# SECOND ADVENT 

## WAY MABKS AND HGH HBAPS

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GODSEPECLAR PEOPAD
Trom the jear 1810 lo 1817.

## BY TOSEPII BATES

## NEW-BEDFORD:

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1847.



## PREFACE.

The design of the author of the following pages is to strengthen and eneourage the honest hearted, humble people of God, that have been, and still are, willing to keep the comaranpmaisys of God and the teatimony of Jesus, to hold on to their past experience, In the conneoted chain of wonderful events and falmment of prophecy, which have been developed during the fast soven years. ${ }^{-6}$ Prove all thinge and hold fist that whicli good." Again, Jesus says, "ye are my friends if ye do whatsoever I command yoa." He has plainly and positively commanded us down here, "to hold that fast which we-have, that no man take our crown." From other portions of his teaching, it is plain that in this passage he refers to our past and present experience, and nothing elec. Becauseall our worldly interest is, and must be, consecrated to God. "Then here, while we fre in the ficry furnace, being shaped for the building that is in the heaven of heavens, we are oxhorted to look back to these wayuarg and man maps in our pathway, that our confidence may be unahaken in our glorious commander, who has brought us of victorious thus far, and has promised us if we trust in him, " We shall be as Mount Zion which can never be removed." As I have no earthly object frere in view but the prayers and good wil of thoso who may be benefitted by rending the following, which we dedieate to them, $\mathbf{I}$ hope to be pardoned if any thing which is said may be deemed harsh or too severe, wherel have referred to names, books or papors, to vindieate the cause and work of God In these last days. I have honored and respected them, and do now, for all their good works ; but for the stumbling blocks they have laid in the why, and removing of bounds, (See Hosea v : 10) I praise there not, but will endeavor to "speak the truth in righteounacs."Amme.

## TOTHELITTLE PLOCK.

"Set thee up waymarks, make thee high heaps ; set thy heart towards the highway, oven the way that thou wentest." Jer. xxxi : 21.

How perfectly natural it is for every person cither travelling or sailing, to have their minds excited respecting their starting place, their place of destination, and all the intermediate places on their way; among passengers on the land, but more particularly on the ocean, the continual enquiry is our whereabouts. If God's people manifested half the anxiety concerning their spiritual welfare, they would live in a continual state of joy and thanksgiving, and a perfect state of readiness for the everlasting kingdom. Butas the reverse of all this has ever been the case, with comparatively but few exceptions-hence the instruction from the Prophet of God to this people, henceforward to set them up waymarks and make high heaps, and set their hearts towards the highway, even the way they went, or had come. Every anxious traveler knows what a relief it is to his mind to find a guide board, a mile stone, or a post. But the mariner has to be more particular. Instead of finding guide boards and mile posts on the Ocean, be kne to chain out the distance be runs, shal so prove it by signs in the heavens-something afor the following manner.He takes the bearing by compass, and then judges his distauce from the land or lighthonse that is now receding from his view. And now the watch is set to keep the ship on her course, and measure the distance run every two hours, night and day, daring her passage to her destined
port. At 12 o'clock every day this account is mado up awd recorded in the journal of the voyage. Thim is what the sailor calla-dead reckoning. Fivery day when the man is not olacurad by elouds, the captain and oflicors nsecrtain the ship's poxition in relation to her latitnde, by wateling the sin, and notimg the moment she leaves the Rasterm and passes into the W estern Henisphere. It is then 12 o'elock fit noon' and the noxt dny now commences, with reclions ing for the noxt gi homss.

