below it. This may be done near enough by a celestial Globe: Otherwise, the Time of the Sun's Rising and Setting may be found for any Latitude by a Table of semidiurnal Arcs, contained in the popular Book called *The Mariner's Compass Rectified*, and many other Books; the Time of Jupiter's Rising and Setting may also be found from the Time of his passing the Meridian and Declination set

down in the *Ephemeris*, with the Help of the same Table of semi-diurnal Arcs; adding or subtracting the semi-diurnal Arc answering to the same Declination of the Sun: Remembering always, that if Jupiter's Declination and the Latitude of the Place are of the same Denomination, the semi-diurnal Arc will be more than Six Hours, and if they are of contrary Denominations, will be less than Six Hours. But it may be easier found whether the Eclipse will be visible at *Greenwich*, or whether it should be properly marked with an Asterisk, By the Tables, Page 28—31, annexed to the *Nautical Almanac* of 1772.

The Immersion or Emerfion of any Satellite being carefully observed in any Place according to apparent Time, the Longitude from *Greenwich* is found immediately by taking the Difference of the Observation from the corresponding Time shewn in the *Ephemeris*, which must be turned into Degrees, &c. by *Requisite Tables*, Page 38; and will be East or West of *Greenwich*, as the Time observed is more or less than that of the *Ephemeris*.

Example: Suppose an Emerfion of the first Satellite should be observed at the *Cape of Good Hope*, May 9, 1767, at $10^h. 46'. 45''$ apparent Time: The Time by the *Ephemeris* being $9^h. 33'. 12''$ the Difference is $1^h. 13'. 33''$, whence the Longitude of the *Cape* should be $18^{\circ}. 23'. 15''$ East of *Greenwich*, because the Time supposed to be observed at the *Cape* is more than that of the *Ephemeris*.

It is to be observed that a correspondent Observation of an Eclipse of a Satellite of Jupiter, made under a well-known Meridian, is to be preferred to the Calculations of the *Ephemeris* for comparing with an Observation made in a Meridian whose Longitude is required; but if no corresponding Observation can be obtained, as is frequently the Case, it will be best to find what correction the Calculations of the *Ephemeris* require by the nearest Observations to the given Time that can be obtained; which Correction applied to the Calculation of the given Eclipse in the *Ephemeris*, renders it almost Equivalent to an actual Observation.

The Longitudes and Latitudes of the Planets, Page IV. serve to know where to look for them in the Heavens, and when their Places may be conveniently settled by comparing them with fixed Stars by the Help of a Micrometer in a Telescope. They also shew when they are in the most important Points of their Orbits, where it is most material to observe them. They also serve to enable Persons less skilled to distinguish them from the fixed Stars. Their Declinations and the apparent Times of their passing the Meridian are particularly useful to Astronomers who are furnished with Quadrants and Transit Instruments well fixed in the Meridian, in setting their Instruments for observing their right Ascensions and Declinations.

The apparent Time of a Planet's passing the Meridian may be computed thus; the Planet's Right Ascension being calculated from its Longitude and Latitude, and turned into Time, subtract the Sun's Right Ascension at Noon in Time from it, to find the Time of the

Planet's passing the Meridian nearly, which call T ; take the difference of the ☉ and Planet's daily Variations in right Ascension in Time, if the Planet is progressive in right Ascension, or the Sun, if it is retrograde, which call X ; then say by the Rule of Proportion;

As $14^h \mp X : T :: X : e$ and $T \pm e$ will be correct Time of the Planet's passing the Meridian. The upper Signs are to be used both to X and e if the Planet's progressive Motion in right Ascension be greater than that of the Sun; in any other Case the lower Signs are to be made use of.

But perhaps it may be found more readily by continual Approximation as follows: Take the proportional Part of the Difference or Sum of the ☉ or Planets's daily Motion in right Ascension, answering to the Time of the Planet's passing the Meridian, found nearly, in Proportion to 24^h . and take a further like proportional Part of this proportional Part; and again of this last, and so on as far as is necessary. The Sum of all these proportional Parts added to the Time of the Planet's passing the Meridian, found nearly, if the Planet's progressive Motion in right Ascension is greater than that of the Sun, otherwise subtracted, gives the apparent Time of the Planet's passing the Meridian.

Example: Let it be required to find the Time of the Moon's passing the Meridian, July 1, 1767.

The Sun's right Ascension in Time July 1st is, $6^h 40'. 25''$ and July 2d, $6^h 44'. 33''$ by the *Ephemeris*. Therefore his daily Motion in right Ascension is $4'. 8''$. The Moon's right Ascension July 1st at Noon by the *Ephemeris* is $159^\circ. 2'$ answering to $10^h. 36'. 8''$ of Time, and July 2d is $169^\circ. 39'$ answering to $11^h. 18'. 36''$. The Difference is $42'. 28''$ of Time, from which $4'. 8''$ being subtracted, leaves $38'. 20''$. Subtract $6^h. 40'. 20''$ the Sun's right Ascension July 1st at Noon, from $10^h. 36'. 8''$ the Moon's right Ascension the same Noon, the Remainder $3^h. 55'. 43''$ is the Approximate Time of the Moon's passing the Meridian. The proportional Part of $38'. 20''$, answering to this, is $6'. 17''$, and the proportional Part of $6'. 17''$ is $9''$; therefore $6'. 17''$ and $9''$ or $6'. 26''$ added to $3^h. 55'. 43''$ give $4^h. 2'. 9''$, the apparent Time of the Moon's passing the Meridian. In the *Ephemeris* it is $4^h. 2'$. It may also be computed by taking the Difference of the Moon's right Ascension at Noon and Midnight, but then Half the Sun's daily Variation in right Ascension must be made use of, and Proportion must be made for 12 instead of 24 Hours: and if the Moon passed the Meridian after Midnight, the Sun's right Ascension at Midnight must be used, which is a Mean between his right Ascensions on the preceding and subsequent Noon. For the Planets it will be sufficient to take the first proportional Part only.

The Days of the Oppositions, Quadratures, &c. of the Planets to the Sun, are Times at which they ought to be observed in fixed Observatories, for settling the Elements of their Orbits by a Series of several Years Observations.

The Vth, VIth, VIIth, VIIIth, IXth, Xth, and XIth Pages of each Month contain the Moon's Place, and all the Circumstances relating to her Motion, and her Distances from the Sun and proper Stars, from which her Distance should be observed for finding the Longitude at Sea, The Longitude, Latitude, and Declination of the Moon, and Time of her passing the Meridian, afford the like Uses of the same Circumstances of the Planetary Motions, and many more besides. For the sake of greater Precision, the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, horizontal Parallax, with its proportional Logarithm, are computed Twice a Day, to Noon and Midnight, and may readily be inferred to any intermediate Time with the greatest Exactness.

Example: Let it be required to find the Moon's Longitude and Latitude, &c. July 16, 1767, at 16^h. 22'. 16".

First to find the Longitude.