But there in still mather more intricate and difileult proress, by which the true (and not the doad) reckoning is ascortained. This is done by measaring the dintanen betweots the sun and imoon, or booa and some weil known star, if in the night. This process, when accomoplished by the helf of a nantical almanc, gives ther mhip's longitnde, showing clearly how many miles the ship is either oast or wost, as the casc may be, of the port athe leff. This, with the aboee process, (taling nin abecrvation of the sun $\gamma^{\text {nt }}$ noon, by whe same instrument.) gives the true position of the ship on the ocean. Then by consulting the Intituic and longitude of the land from which they taok their dopartare, and the port to which they are bound, the true bearing and distance from each place is eorrectly ascertained; the ship all the while making the locst of her way omrard, until another observation to corroet her deal reckoming. Here passengers and crew, althongh they are wanderers alone on the trackless ocean, are melicyed fron their ansiety, and inspired with fresh courage and ronfilence to pursuc their intended voyage. What a beantifal figure this, for the trilly lambio, fithful followers of Jesus, As the Mariner is here dependent on the celestial scenory, (sun, moon and stars,) to correct every now and then his dead reckonings, so the followers of Jesus are ever gecking from tho Sua of Righteonsness, whose habitation is in the heavens, a mors correct view of their wanterings over the ecean of time, to rorrect their dead reckoning, and inspire them with unshaken confidence to pursue their pilgrimage toward the heavenly Cauann.

But ah, how many professed follnwers of Jesus, aftot taunching out from the shores of sin and folly, with strong determinations to pursue the voyage over life's rongh soa for the heavenly Canaan of rest, havelaid down their watch. and thrown by their instruments of observation, int ront minded to parsac their onward courne and trust alone for their destination to their deed rechoning. Dut, bles tho

Lord, therg aro some that ato rully determined to correat their domd recloning, by watching every opportunity formis pbrervation of the Sun of Righteousnes, and by faffeling faut to all the promises, doing nsflie Prophet has showin them-"Stand contimaily upon the watch tower in the thy fime, and set in their roard every night," watching for all the terrestrial and celestial land marks and heaps in their pathway, "Holding fast that which thoy have," (that is their experience, ) trusting in the Lord, which makeg them as Mouat Zion, that cannot be removed, but abideth forever. and as another prophet has it, "the righteons shallalso hold on his way, and he that hath clean buds shall be stronger and stronger."

Now altiongh the pathwny of the truly righteons is direclly opposite to the world, yet the way marlis ind heaps whiel they are to set up, and have in remembrance as they faks along, are so assimilated to the literal, that the waytaring man need not err. Of the literal in the scriptare we will give an iustance or two. "The case of Jacob, being uveritken ly his fathosin-law Laban, they fimally made is covenant that they never would pass that place to harm emeh other, and that they may neser forgel this covenunt. Jacol twok a ntoue and set it up for a pillar (or way mark) and tohl his brechrén to gother stones and make a heap, the margin yeads tho hedp of witness, boacon or watch-tower. Laban says, thin heap be witness, and this fillar be witness, Hat I will not pass over this licap to thee. and that thou that not passovor this heap and this pilar unto me for harm." Geat alxii : 31, 4:-52.
2. "The curse of God rests on all suchas remove their neighbor's land mark." Deut. 27: 17. Thisundoubtedly menns both fiteral and spiritual. as in the case in Isa. $x: 18$. Whe Assyrian (the oppressors of God's people) make: their boasts in renoving the bounds of the people (or land marks:) Cod tclls lia people not to be alruid of item, for yet a very flefo wifile and the indignation ahall cease, and mine anger in their destrnction." 24, , 25 $v$.

Hosea says the Princes of Judea were like those that remose the bound, v. 10. The spiritual leaders in Israel remove the honnd, and make sad the beart of the hmmble secker. This has been done undoubtedly since the days of the going out of Egypt, but never in so general mud in such a pecaliar manuer as willin the last thirty montis. Hence the pressing necessity for God's people to set their bearts toward the highray which they went, and look well
to, and remember thoir soay marks and high heaps, or as Jesus taught those in the Philadeplii church "to hold fant that which they had."

Our object then is to present in a prophetical and spiritual point of view, the way marks and high heaps which the people of God have biterly experienced in these last days.

In directing your mind to this great and all absorbing subject, I wish you to look back on your palhroay to the year 1840, when the subject of the preaching of the second Advent of Josus aroused the dormant feelings of his people to examine their bibles as they never had done before. The best view, and I know not but the only one which was published down to May 1844, will be found in volume 1 of the Apvent Shiecid and Review, under the head of Rise and Progress of Adrentism, Article II. As all of my readers may not be privileged to see this standard work which marks the Second Advent believer's patheay as above stated, I shall take the liberty occasionally to make some quetations therefrom to show the motives, feclings and determinations, of some of those who led the way in this glorions work. But to the subject of the text. Where in the Bible do we find the light in our pathway, showing us in 1840 what to call our

## FIRST LAND MARK AND HIGH HEAP.

A Proclamation of the everlasting Gospel! John in vision says, " And I saw another angel fly in the midst of heaven, having the everlasting Gospel to preach nuto them that dwell on the earth, and to every creature, and kindred, and tongre, and people, saying with a loud voice, fear God and give glory to him, for the hour of his judgment is come." xiv ; 6, 7. Now every one lenows, or must sce, that this angel sywbolizes measengers or tenchers preaching the everlasting gospel just before the jndgment; for the next nugel that follows announces the fill of Babylon just before the end of time. Furthermore, invisible angels have never been known to preach to men. Respecting 'the hour of God's judgment is come,' there must be order and time, for God in his judicial character to decide the cases of all the righteous, that their names may be registered in the Lamb's Book of Life, and they be fully prepured for that eventful moment of their change from mortal to irumortality.

Respecting the time and order of thin everlusting goppel, Jusua has given the same view in xlee 24th ch, of M Athew. hix anwwer to his disciples respecting this coming mend the end of the world, (or as Campbell translates it, 'the conclusion of this state,') he says in 14 v. . "And this gospel of the kingdom shall be preached in all the world for a witness unto nil nations, and then shill the end come." What end 1 Sce Campbellis translation. "And these good tidings of the reign shal be publistred through all the world for the information of all nations, and then shall come the end," or as ho said in the 3 v ., "the conclusion of this state," the closing of the gospel dispensation. It is cle $r$ that it is not the same in time that Panl spenks of in A. D. 64 to the Col, that this gospel had then been "preached to every croature nnder heaven." Now nt the hour of God's judgment it is to be published only to every nation, and kindred, and tongue, and people, and not as it had been to "every ereature under heaven."

Without pursuing the sabject any farther, we say the only clear understanding of this preclamation at the hour of fiod's judgment in Rever, is the prencling of the Second Advent, and the reign of Christ in the new heavens and new earth, and that the angel that Jolin snw reprementa mucseengers delivering a,messaggo with a loud poice (that the sound may be lienrd throughout all theno nationn,) wat Willian Millor, of Low Hampton, N. Y., and sil other: who believed and honeatly tanght the same dectrine, and that this doctrime has been pubisihed, by booke and preaching, to every nation puder heaven, is clear, and not nove disputed; and that I have given what all Advent lolievers admit and teach is the clear understanding of the text. If it possible for any one to show that this proclamation in the text has ever been pnblished to every nation and kindred under heaven since the days of the Apostles. I think history will be searched in vain for it, and if it has not been faithfully given since 1840 , then I think it cannot through the instrumentality of man. Then if, as we have ahown, this prophecy is fulfilled, it never can oceur again. That it is done I have not the shindow of a doubt.

The commencing of the way. Father Miller says his first lecture on the Second Advent was in August, 1833. Advent Shield, page 57, mays, " His first course of lectures in Chardon Streot Chapel, Boston, constituted altogether a new era in the hintory of Adventism." This was in the winter of 1840 . In March following the first paper way
isured by 1. V. Himes, called the SIGNS OF THIE TIMES, relating to the second coming of Chriat. By this meaus the subject was made public throughout the
land.