The Moon's Longitude, July 16, at 12^h. is 0°. 6'. 40". 25" and July 17, at Noon, 0°. 13'. 47". 48" the Difference 7°. 7'. 23" is the Moon's Motion in 12 Hours; say then by the Rule of Proportion :

As 12^h is to 4^h. 22'. 16" (the Excess of 16^h. 22'. 16" above 12^h) so is 7°. 7'. 23" to 2°. 35'. 41" but this must be corrected on account of the Moon's unequal Motion in 12 Hours, by the Table of Equation of second Difference annexed to Mr. Taylor's *Sexagesimal Table*, Page 244—247: For this Purpose take out of the *Ephemeris* the Two Longitudes of the Moon next preceding the given Time, and the Longitudes immediately following it, and set them down in Order one after another as follows;

	D's Long. by the <i>Ephemeris</i> .	1st Diff.	2d Diff.	Mean of 2d Diff.
1767,	" " " "	" " "	" "	" "
July 16, Noon	11. 29. 29. 34	7. 10. 51	" "	" "
Midnight	0. 6. 40. 25	7. 7. 23	3. 28	
17, Noon	0. 13. 47. 48	7. 3. 39	3. 44	3. 36
Midnight	0. 20. 51. 27			

Take their Differences, 7°. 10'. 51", 7°. 7'. 23", 7°. 3'. 39"; take the Differences of these Differences, or the second Difference 3'. 28", 3'. 44"; and take their Mean which is 3'. 36". Now look for the Equation of second Difference, answering to 4^h. 22' after Midnight, found on the Side, and 3'. 36" at the Top, which will be found = 24", and which, according to the Remark at the Bottom of the Table, must be added to 2°. 35'. 41", the first proportional Part, because the Motion in 12 Hours or first Differences are decreasing, the Sum 2°. 36'. 5" added to 0°. 6'. 40". 25", the Moon's Longitude at Midnight, gives 0°. 9'. 16'. 30", the Moon's true Longitude, and is as correct as the Longitudes from which it is deduced.

N. B. If the first Differences of the Four Longitudes of the Moon taken out first increase and then decrease, or, *vice versa*, first decrease and then increase, take Half the Difference of the Two second Differences for the Mean second Difference, with which take out the Equation of second Difference, and add or subtract it as the First first Difference is greater or less than the Third first Difference.

To find the Moon's Latitude.

Take out of the *Ephemeris* the Two Latitudes preceding and Two following the given Time, and set them down in Order, and take their first and second Differences, and the Mean of the Two second Differences; find the proportional Part of the Middle first Difference answering to the Hours and Minutes, &c. of the given Time after Noon or Midnight; which correct in the following Manner: Entering Table of Equation of second Difference, Page 244—247, with the Hour from Noon or Midnight on the Side, and the Mean second Difference at Top, take out the corresponding Number of Seconds, which added to or subtracted from the proportional Part found above, according as the Motion in 12 Hours or first Difference is decreasing or increasing; or, more generally, according as First first Difference is greater or less than Third first Difference, gives the proportional Part corrected; which now added to or subtracted from the Moon's Latitude at the preceding Noon or Midnight, as the Latitude in these 12 Hours is increasing or decreasing, gives the Moon's Latitude correct.

Example: The Moon's Latitude is required, July 16, 1767, at 16^h. 22'. 16".

	☾'s Lat. by the <i>Ephemeris</i> .	1st Diff.	2d Diff.	Mean of 2d Diff.
1767,	0 " "	" "	" "	" "
July 16, Noon	4. 31. 10 N.	18. 26	" "	" "
Midnight	4. 49. 36	13. 50	4. 36	4. 40
17, Noon	5. 3. 26	9. 6	4. 44	
Midnight	5. 12. 32			

The Moon's Latitude July 16 at Midnight being 4°. 49'. 36" N. and the Motion in the next 12 Hours being 13'. 50" say by Proportion,

As 12^h. is to 4^h. 22' 16", so is 13'. 50" to 5'. 2": but this must be corrected by adding 32", the Equation of second Difference, answering to the Hour 4^h. 22', and the Mean second Difference 4'. 40", because the first Differences are decreasing, or rather because the first of them 18'. 26", is greater than the last of them 9'. 6", therefore the proportional Part corrected is 5'. 2" + 32" = 5'. 34", which added to 4°. 49'. 36", gives 4°. 55'. 10" N. the Moon's Latitude correct.

Remarks on some Circumstances necessary to be attended to, in order to obtain and apply the Correction of second Differences rightly in computing the Moon's Latitude.

I. If the Moon's Latitude taken out of the *Ephemeris* for Noon and Midnight changes its Denomination from North to South or from South to North, the Sum of the Two Latitudes of contrary Denominations, where the Change happens, is to be accounted the first Difference in that Place.

II. If the Three first Differences first increase and then decrease, or *vice versa*, first decrease and then increase, Half the Difference of the Two second Differences is to be taken for the Mean second Difference.

III. If the Series of Four Latitudes taken out should first increase and then decrease about the Moon's greatest Latitudes, take the Sum of the Two first Differences standing on each Side of the greatest Latitude for the second Difference in that Place; correct the Moon's Latitude at Noon or Midnight by the simple proportional Part first found; and to the Latitude so corrected, add always in this Case the Equation of second Difference from Page 244---247, answering to the Mean second Differences.

Before I quit this Subject of Interpolation by second Differences, I shall point out another Method, by which the same End may be obtained more readily, and with fewer Rules, by those who are well acquainted with algebraic Subtraction and Addition, and the Manner of applying the Signs in those Operations. Subtract each Latitude from the following for the first Differences, to which prefix the Sign — if the Latitudes decrease: and Subtract each first Difference, thus found, from the following one of the same order for the second Differences. Half the Sum of the Two second Differences standing on each Side of the Interval to be interpolated, is to be accounted the Mean second Difference; the Equation corresponding to it by Table, Page 244---247, is to be applied always with the contrary Sign.

These Operations are to be performed, and the Signs to be applied as in algebraic Subtraction and Addition. Note further, if the four given Latitudes change their denomination, call the second Latitude +, and those of a contrary Denomination —.

The Moon's Declination may be found at any Hour in the same Manner as her Latitude; but as the Correction arising from second Differences will never exceed $2\frac{1}{2}$, this may be neglected on most Occasions; but if any one is desirous to obtain the Declination true to a Minute, the Correction is easily applied as shewn above.

The other Articles of Page VI. and VII. *viz.* the Moon's Right Ascension, her Semidiameter, horizontal Parallax, with its proportional Logarithm, and the Distances contained in the Four last Pages of the Month, may be all found correctly by even Proportion, without requiring any Allowance on account of second Differences. The proportional Part of the Moon's Longitude, &c. for any Hour may be found very readily by the Help of the Table of proportional Logarithms, Page 39—55 of the *Requisite Tables*.

The Moon's Longitude and Latitude are used in computing her Distances from the Sun and Stars contained in the Four last Pages of

the Month, as well as in the Appulses to Stars pointed out in Page 1, and, jointly with her Parallax and Semidiameter, are necessary for computing the Eclipses of the Sun and Moon, and the Occultations of fixt Stars and Planets by the Moon. They also facilitate the Calculation of the Longitude of any Place from an observed Eclipse of the Sun, or Occultation of a Star or Planet by the Moon: Or, if the Meridian be well known, the Parallax and Semidiameter serve to deduce the Moon's true Place in the Heavens from the Observation, which compared with that given by the *Ephemeris* shews the Error of the Tables at the Time. The Moon's Semidiameter and Parallax are applied in correcting almost all Observations of the Moon. The proportional Logarithms of the Moon's Parallax serve further to facilitate the Calculations of Parallaxes.

The Moon's right Ascension and Declination are useful to compute her Altitude at any Time, particularly at the Observation of her Distance from the Sun or a Star, supposing it was neglected to be or could not be observed properly; which latter Case may sometimes happen in the Night, though I think but rarely; the utmost Accuracy therein not being required for the Calculations of Refraction and Parallax. See *British Mariner's Guide*, Page 57, and *Requisite Tables*, Page 24. The Moon's Declination, with her Semidiameter and Parallax, serve for finding the Latitude by the Meridian Altitude of her upper and lower Limb observed at Sea. See *British Mariner's Guide*, Page 93, and *Requisite Tables*, Page 15. The Moon's right Ascension and Declination serve also to compute the Time from her Altitude observed at the Observation of her Distance from a Star; whence the Longitude may be inferred, tho' no Altitude of the Sun or a Star was taken for regulating the Time. See *British Mariner's Guide*, Page 61, and Mr. Edwards's 5th Problem annexed to the *Nautical Almanac* of 1781, Page 10.

The Distances of the Moon from the Sun and fixed Stars, contained in the VIIIth, IXth, Xth and XIth Pages of the Month are set down to every Three Hours of apparent Time by the Meridian of *Greenwich*, and are designed to relieve the Mariner from the Necessity of a Calculation, which he might think prolix and troublesome, and to enable him, when compared with the Distance observed carefully at Sea, to infer his Longitude readily and with little Danger of Mistake to a Degree of Exactness that may be thought sufficient for most nautical Purposes. But useful and valuable as the Practice of this Method may be at present, it is a Remark not unworthy our Notice, that every future Improvement of the Lunar Tables, as well as the Instruments, will bring it nearer and nearer to Perfection.

The Moon's Distances are computed both from the Sun and proper Stars, and generally from One Object on each Side of her, to afford the Mariner a greater Number of Opportunities of Observation, and a Means of attaining a greater Degree of Exactness. The Distances from the Sun are computed between 40° and 120° of Distance. While the Moon is between the Distances of 20° and 40° from the

Sun, her Distance is computed only from a Star on the contrary Side that the Sun is. When she is between the Distances of 40° and 90° from the Sun, her Distance is computed both from the Sun and from a Star on the contrary Side to the Sun; when the Moon is above 90° from the Sun her Distance is computed from Two Stars, one on each Side of her; though still her Distance is computed also from the Sun from 90° to 120° . Though the Distance of the Moon from the Sun or Star, well observed with a good Instrument, is sufficient to determine the Longitude, with the Help of the *Ephemeris*, always within a Degree, and generally much nearer, yet it will conduce to still greater Accuracy, if the Observer takes the Distance of the Moon from Two Stars, or the Sun and a Star, or, when the Moon is between 90° and 120° Distant from the Sun, from the Sun and Two Stars, if he can be so lucky as to obtain these several Observations.

The Longitude being computed from the Observations made with each Star respectively, the Mean of the Results is to be taken as probably approaching nearest to the true Longitude. In particular the Moon's Distance should be taken from Two Stars, or the Sun and a Star on each Side of her, as often as Opportunity permits, since the Mean of the Results will probably be at least as exact again as either separately, I mean as far as depends on any Imperfection of the Instruments, and unavoidable small Errors arising in the Use of them; Errors of these Kinds having a natural Tendency to correct each other; for that small Error which arises from the Lunar Tables will affect the Result from either Star equally. But the Error of *Mayer's* last Lunar Tables are corrected from a series of Dr. *Bradley's* Observations of 9 Years by Mr. *Charles Mason* in 1778, being these made use of for the *Nautical Almanac* of 1789, and the subsequent ones, probably never exceeding $30''$, the Uncertainty hence arising in the Determination of the Longitude, can scarcely ever exceed 17 Miles of Longitude, and generally will be much less.

The Distances set down in the *Ephemeris*, afford the Observer a ready Means of knowing the Star from which the Moon's Distance is to be observed; for he has nothing to do but to set his Quadrant to the Distance computed roughly from the *Ephemeris*, neglecting the Seconds, at the apparent Time estimated nearly by the Meridian of *Greenwich*; and direct his Sight to the East or West of the Moon, according as the Distance at *Greenwich* is found in the VIIIth and IXth, or Xth and XIth Pages of the Month; and having found the Moon upon little Speculum, let him give a Sweep with the Quadrant to the Right and Left, and he will find the Star he seeks for, if above the Horizon and the Air be clear, nearly in a Line perpendicular to the Line of the Moon's Horns or longer Axis, or, which is the same Thing, in the Line of the Moon's shorter Axis produced. The Star is always one of the brightest, so that there is little Danger of mistaking another for it, if the preceding Directions are carefully observed. The Time at *Greenwich* is estimated nearly by turning the supposed Longitude from *Greenwich* into Time, by *Requisite Tables*, Page 38,

and adding it to or subtracting it from the apparent Time at the ship, as its Longitude is West or East of *Greenwich*. It will be sufficient if the distance be computed from the *Ephemeris* within 10', or 20', for setting the Quadrant. The principal Use of the Distances of the Moon from the Sun and fixt Stars; namely, in determining the Longitude by comparison with the corresponding Distances observed at Sea, is shewn in Problem XI. Page 37 of *Requisite Tables*.

The Distances contained in the *Ephemeris* were computed strictly to Noon and Midnight, and thence interpolated for every Three Hours according to the Method shewn for computing the Moon's Latitude Page 157—158; except that the Correction of second Differences at the Middle of the Interval to be interpolated, was taken $\frac{1}{8}$ of the Mean of the Two second Differences, and at the First and Third Quarter of the Interval was taken $\frac{1}{4}$ of the Correction just found at the Middle of the Interval; instead of consulting Mr. *Taylor's Table*, Page 248 and 249, which would however have given the same Result. But, at the first 12 Hours, when the Distances of the Moon from a Star begin, and the last 12 Hours, when the Distances end, there being only One second Difference instead of Two second Differences on each Side to take a Mean of, this Method fails in these Cases, and therefore the following is to be substituted in its stead, being derived from Sir *Isaac Newton's* Solution of the Problem of drawing a Curve through the Extremities of any Number of given Ordinates. *Phil. Nat. Princ. Math.* Page 486 Edit. *Londini* 1726, or Dr. *Horsley's* complete Edition of Sir *Isaac Newton's* Works, Vol. 3d. Page 128.

From Four Distances at Noon and Midnight computed strictly to interpolate Three Distances at the III^d, VIth, and IXth Hour of the first or last Interval.

Subtract each Distance from the following, for the first Difference, and prefix the Sign —, if the Distances decrease. Subtract each first Difference thus found from the following One of the same Order, for the second Difference: And in like Manner subtract the First second Difference from the following for the third Difference; applying the Signs as in algebraic Subtraction. Denote the first or last first Difference by b ; the first or last second Difference by c , according as the Interpolation to be made is for the first or last 12 Hours; denote also the third Difference by d , and, a being put to signify the Distance at the Beginning of the Interval, the interpolated Distances will be as follows:

$$\begin{array}{ll} \text{At III^d Hour of first Interval} & a + \frac{1}{2}b - \frac{3}{2}c + \frac{7}{8}d \\ \text{At VIth Hour of first Interval} & a + \frac{1}{2}b - \frac{1}{2}c + \frac{1}{8}d \\ \text{At IXth Hour of first Interval} & a + \frac{1}{2}b - \frac{3}{2}c + \frac{5}{8}d \\ \text{Or,} & \\ \text{At III^d Hour of last Interval} & a + \frac{1}{2}b - \frac{3}{2}c - \frac{5}{8}d \\ \text{At VIth Hour of last Interval} & a + \frac{1}{2}b - \frac{1}{2}c - \frac{1}{8}d \\ \text{At IXth Hour of last Interval} & a + \frac{1}{2}b - \frac{3}{2}c - \frac{7}{8}d \end{array}$$

X

In adapting these Formulæ to Numbers, great Care must be taken about the right Application of the Signs. Thus if b , c , or d is Negative, apply the Number expressing the Value of that Term of the Formula where it is found with a contrary Sign to that of the Formula

Let me add in this Place, that if in filling up the first and last Intervals, a new second Difference has been supposed in arithmetical Progression with the Two given ones, in order to take a mean between it and the first or last second Difference, the Interpolation at the Middle of the Interval or VIth Hour will be had true, the same as if the above Formulæ had been used: But at the Interpolation of the first and third Quarter there will be an Error of $\frac{1}{128}$ third Difference; which will be corrected, by applying $+\frac{1}{128}d$ or third Difference, to Number found at the first Quarter of the Interval, and $-\frac{1}{128}d$ to that found at the third Quarter of the Interval; equally the same whether it be the first or last Interval.