October 14 same year the first Second Advent Conforence convened in Boston, at the close of which thoy sent nut their lirst circular to the world. Before the closo of the memorablo year 1840 this gloriona doctrine of our coming Lord was fatly under way. The flying mingel or myssengers now begat to move from the sury mime quarter of? the Globe where, sixty y cas belore, the sma wisharkened and ihe moon refinsel her light, to fosum the Proclamation of the reign of Christ and give the world their lat warning.
To show how this glorious work was progressing, I will make an extract from two fottors puhbiphed in the Signs of the Times, April 15th, 1840. The first is from the pen of Elder D. Millard, Portsmonth, N. H; he says : "On the e3d of January brother William Miller came into town and commenced a course of lectures in our chmpel on the secand coming of Christ. During the nine days he remained, crowds flocked to hear him. Before he concluded his leetures a large number of anxious sonls cane forward for prayers. Our meetings continued every day and ovening for allugth of timanher he left. Such un intense state of feeling as now pervaded our congregation, wo never wincsesed betore in any place. Not unfrequently from sixty to eighty would come forward for prayers in au eseming. Such ait aivful spirit of solemnity secmed to settle down on the place, that hard must he the siumer's heart that could withstand it. All was order and soleumity. Generally is soon as souls foumd deliverance, they were rendy to proclaim it, and exhort their friends in the most moving language to come to the foumain of life. Our meetinge thin continued on evenings for six wecks. For weeks together the ringing of bells for daily meetinga fendered onr town Tike a continal Sabbath. Imleed such a scason of revival was never before witnessed in Portsmonth, by the oldest inhabitaut. It would be difficult at present to ascertain the exact number of conversions in tow. It is variously estimated at from 500 to 700 . Never while I linger on the shore of mortality, do I uxpect to enjoy more of heaven than we have in some of our late meetings, and on baptizing oceasions. At the wuter side thousands would gather fo witness this solemn institution, and many would retura from the place weeping.

The second tetter is from Etder Fleming of Portland:"Thang here are moving hore powerfully. Last evening nbout 200 requested prayerw, and the interest scems coustantly iacreasing. The whole city seems to be agitated. Br . Miller's lectires have not the least effect to affigig: ; they are far from it. The grout alarm is among those that did not come near. But those who candilly heard are farr from excitement and aharm. The intorest awakened by the lectures is of the most deliberate kind, and though it is the greatest revival lever saw, yet there is the least pamionate excitement. It secms to take the greatest hold on the male part of the community. What produces the effect is thisBr. Miller simply takes the eword of the apirit, unsleathed and naked, and lays its slarp edge on the naked heart, and it cnts! ! that is all., Before the edpe of this mighty weapon Intideliy fills and Universulisa withers. Phbe fountations vanisf, and babel's merclruts wouler. It seems to tae that this must be a little the nearest like A postolic reviyale of any thing modern times have witnesed." Apeil Gth he wrices again,-"There has probably never been so much religious interest among the inhabinants of this place Eenerally, as at present; mad Mr. Mifler must be regarded directly as the instrument, ahthough many no doult wil deny it; as some are very mowilling to admit ihat if gond work of God can follow his linbors; and yet we hase the most indinitable evillenee that this is the wopk of the Lord. At some of our moctings simee Br M. Ieft, ns miny nA 250, it has been estimited, have expressed a desire for religion, by coming forward for prayers: and probably between one and two liundred hive prufessed conversion at our mectings; and now the tire is being lindled through this whole city, ani nil the adjacent conniry- A nmaber of Rumsellers have turned their shops into mecting rooms, and thoso placos that were onen devoted to intemperance and reveloy, ave now devosed to pruyer and praise. $I n$ fidels, Deists, Uniecrselisle, and the moxt abandoned preffigates have lieen conserted. Prayer mpelings have heen established in every part of he efly hy the dificerent denominations, or by imdividuals, and at almost every hour -1 was condactod iuto a room over one of the banks, where I found from thirty or forty men of different denominations. engaged with one aceord in prayer, at eleven o'elock in the day time! In short it would be almost impossible to give an sdequate iden of the interest new felt in this city, One of the principal bookellers inforined me that he had
wold more bibles in pue mowth, since Br . Miller came herg, than he had in muy four months previous."

We might go on multiplying aceounts of the like mature from vther pleces if it were necessary; but we think this will suffice to convince the bonest hearted.