The Configurations of Jupiter's Satellites, Page XIIth and last, exhibit the apparent Positions of the Satellites with respect to each other, and to Jupiter at such an Hour of the Evening or Night as they are most likely to be observed, and serve to distinguish the Satellites from one another. Jupiter is distinguished by the Mark $\odot$, and the Satellites by Points with Figures annexed, the Figure 1 signifying the first Satellite, 2 the second Satellite, &c. When the Satellite is approaching towards Jupiter, the Figure is put between Jupiter and the Point; and when the Satellite is receding from Jupiter, the Figure is put on the other Side of the Point. The Satellites are in the superior Parts of their Orbits, or furthest from the Earth, when they are marked to the right hand or West of Jupiter approaching him; or to the left Hand or East of Jupiter receding from him; but are in the inferior Part of their Orbits, or nearest to the Earth, when they are marked to the right Hand or West of Jupiter receding from him, or to the left or East of Jupiter approaching him. The Cypher 0, sometimes annexed to the Figure of the Satellite towards the Margin, signifies, that it is invisible on the Face of Jupiter; and the black Mark $\bullet$, signifies that it is invisible, being eclipsed in Jupiter's Shadow, or, behind Jupiter eclipsed by his body.

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ECLIPSES
OF THE
SATELLITES OF JUPITER,
FROM
M. DE LAMBRE'S TABLES,
FOR THE YEAR
1795,
MEAN TIME.

100

1795.

JANUARY.

The ECLIPSES of JUPITER'S SATELLITES

will not be *visible* this Month,

JUPITER being *too near* the SUN.

FEBRUARY.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	22.54.24	3	14.24.13	1	14. 3.35 Im.
3	17.22.49	7	3.43.16	1	17.24.16 E.
5	11.51.15	10	17. 1.10	8	18. 2.27 Im.
7	6.19.40	14	6.20.11	8	21.23.48 E.
9	0.48. 6	17	19.38. 5	15	22. 2. 5 Im.
10	19.16.29	21	8.57. 6	16	1.24. 3 E.
12	13.44.55	24	22.14.58	23	2. 0.50 Im.
14	8.13.18	28	11.33.59	23	5.23.35 E.
16	2.41.42				
17	21.10. 5				
19	15.38.29				
21	10. 6.51				
23	4.35.13				
24	23. 3.35				
26	17.31.58				
28	12. 0.20				
				IV. Satellite.	
				3	11.41.31 Im.
				3	15. 9.22 E.
				20	5.42.58 Im.
				20	9.17.58 E.

1795.

M A R C H.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	6.28.42	4	0.51.48	2	5.59.54 Im.
4	0.57. 3	7	14.10.48	2	9.23. 8 E.
5	19.25.24	11	3.28.35	9	9.58.13 Im.
7	13.53.45	14	16.47.33	9	13.22. 5 E.
9	8.22. 5	18	6. 5.21	16	13.56.25 Im.
11	2.50.26	21	19.24.14	16	17.20.52 E.
12	21.18.46	25	8.42. 1	23	17.54.58 Im.
14	15.47. 7	28	22. 0.52	23	21.20. 0 E.
16	10.15.26			30	21.53.34 Im.
18	4.43.46			31	1.19. 7 E.
19	23.12. 5			IV. Satellite.	
21	17.40.26			8	23.44.34 Im.
23	12. 8.44			9	3.26.14 E.
25	6.37. 4			25	17.46.38 Im.
27	1. 5.22			25	21.34.31 E.
28	19.33.42				
30	14. 2. 0				

A P R I L.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	8.30.20	1	11.18.35	7	1.52.59 Im.
3	2.58.37	5	0.37.23	7	5.19. 6 E.
4	21.26.58	8	13.55. 4	14	5.51.40 Im.
6	15.55.16	12	3.13.49	14	9.18.21 E.
8	10.23.35	15	16.31.32	21	9.50.30 Im.
10	4.51.53	19	5.50. 8	21	13.17.40 E.
11	23.20.13	22	19. 7.49	28	13.48.48 Im.
13	17.48.30	26	8.26.22	28	17.16.29 E.
15	12.16.50	29	21.44. 1	IV. Satellite.	
17	6.45. 8			11	11.48.25 Im.
19	1.13.28			11	15.42.22 E.
20	19.41.46			28	5.50.37 Im.
22	14.10. 5			28	9.50.14 E.
24	8.38.22				
26	3. 6.43				
27	21.35. 1				
29	16. 3.22				

1795.

M A Y.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	10.31.38	3	11. 2.29	5	17.47. 5 Im.
3	5. 0. 0	7	0.20. 6	5	21.15.15 E.
4	23.28.18	10	13.38.31	12	21.45.48 Im.
6	17.56.40	14	2.56. 8	13	1.14.25 E.
8	12.24.58	17	16.14.24	20	1.44.38 Im.
10	6.53.20	21	5.32. 1	20	5.13.42 E.
12	1.21.40	24	18.50.13	27	5.44.23 Im.
13	19.50. 2	28	8. 7.54	27	9.13.55 E.
*15	14.18.22	31	21.25.55	IV. Satellite.	
17	8.46.45			14	23.53.39 Im.
19	3.15. 4			15	3.58.26 E.
20	21.43.28			31	17.56.44 Im.
22	16.11.47			31	22. 6.33 E.
24	10.40.13				
26	5. 8.33				
27	23.36.57				
29	18. 5.19				
31	12.33.45				

J U N E.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	7. 2. 7	4	10.43.31	3	9.43.28 Im.
4	1.30.33	8	0. 1.33	* 3	13.13.26 E.
5	19.58.56	*11	13.19. 8	*10	13.42.46 Im.
* 7	14.27.23	15	2.37. 6	10	17.13. 7 E.
9	8.55.47	18	15.54.41	17	17.41.40 Im.
11	3.24.15	22	5.12.35	17	21.12.23 E.
12	21.52.39	25	18.30. 9	24	21.40.38 Im.
14	16.21. 9	29	7.48. 0	25	1.11.45 E.
16	10.49.34			IV. Satellite.	
18	5.18. 4			*17	12. 0.50 Im.
19	23.46.31			17	16.15.19 E.
21	18.15. 2				
*23	12.43.29				
25	7.12. 0				
27	1.40.30				
28	20. 9. 3				
*30	14.37.32				

1795.

JULY.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	9. 6. 6	2	21. 5.36	2	1.40.12 Im.
4	3.34.36	* 6	10.23.21	2	5.11.39 E.
5	22. 3.12	9	23.40.58	9	5.39.54 Im.
7	16.31.44	* 13	12.58.42	9	9.11.41 E.
* 9	11. 0.21	17	2.16.19	* 16	9.40.39 Im.
11	5.28.53	20	15.34. 2	* 16	13.12.45 E.
12	23.57.32	24	4.51.38	* 23	13.40.45 Im.
14	18.26. 4	<i>Emersions.</i>		23	17.13. 7 E.
* 16	12.54.44	27	20.59. 1	30	17.41. 5 Im.
18	7.23.19	* 31	10.16.36	30	21.13.45 E.
20	1.51.59			IV. Satellite.	
21	20.20.37			4	6. 5.58 Im.
* 23	14.49.17			* 4	10.24.44 E.
	<i>Emersions.</i>			21	0.11.44 Im.
* 25	11.33.35			21	4.34.35 E.
27	6. 2.20				
29	0.30.58				
30	18.59.45				

AUGUST.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emersions.</i>		<i>Emersions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
* 1	13.28.25	3	23.34.16	6	21.41. 4 Im.
3	7.57.13	* 7	12.51.54	7	1.13.58 E.
5	2.25.54	11	2. 9.32	14	1.41.14 Im.
6	20.54.42	14	15.27.13	14	5.14.22 E.
8	15.23.24	18	4.44.51	21	5.41.59 Im.
* 10	9.52.14	21	18. 2.30	* 21	9.15.20 E.
12	4.20.58	25	7.20. 8	* 28	9.42.56 Im.
13	22.49.47	28	20.37.49	28	13.16.27 E.
15	17.18.33			IV. Satellite.	
17	11.47.23			6	18.18.54 Im.
19	6.16. 9			6	22.45.30 E.
21	0.45. 2			* 23	12.27. 8 Im.
22	19.13.48			23	16.57. 3 E.
24	13.42.42				
* 26	8.11.29				
28	2.40.24				
29	21. 9.12				
31	15.38. 8				

1795.

SEPTEMBER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emersions.</i>		<i>Emersions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
* 2	10. 6.55	* 1	9.55.31	4	13.44.49 Im.
4	4.35.53	4	23.13.10	4	17.18.31 E.
5	23. 4.43	8	12.30.51	11	17.46. 0 Im.
7	17.33.40	12	1.48.33	11	21.19.51 E.
9	12. 2.30	15	15. 6.12	18	21.47.17 Im.
11	6.31.29	19	4.23.57	19	1.21.17 E.
13	1. 0.19	22	17.41.39	26	1.48.14 Im.
14	19.29.19	* 26	6.59.24	26	5.22.20 E.
16	13.58. 8	29	20.17. 8		
* 18	8.27. 8				
20	2.56. 0				
21	21.25. 0				
23	15.53.51				
* 25	10.22.53				
27	4.51.44				
28	23.20.46				
30	17.49.38				

IV. Satellite.

9	6.36. 4 Im.
* 9	11. 9. 4 E.
26	0.46. 0 Im.
26	5.21.55 E.

OCTOBER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emersions.</i>		<i>Emersions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	12.18.40	* 3	9.34.53	3	5.49.15 Im.
* 4	6.47.32	6	22.52.37	* 3	9.23.26 E.
6	1.16.35	10	12.16.22	10	9.50.50 Im.
7	19.45.27	14	1.28.11	10	13.25. 5 E.
9	14.14.30	17	14.45.58	17	13.52.24 Im.
* 11	8.43.22	21	4. 3.44	17	17.26.43 E.
13	3.12.25	24	17.21.32	24	17.54.49 Im.
14	21.41.17	* 28	6.39.23	24	21.29. 8 E.
16	16.10.19	31	19.57.12	31	21.56.26 Im.
18	10.39.13				
20	5. 8.15				
21	23.37. 9				
23	18. 6.10				
25	12.35. 4				
* 27	7. 4. 6				
29	1.32.59				
30	20. 2. 1				

IV. Satellite.

12	18.56.36 Im.
12	23.34.53 E.
29	13. 7.31 Im.
29	17.47.59 E.

1795.

NOVEMBER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emersions.</i>		<i>Emersions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	14.30.54	4	9.15. 4	1	1.30.46 E.
3	8.59.56	7	22.32.54	8	1.58. 2 Im.
5	3.28.48	11	11.50.50	* 8	5.32.20 E.
6	21.57.50	15	1. 8.41	* 15	5.59.10 Im.
8	16.26.42	18	14.26.36	15	9.33.28 E.
10	10.55.43	22	3.44.33	22	10. 0.21 Im.
* 12	5.24.36	25	17. 2.28	22	13.34.34 E.
13	23.53.35	* 29	6.20.25	29	14. 1.58 Im.
15	18.22.27			29	17.36. 7 E.
17	12.51.27			IV. Satellite.	
* 19	7.20.21			* 15	7.18.57 Im.
21	1.49.18			15	12. 1.21 E.
22	20.18.11				
24	14.47. 9				
26	9.16. 1				
28	3.44.58				
29	22.13.49				

DECEMBER.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emersions.</i>		<i>Emersions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	16.42.46	2	19.38.25	6	18. 3.34 Im.
3	11.11.36	6	8.56.23	6	21.37.36 E.
* 5	5.40.34	9	22.14.24	13	22. 5.48 Im.
7	0. 9.23	13	11.32.27	14	1.39.43 E.
8	18.38.19	17	0.50.29	21	2. 7.11 Im.
10	13. 7. 7	20	14. 8.35	* 21	5.40.57 E.
12	7.36. 2	24	3.26.38	28	6. 8.26 Im.
14	2. 4.51	27	16.44.49	28	9.42. 3 E.
15	20.33.46	31	6. 2.51	IV. Satellite.	
17	15. 2.33			2	1.30.32 Im.
19	9.31.27			* 2	6.14.23 E.
21	4. 0.13			18	19.41.59 Im.
22	22.29. 6			19	0.27. 9 E.
24	16.57.52				
26	11.26.44				
28	5.55.30				
30	0.24.22				
31	18.53. 7				

T A B L E S
TO
IMPROVE AND RENDER MORE GENERAL
THE
METHOD OF FINDING THE LATITUDE,
BY OBSERVING TWO ALTITUDES OF THE SUN,
AND THE INTERVAL OF TIME BETWEEN.

BY JOHN BRINKLEY, A. M.
ANDREW'S PROFESSOR OF ASTRONOMY, DUBLIN;
LATE FELLOW OF CAIUS COLLEGE, CAMBRIDGE.

PUBLISHED BY ORDER
OF THE
COMMISSIONERS OF LONGITUDE.

1794.

A GENERAL REMARK,

SHEWING WHEN THE FOLLOWING

T A B L E S

ARE TO BE USED.

BY THE ASTRONOMER ROYAL.

IF the Latitude computed by the Rules given in the *Requisite Tables*, under the Restrictions in the Remarks at the End of the Examples, differs less than five Minutes from the Latitude by Account, it will be within a Minute of the true Latitude, and therefore no further Operation will be necessary. If the computed Latitude differs five Minutes or more from the Latitude by Account, the following Tables are here proposed to be used, instead of repeating the Operation by the *Requisite Tables*, as being more concise, but particularly as bringing out a true Result when the common Method fails, from the computed Latitude found by repeated Operations not approaching nearer and nearer, or, as it is commonly called, not converging to the true Latitude, or not sufficiently fast; which cannot be known till after the trouble of going through those Operations.

THE LATITUDE may generally be found from observing two ALTITUDES of the SUN and the INTERVAL OF TIME between, by one Operation, as is directed in the *Requisite Tables*, with the Assistance of the following Tables : but it is to be observed, that the Argument of Table I. is the true Latitude, and as only the Latitude by Account and the computed Latitude are known, there will be a Source of Error from this Cause when the Declination and Latitude are nearly equal and of the same Name ; however, the Error so arising, may in most Cases be corrected by the Directions hereafter given. This Method ought not to be depended on when the Latitude by Account and Declination of the same Name are so nearly equal that it is uncertain whether the true Latitude is greater or less than the Declination. There is also another Case in which the Method cannot be applied, taken Notice of in the Rules. In constructing the 2d and 3d Tables, regard has been paid to the proper Interval of Time between the Observations necessary to prevent the Latitude being too much affected by the Errors of the Observations and of the going of the Watch. The Limit of the Interval is supposed such as is directed by the Rules in Dr. MASKELYNE's *British Mariner's Guide*, and in the *Requisite Tables*; which Rules are deduced from two Theorems given in the *British Mariner's Guide*. Perhaps in the present improved State of Sextants and Watches, the Limit may be somewhat extended.

The second Table is not calculated beyond six Hours from the Meridian. When the Latitude and Declination are of the same Name, and both less than 4 or 5 Degrees, small Errors in the Altitudes and Interval will cause a very great Error in the Latitude, unless the Observations are made very near Noon, therefore in such Cases the Latitude found cannot be depended on : But this Defect must be common to all Methods.

TABLE I.

The Argument on the Top is the Degree of the Declination, and that on the Side is the Degree of Latitude.

The Sum or Difference of the Number found by this Table and Unity must be taken. The Sum to be used when the Declination, and Latitude are of different Denominations, and the Difference when of the same.