The Second Conference was another slorioun gathoring, in the city of Lowell, June 15-17, 1841. This was ancther time of deep intereat, and gave n new impulise to the cause hers- Br. J. Litch gave tho hintory of the Otroman empire, which slosed up the sounding of the eixth angoi and sceond woe, ns he had atated wonfa tuke place on the eleventh day of August. 1840, some two years previous, by calculating the prophetical numbers in ix ch. Rev. The attention of most all classes had been turned to the proceedings in the Enst, to see ir this prediction would be fulfilled. Here then was where the flying messengers began to make their message tell! and faith in the Advent was much strengthened, and the believer's ranks hourly increasing. In the spring of this year, Father Miller, Blder J. V. Himes, and Bider Cole, visited the southern part of Massachusetts and Rhode IAland. In Fairhaven and Now Bedford the subject had been previously presented, but now it seomed to be fanned up to a flame that the luke warm and cold hearted professors could not withstand. The clergy were ca led upon to hold a meeting to canvass this subject. A large majority of them met and organized; read and prayed, and undertook to exnmine the visions of Daniel. Adjourned for further consideration ; reassembled the next day; and closed their convention by giving the vision to a dead man, even Antiochus Epiphanes. "And so they wrapt up the matter." Opposition from variona quarters began to arise ; but the cnuse was bourly increasing and spreading through the land among the honest and faithfinl.In October the third conference was held in Portland, Ne. Here a new impulse was given to the cause in that section of the conntry. Conferences were held in other places during the winter particularly in New York city, Ct., N. H., Vi., \&e.

In Moy, 1842, a general conference was again conveued in Boston, Mass. At the opening of this mecting Br. Chs. Fitch and A Hale of Haverhill, presented us the Visions of Damiel and John which they had painted on cloth, with the prophetic numbers and ending of the vision, which they ealled a chart. Br. F., in explaining the subject said in substance as follows : he had been turning it over in his
mind, and folt that if something of thin kind could be done, it would mimplify the mubject, and make it much savier for him to present it to the people. Here new light weemed to upring up. These brethran had fulfilled a prophecy given by Hab, 2468 yearn before, where it says, "And the Lord answered me and maid, write the nition and make it Dhain upon tables, that he may run that readeth it.'. This thing now became so plain to all, that it wus unanimously voted to have three handred of these charts lithographed forthwith, that those who felt the message may read and run with it. A campmecting aho was appoiated for the first time, and oonvened tio last week in June, nt East Kinguton, N. H., where su immense multitnde assombled to hear the glad tidinge of the reign of Christ. Now-to use a figure-the Advent ship was making such rapid onward progress under her cloud of well trimmed sails, that all the opposition of currents and adverse winds, (traditions of men) conld not check her career. Campmeetings and conferences were being multiplied thronghout the middle and northern States and Canada, and tho flying angels or messengers of this "judgment hour cry" were seen moving, with all the speed of locomotives, on railroads and in nteamboats, passing from place to place, "saying with a loud rovice, the hour of his jndgment is come." Here too, God, "looking down from the height of his sanctuary," fulfilied his promise, and multiplied earthquakes in diveru places, and fearful sights, and great sigus in the heavens. Also, as suid the A postle Peter, they should prophecy, dream dreams, and see visiuns. I believe it was generally admitted our all hands, that history had never recorded the like within the compass of so few years, since the days of the first Advent. Who among the many thousands that crowded to the camp and great tent meeting about this time, at East Kingston, Littleton, Taunton, Salem, \&e., does not distinctly remember the crowded steanboats, the overflowing cars, the jammed stage coaches, and almost nill kinde of travelling vehicles, filled with men women and children ; besides foot passengers crossing and re-crossing from every cross road, and almost every by-path, pressing into the great thoroughfares, all making their way to or from the Second Advent campground; many of them prohably to gratify their vain curiosity, while thousands of others were filled with anxiety to learn the truth of this (said to be) new doctrine, by listening to these flying messengers of God, who were "saying with a loud voice, fear God and give
this out of no wrong feelings to a once long and tried friend. It think it belonga to the cinse,

Here, then, we suy the world received our last warning, And athough 30 months have rolled away since that erisis; I have yet to learn of one individual that lins been bronght into that state where that Gospel required the church of God to stand and pase through the fiery farance of afllicr tion. If the three cries of the 14th Rev. 1st. 3 d and 4 th toay marks are in the past, as I think I have clearly proved, it is ntterly vain to look to the nominal church for any such individual. And if the great majority of advent believers, and especially the preachers, as 1 have shown particnlarly it the sixth "soay mark," have drawn back from this peenliar work, and I think it is as plain as that two and two make four, that they have; then it will be utterly futite fo believe that nay of the converts they claim to have been converted to their faith since that time can be saved, unless they send them to a higher standard than they aim at themselves. "If any man shall draw back, my sonl shail have no plensure in them." The vital commandment in the decalogne is set at nanght and trampled upon by them. Inspiration says, "He that torneth away has ear from hoaring the lase, even his prayer shall be abomination." "How long refise ye to keep my commandments and my laws," the seventh day Sabbath. Rxod. xvis 25, 38. 'They boant mueh about keeping the commandments that lead into the gates of the city. But inspiration says again, "If we fril in one point we are gailty of all." And yet they risls on, claiming, us I was told yosterday by an individaal, that he lenew ail he wished to on this snffeet.

It appeara plain to mo that if those that were trily in the work when the cry ended, had eontinued to exhort and pray, and lahor with those which were willing to unite, that ten would have heen saved that are now lost, for every one whish is maid to he gained by going out to preach as had been done before, "Rememher Liot's Miffe,"

## THIRD WO,-IS IT COME ?

"And I beheld and heard an angel flying throngh the midst of heaven saying with a loud voice, "Wo, wo, wo, to the inhabitants of the earth, by reason of the voices of the trimpet of the three angels whinh are yet to sonnd." Rev, vili: 13. In xiv, chap. 6 v., John says, "I saw another angel," dec., referring to one before, which taust be this
with the three woes. When the fifth angel had sounded 150 yeara tho first wo passed, ix. chap. 1, 12. When the gixth angel had sounded 391 yeare and 15 days, the second wo pused. ix: 13; si: 14. See also J. Litelis Prophetic Prophecy, Vol. II.

What I wish to show here is, that there is no distinction between the woes and trumpets. I think no one will be able to show any. Therefore the three woes and the three trumpels are the same. The messengers in examining this sabject declared that the sixth trumpei cenased to sound and the second wo passed on the 11th day of August, 1840.

It is then declared that "the second wo is past, and behold the third wo, or the seventh trumpet, by a voice which is the sampe, "cometh quickly." This word denoter n ahout period in almost every instunce in tho keriptures. In thia cases we may it was four yeurs and two mouths, Then of cournes it is olear if the seventh angel is sounding, the third wo is come.

If the wars and various calamities which foll upon men under the fifth trumpet, made it a wo trampet, and the wo nuder the sixth trumpet still more severc in the wars and cholera, and various epidemics, do not the awfol calamities which have and are tating place in the world, teach us plainly that a greater wo than thes, has already come? I think Jesus has taught us this plainly in $x x i f$. Luke, in the signs which should precede his coming, viz. "Distross of nations, with perplexity, sea and wives roaring, men's hearts finiling them for fear, and for looking after those things that are coming on the earth, for the powers of the hoavens shnil be slaken." And then the Son of Man will reme. Since the fall of 18i4y these have been increasing in various ways, until men's hearts now begin to fail. Here lies before me a panphlet of 83 pages, entitled, the Voice of God, or an account of the unparalleled Fires, Harricanes, Flools, and Earthqualers, heginning with 1845; aiso, Pestulence, Famine, and Crime-compiled by Thomas M. Preble. Since this work was issued at the beginning of this yoar, the periodicals of foreign countries and those of our own boasted happy Republic, show that these calnmities among men are still increasing to a foarful extent. The imhabitants of many mations are at their wits emd. A great portion of them have heard that the people of the United States are happy, and have got bread enough and to spare, and they are crowding with their friends and families ou ship board, and are almost daily reaching our sea- understand me ; I want you to wec what I have partly stated in the fifh way mark. "THREE times in a year shall all thy males appear hefore the Lord thy G d." First is the Peast of unleavened bread, i. o. the Passover. (2d.) Feast of weeks. (3d.) Feast of Tabernacles, in Deut. xvi: 1-16. The rensons are given. The details and explanation are principally in the xxifit. chap. of Lev.
Let us start now understandingly. These three fensts are typienl of three of the most important ovents to transpire in this world from the first to the second advent.
(1st.) Was the crucifixion of our Lord at the Passocer feast?
(2d.) Fifty days after, or the 7 th week feast, the day of Pentecost, A. D. 31.