D.	1	2	3	4	5	6	7	8	9	10	11	12
1	In the first fix Degrees of Latitude, divide the Declination by the Latitude, and the Quotient will be the Number of this Table.											
2												
3												
4												
5												
6												
7	,15	,29	,43	,57	,71	,86	1,00	1,14	1,29	1,43	1,58	1,73
8	,13	,25	,37	,50	,62	,75	,88	1,00	1,13	1,26	1,38	1,51
9	,11	,22	,33	,44	,55	,67	,78	0,89	1,00	1,11	1,22	1,34
10	,10	,20	,30	,40	,50	,60	,70	0,80	,90	1,00	1,10	1,20
11	,09	,18	,27	,36	,45	,54	,63	,72	,81	,90	1,00	1,09
12	,08	,16	,25	,33	,41	,49	,57	,66	,74	,83	,91	1,00
13	,08	,15	,23	,31	,38	,46	,54	,61	,68	,76	,84	,92
14	,07	,14	,21	,28	,35	,42	,49	,56	,63	,70	,78	,85
15	,07	,13	,19	,26	,32	,39	,46	,52	,59	,66	,72	,79
16	,06	,12	,18	,24	,31	,37	,43	,49	,55	,61	,68	,74
17	,06	,12	,17	,23	,28	,34	,40	,46	,52	,58	,64	,70
18	,05	,11	,16	,21	,27	,32	,37	,43	,48	,54	,59	,65
19	,05	,10	,15	,20	,25	,30	,35	,40	,46	,51	,56	,62
20	,05	,10	,14	,19	,24	,29	,34	,39	,43	,48	,53	,58
21	,04	,09	,14	,18	,22	,27	,32	,37	,41	,46	,50	,55
22	,04	,09	,13	,17	,21	,26	,30	,34	,39	,44	,49	,53
23	,04	,08	,12	,16	,20	,25	,29	,33	,37	,41	,45	,50
24	,04	,08	,12	,16	,20	,24	,28	,31	,35	,40	,44	,48
25	,04	,08	,11	,15	,18	,22	,26	,30	,34	,38	,42	,46
26	,04	,07	,11	,14	,17	,21	,25	,28	,32	,36	,40	,44
27	,03	,07	,10	,14	,17	,21	,24	,27	,31	,35	,38	,42
28	,03	,06	,10	,13	,16	,20	,23	,26	,30	,33	,36	,40
29	,03	,06	,09	,12	,15	,19	,22	,25	,28	,31	,34	,38
30	,03	,06	,09	,12	,15	,18	,21	,24	,27	,30	,33	,37
32	,03	,05	,08	,11	,14	,17	,20	,22	,25	,28	,31	,34
34	,03	,05	,08	,11	,13	,16	,18	,20	,23	,26	,29	,32
36	,02	,04	,07	,09	,11	,14	,16	,19	,22	,24	,26	,29
38	,02	,04	,07	,09	,11	,13	,15	,17	,20	,22	,24	,27
40	,02	,04	,06	,09	,11	,13	,15	,17	,19	,21	,23	,26
42	,02	,04	,06	,08	,10	,12	,14	,16	,18	,20	,22	,24
45	,02	,03	,05	,07	,09	,11	,12	,14	,16	,18	,20	,22
48	,02	,03	,05	,07	,08	,10	,11	,12	,14	,16	,18	,20
51	,01	,02	,04	,06	,07	,08	,10	,11	,12	,13	,14	,16
55	,01	,02	,04	,05	,06	,07	,08	,09	,11	,12	,13	,14
59	,01	,02	,03	,04	,05	,06	,07	,08	,10	,11	,12	,13
63	,01	,01	,02	,03	,04	,05	,06	,07	,08	,09	,10	,11
68	,01	,01	,01	,02	,03	,03	,04	,05	,06	,07	,08	,09

TABLE I. *continued.*

The Argument on the Top is the Degree of the Declination, and that on the Side is the Degree of Latitude.

The Sum or Difference of the Number found by this Table and Unity must be used. The Sum to be used when the Latitude and Declination are of different Denominations, and the Difference when of the same.

D.	13	14	15	16	17	18	19	20	21	22	23
1	In the first Six Degrees of Latitude, divide the Declination by the Latitude, and the Quotient will be the Number of this Table.										
2											
3											
4											
5											
6											
7	1,88	2,0	2,2	2,3	2,5	2,6	2,8	2,9	3,1	3,3	3,4
8	1,64	1,77	1,91	2,1	2,2	2,3	2,5	2,6	2,7	2,9	3,0
9	1,46	1,57	1,69	1,81	1,93	2,1	2,2	2,3	2,4	2,6	2,7
10	1,31	1,42	1,55	1,63	1,73	1,84	1,95	2,1	2,2	2,3	2,4
11	1,19	1,28	1,37	1,47	1,57	1,66	1,76	1,88	1,98	2,1	2,2
12	1,09	1,18	1,26	1,35	1,44	1,53	1,62	1,71	1,80	1,90	1,99
13	1,00	1,08	1,16	1,24	1,33	1,41	1,49	1,57	1,66	1,74	1,83
14	,93	1,00	1,07	1,15	1,23	1,30	1,38	1,46	1,54	1,62	1,70
15	,86	,93	1,00	1,06	1,14	1,21	1,28	1,36	1,43	1,51	1,59
16	,81	,87	,94	1,00	1,06	1,13	1,20	1,27	1,34	1,41	1,48
17	,75	,81	,88	,93	1,00	1,06	1,12	1,18	1,26	1,32	1,38
18	,71	,76	,83	,88	,94	1,00	1,06	1,12	1,19	1,24	1,30
19	,67	,72	,78	,83	,89	,94	1,00	1,06	1,12	1,17	1,23
20	,63	,68	,74	,79	,84	,89	,95	1,00	1,06	1,11	1,16
21	,60	,65	,70	,75	,80	,85	,90	,95	1,00	1,05	1,10
22	,57	,62	,66	,71	,75	,81	,85	,90	,95	1,00	1,05
23	,56	,59	,63	,67	,71	,77	,81	,86	,90	,95	1,00
24	,51	,56	,60	,64	,68	,73	,77	,82	,86	,91	,95
25	,49	,53	,57	,61	,66	,70	,74	,78	,82	,87	,91
26	,47	,51	,55	,58	,63	,67	,70	,74	,78	,83	,87
27	,45	,49	,53	,56	,60	,64	,67	,71	,75	,79	,83
28	,43	,47	,50	,54	,57	,61	,64	,68	,72	,76	,79
29	,42	,45	,48	,52	,55	,59	,62	,66	,69	,73	,76
30	,41	,43	,46	,50	,53	,57	,60	,64	,66	,70	,73
32	,37	,40	,43	,46	,49	,52	,55	,58	,61	,64	,67
34	,34	,36	,39	,42	,45	,48	,51	,54	,57	,59	,62
36	,32	,34	,37	,39	,42	,45	,47	,50	,53	,55	,58
38	,29	,32	,34	,36	,39	,41	,43	,46	,49	,51	,54
40	,27	,30	,32	,34	,36	,38	,40	,43	,45	,48	,50
42	,26	,28	,30	,32	,34	,36	,38	,40	,43	,45	,47
45	,23	,25	,27	,29	,31	,32	,34	,36	,38	,40	,42
48	,21	,22	,24	,26	,28	,30	,31	,32	,34	,36	,38
51	,19	,20	,22	,23	,25	,26	,28	,29	,31	,32	,34
55	,16	,17	,19	,20	,21	,22	,24	,25	,27	,28	,30
59	,14	,15	,16	,17	,18	,19	,20	,21	,23	,24	,26
63	,12	,13	,14	,15	,16	,17	,18	,19	,20	,21	,22
68	,09	,10	,11	,11	,12	,13	,14	,15	,16	,17	,18
74	,06	,06	,07	,07	,08	,08	,09	,09	,10	,11	,12

[illegible]

TABLE III.

To be used when the Observations are on different Sides of Noon.

The Argument on the Top is the Time nearest Noon, and that on the Side is the middle Time.

h	10'	20'	30'	40'	50'	1 ^h . 0'	1 ^h . 10'	1 ^h . 20'	1 ^h . 30'	1 ^h . 40'	1 ^h . 50'	2 ^h . 0'	2 ^h . 10'
0. 10	,003	,005	,007	,009	,011	,013	,015	,017	,019	,021	,024	,026	
20	,008	,011	,015	,019	,023	,027	,031	,035	,040	,044	,049	,054	,028
30	,014	,020	,026	,032	,038	,044	,050	,056	,063	,070	,077	,084	,059
0. 40	,022	,030	,038	,046	,053	,061	,069	,078	,087	,096	,105		
50	,034	,043	,052	,062	,072	,082	,092	,103	,114	,125			
1. 0	,046	,057	,068	,080	,091	,103	,115	,128	,141				
1. 10	,059	,072	,085	,099	,113	,127	,141	,156					
20	,075	,090	,105	,120	,136	,152	,168						
30	,092	,109	,126	,143	,161	,179							
1. 40	,113	,131	,149	,168	,187								
50	,133	,153	,173	,194									
2. 0	,156	,178	,200										
10	,180	,192											

Divide the Sum or Difference found by Table I. by the Number from Table II. or III.

USE OF THE TABLES.

WITH the Latitude by Account compute the Latitude once, as directed in the *Requisite Tables*.

I. If the Observations are on the same Side of Noon.

When the Declination is greater than the Latitude and of the same Denomination; the Latitude by Account and that computed will be on the same Side of the true Latitude.

When the Latitude and Declination are of different Denominations, or when the Latitude is greater than the Declination, the Latitude computed and that by Account will be on different Sides of the true Latitude.

II. If the Observations are on different Sides of Noon, just the contrary will take place.

Take the Sum or Difference of the Number found by Table I. and Unity, according as the Latitude and Declination are of a Different or the same Denomination.

Divide this Sum or Difference by the Number taken from Table II. or III. Increase or diminish the Quotient by Unity according as the true Latitude is or is not between the Latitude by Account and that computed.

Lastly divide the Difference between the Latitude by Account and that computed by the above Quotient so increased or diminished, and the Result will be the Correction to be applied to the Latitude computed.

OBSERVATION I. When the Latitude and Declination are nearly equal, it will be proper to correct the Latitude twice: This is done by using the Latitude once corrected for the Argument of Table I. instead of the Latitude computed.

OBSERVATION II. When the Latitude computed is farther from the true Latitude than the Latitude by Account is: It is possible that the corrected Latitude may differ several Minutes from the Truth, if the Latitude by Account be far from the Truth. In such case use the Latitude corrected as the Latitude by Account and repeat the whole Operation.

OBSERVATION III. In the particular Case, when the Latitude per Account and that computed are on the same Side of the true Latitude, and the Quotient mentioned in the Rule happens to be nearly equal to Unity, this Method cannot be depended on.

* N. B. According as this Quotient is greater or less than Unity, the Latitude computed will or will not be nearer the true Latitude than the Latitude by Account is,

EXAMPLE I.

A. M. greater Alt. $50^{\circ} 1', 2''$ } $1^h 30'$ Star's declin. 14° N.
 A. M. less Altitude $41^{\circ} 33', 2''$ } Interval Lat. by Acc. $52^{\circ} 50'$ N.
 Lat. computed $52^{\circ} 5', 2''$ Middle Time $1^h 46', 7''$
 Time nearest Noon $1 . 1, 7$

By the Rule the true Latitude is between the Latitude by Account and that computed.

Table I. gives ,2 Table II. gives ,09

Difference	$\frac{1}{,8}$	Lat. by Account $52^{\circ} 50'$
	$,8$	Lat. computed $52^{\circ} 5', 2''$
	$,09$	Difference $44', 4''$
Add	1	
Sum	10	

$\frac{44', 4''}{10} = 4', 4''$ Correction of Lat.
 $52^{\circ} 5', 7''$ Lat. computed
 $52^{\circ} 10', 1''$

N. B. True Latitude is $52^{\circ} 10'$.

Times of Observ. $9^h 30'$ } A. M.
 $11 . 0 .$ }

EXAMPLE II.

A. M. Altitude $50^{\circ} 1', 2''$ } $2^h 30'$ Lat. by Acc. $51^{\circ} 30'$ N.
 P. M. Altitude $41^{\circ} 33', 2''$ } Interval Declination 14° N.

By the Rule the true Latitude is not between the Latitude by Account and that computed.

Lat. computed $52^{\circ} 5', 2''$ Middle Time $0^h 44', 4''$ Tab. I. gives ,2
 Lat. by Account $51^{\circ} 30'$ T. nearest Noon $1 . 0', 4''$

Difference	$35, 2$	Difference	$0, 8$
		Tab. III. gives	$,08$
	$\frac{35, 2}{9} = 3', 9''$ Corr ⁿ . of Latitude.		$\frac{0, 8}{,08} = 10$
	$52^{\circ} 5', 2''$	Subtract	1
	$52^{\circ} 9', 1''$ Latitude corrected.	Diff.	9

EXAMPLE III.

P. M. Altitude $70^{\circ} 1'$ } Interval Lat. by Account $6^{\circ} 30' N.$
 P. M. Altitude 35.21 } $2^h. 20'$ Declination $5.30 N.$

By the Rule the true Latitude is between the Latitude by Account and that computed.

Lat. computed $8^{\circ} 16'$ Middle Time $2^h. 29\frac{1}{2}$ Tab. I. gives ,66
 Lat. by Account 6.30 T. nearest Noon $1.19\frac{1}{2}$ 1

Difference $1.46 = 106'$

Difference ,34
 Tab. II. gives ,20

$$\frac{.34}{.2} = 1,7$$

Add 1

Sum 2,7

$$\frac{106'}{2,7} = 40' \text{ Correction of Lat.}$$

8.16

7.36 Lat. once correct^d.

Since in this Example the Declination and Latitude are nearly equal, the Latitude ought to be twice corrected.

Tab. I. entered with Lat. $7^{\circ} 36'$ gives ,74

1,00

Difference — —

0,26

$$\frac{.26}{.2} = 1,3$$

Add 1

Sum 2,3

$$\frac{106'}{2,3} = 46' \text{ Correction of Latitude.}$$

8.16

7.30 Latitude twice corrected.

N. B. The true Latitude is $7^{\circ} 30'$, and it would have required seven Operations by the common Method to have had the Latitude within $10'$ of the Truth.

EXAMPLE IV.

A. M. Altitude $75^{\circ} 8',6$ } Interval Lat. by Account $10^{\circ} 10' N.$
 P. M. Altitude $42.31,6$ } $4^h. 15'$ Declination $11.0 N.$

By the Rule the true Latitude is between the Latitude by Account and that computed.

Lat. computed 8°. 52' Mid. T. 1^h. 6', 7 T. nearest N. 0^h. 59', 8
 Lat. by Acc. 10. 10 Table I. gives 1, 24 Tab. III. gives, 11

$$\begin{array}{r} 1.18 = 78' \\ \text{Difference} \quad 0,24 \end{array}$$

$$\begin{array}{r} .24 \\ .11 \\ \hline 2.2 \\ \text{Add } 1 \\ \hline 3.2 \end{array}$$

$$\frac{78'}{3.2} = 24' \text{ correction of Lat.}$$

9. 16 Lat. once corrected.
With Argum. of Lat. 9°. 16' T.I. gives 1, 19

$$\begin{array}{r} \text{Difference} \quad \frac{1}{19} \quad \frac{19}{11} = 1,7 \\ \hline 2,7 \end{array}$$

$$\frac{78'}{2.7} = 28' \text{ Corr}^n. \text{ of Latitude}$$

9. 20 Latitude corrected.

N. B. True Latitude is the same.

EXAMPLE V.

A. M. Altitude	5°. 36', 1	} Interval	Sun's Declination	12° N.
A. M. Altitude	45 . 5, 7		Lat. by Account	27 N

The true Latitude is between the Latitude computed and that by Account.

Lat. computed $30^{\circ}.5'$ Middle T. $4^h.25'$ Table I. gives 37
 Lat. by Acc. 27 T. nearest N. 2.55 I

$$\underline{3.5 = 185'}$$

$$\frac{.63}{1.41} = .45$$

Add 1

Add 1

Sum 1,45

$$\frac{185'}{1.45} = 128' = 2^{\circ}.8' \text{ corr}^n. \text{ of Lat.}$$

27.57 Lat. corrected.

In this Example the Latitude computed is twice as far from the Truth as the Latitude by Account is ; and the Latitude by Account is nearly a Degree from the Latitude computed, the Operation ought therefore to be repeated using the last-found Latitude as the Latitude by Account.

The Lat. recomputed is $28^{\circ} \ 7\frac{1}{2}'$ $28^{\circ} \ 7\frac{1}{2}'$ Lat. by Acc.
 Latitude by Account $27 \cdot 57 \ \frac{10\frac{1}{2}}{1,45} = 7\frac{1}{2}$ $7\frac{1}{2}$ Correction.

Difference $10\frac{1}{2}$ $28 \cdot 0$ Lat. corr^d.

N. B. The true Latitude is $28^{\circ} \ 0'$. and the Times of Observation 6^h . A. M. and 9^h . A. M.

The Tables are calculated, and the Rules deduced from the following Formulas :

Let L = true Latitude, D = the Declination, T = the Time nearest Noon, and M = the Middle Time.

Put $m = 1 \pm \frac{t,D}{t,L}$
 —————, When both Observations are on the
 $s, T \times t, M - vs, T$ same Side of Noon.
 $m = 1 \pm \frac{t,D}{t,L}$
 —————, When the Observations are on diffe-
 $s, T \times t, M + vs, T$ rent Sides of Noon.

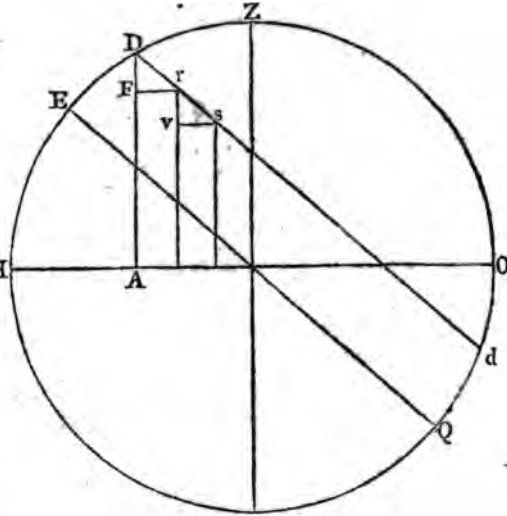
The Sign + to be used when the Declination and Latitude are of different Denominations, and ~ when of the same : then the Error in the computed Latitude = the Difference between the computed Latitude and Latitude by Account divided by $m \pm 1$;

viz. by $m + 1$ { Observations on the same Side of Noon, and Latitude greater than the Declination or of a diff. Denomina.
 { Observations on different Sides of Noon, and Latitude less than the Declination and of the same Denomin.
 viz. by $m - 1$ { Observations on same Side of Noon, and Latitude less than Declination and of same Denomination.
 { Observations on different Sides of Noon, and Latitude greater than Declination or of a different Denomina.

N. B. The Number found by Table I. is $\frac{t,D}{t,L}$, that found by Table II. is $s, T \times t, M - vs, T$ and that found by Table III. is $s, T \times t, M + vs, T$.

DEMONSTRATION.

HO, EQ, Dd, &c. represent the respective orthographic Projections of the Horizon, Equator, parallel of Declination, and on the Plane of the Meridian HED Z O d Q and let H



Put P = the Interval of Time between the Observations reduced into space, A and a for the Altitudes.

When the Observations are on the same Side of Noon, $M = T + \frac{1}{2} P$; also,

$$\begin{aligned} rs : vr &:: \text{rad.} : cs, L \\ cs, T - cs, \overline{T + P} : rs &:: \text{rad.} : cs, D \\ \therefore cs, T - cs, \overline{T + P} : vr &= s, A - s, a :: \text{rad.}^2 : cs, L \times cs, D \\ \text{or } s, \frac{1}{2} P \times s, M : cs, \frac{A + a}{2} \times s, \frac{A - a}{2} &; \text{rad.}^2 : cs, L \times cs, D \\ \text{or } s, M = cs, \frac{A + a}{2} \times s, \frac{A - a}{2} \times \text{rad.}^2. \end{aligned}$$

$$s, \frac{1}{2} P \times cs, L \times cs, D$$

$$\text{But } T = M - \frac{1}{2} P \text{ and } Dr = \frac{vs, T \times cs, D}{\text{rad.}}$$

$$DF : Dr :: cs, L : \text{rad.} \therefore DF = \frac{vs, T \times cs, D \times cs, L}{\text{rad.}^2},$$

and $s, \text{Mer. Alt.} = DF + s, A$

The Lat. = $\begin{cases} D \pm \text{computed Mer. Altitude when the Latitude and Declination are of the same Denomination.} \\ \text{Computed Mer. Altitude} - D \text{ when the Latitude and Declination are of different Denominations.} \end{cases}$

The above is the Substance of the Rule commonly given.

Now call c the Latitude thus found or the computed Latitude, then $\dot{c} = \pm \text{Flux. Meridian Altitude}$, + when the Latitude is less than the Declination and of the same Name, otherwise —

$$\text{but Flux. Mer. Alt.} = \frac{s, \text{Mer. Alt.} \times \text{rad.}}{cs, \text{Meridian Alt.}} = \frac{DF}{s, L \pm D} \quad (\text{rad. being } = 1)$$

$$\therefore \dot{c} = \pm \frac{DF}{s, L \pm D} = \pm \frac{cs, D}{s, L \pm D} \times \frac{\dot{vs}, T \times cs, L + vs, T \times cs, L}{\dot{vs}, T \times cs, L + vs, T \times cs, L}$$

$$\text{It appears from above that } \dot{T} = \dot{M} = \frac{s, \dot{M}}{cs, M} = \frac{s, \dot{M}}{s, M} \times t, M =$$

$$- \frac{cs, \dot{L}}{cs, L} \times t, M = \dot{L} \times t, L \times t, M \therefore \frac{\dot{vs}, T}{vs, T} = s, T \times \dot{T} = \dot{L}$$

$$\times t, L \times t, M \times s, T \text{ also } cs, \dot{L} = - \dot{L} \times s, L :$$

$$\text{Consequently } \dot{c} = \pm \frac{cs, D \times \dot{L}}{s, L \pm D} \times s, T \times t, M \times t, L \times cs, L - vs, T \times cs, L$$

$$= \pm \frac{cs, D \times s, L \times \dot{L}}{s, L \pm D} \times s, T \times t, M - vs, T = \pm \frac{cs, D \times s, L \times \dot{L}}{s, L \times cs, D \pm cs, L \times s, D}$$

$$\times s, T \times t, M - vs, T = \frac{\pm \dot{L}}{1 \pm \frac{t, D}{t, L}} \times s, T \times t, M - vs, T$$

$$= \pm \frac{\dot{L}}{m}, \text{ putting } m = \frac{1 \pm \frac{t, D}{t, L}}{s, T \times t, M - vs, T}$$

What is true for the Fluxions will be nearly so for the Increments, and will be sufficiently true for Nautical Purposes even when the Increments are large. Let r = Latitude by Account, and t = the true Latitude; then $t \sim r : t \sim c :: m : 1$:
 $t \sim c : r \sim c :: 1 : m \pm 1$, or $t \sim c = \frac{r \sim c}{m \pm 1} Q. E. D.$

In the same manner the Truth of the Formulas may be proved when the Observations are on different Sides of Noon.

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