Now as thesc two feasts have been perfectly fulfilied, we have nothing farther to do with them here.
(3d.) Feast or Taberuacles on the 15th of the 7th wonth. This undoubtedly represents the gathering of all Irracl at the ingathering of the harvest, the end of the world, and will have a perfect filfilment here.
Now let us examine closely; for here I think we shall find the longitude of our ship, which will enable us to correct our dend reckowing preparatory to receiving the time when we shall cuter the glorious harbor of rest.

Here then in this third and last fenst are three types each marked by time making perfect order in their fulfilment.

1st. 2tih v. Ie the mumorial of trumpets ou the let day of the 7h month? In the 7hi wiyy mark we think we linve Nhown how this is being fulfilled, via, sounding the serenth trumpel. If any one doubte respeeling this, the next type will make it clear.

2d type: "Also on the 10th day of the 7 th month, there shall be a day of atonement $Y_{e}$ shall $o$ ffict your sonls from even to even shall you celebrate yonr Sabrath," i.e. it shall be a 24 hour day. Here in this type the people were all these 24 hours in a deep state of tial, amicted for their sins, waiting around the 1 abernacle, while the High Priest was performing the nervices in the "most holy place," making the atouement for the sanctuary, himseff and people ; and when he comes out he pronounces the blessing, and then the day of alliction is pver until the next year. Now mark. God was so particular to have this type fulfilled, that he made it a ntanding oriler that whosoever would not be afflited in that day, should be cut off from among lis
psople. Now if 1 can ahow the fulfilment or antelype to him type, will you believe?

First, then to be porfect in time it must begin on the 10th lday of the 7 th month, and no where elvo. Then please look back to the 10 th of the 7 th month, 1844, where all the virgins were out looking for the Bridegyooin, or as in the type, waiting for Jesus our grent High Prient, to fimish the atonement for the snnctuary and ourselves, and bless ny by his glorious appearing. At thia point of timu our dimppointmont when the chy come and no indicatione of our L.ord's coming was imtense. Here then all the honest and sincere virgins were plunged into a furnace of aftiction, which they could not avoid, and have been wading through it these last thirty monthe, This has been such a nniversal and simnltameons affiction, presenting itself in all its various forms, proplecied of by prophets and apostles, that it is impossible for advent belrevers to deny without apostatizing from the faith. They have likened it to the passing of gold and silver through "refining fire." Petor says we must not "think strange concerning it." Jomes calls it the patient waiting time. John calls it the patience of the saints. The augel Gabriel was also instructed respecting the holy people in the last days. He said they shontd be Lriod. When we say we are looking for the I.ord, we virtnally acknowledge all this in the past, for it would be perfect folly to say these trials would come on the holy peoplo after the resurrection. This history is in perfect accordnnce in the time and manner with the type. Indeed if this is not clear and admitted, we shonld forever derpair of appealing to the conscience for testimony. Here then we say is the perfect antetype to the 10th doy of the 7 th munth aflifiction. For if the universal and peculiar trials to God's people have not yet come, then vain is our hope of the second advent here. Do you doubt now whether the seventh trampet, the first type of these tiree, is sounding, you must see that these two types are 10 days apart. In time therefore the soventh trumpet must sonnd, first to usher in this very afliction. And now see there is hut one type more to be filfilled in this last feast ; and this is the feast of Tabernacles, which cannot take place in April nor May, nor any other month but the 15th of the 7ih month. The filfilment of the two preceding types prove this position. O God, I thank thee for the clear light that arises from this feast of Tabernacles.

Then we say at the commencement of this second type, the symbol of our trial, was where the Bridegroom caule,

Trampes, and after the third angela message, and before sla of the seven plagues are poured ont.

I am aware that all thin can be objected to. So can the whole vision. But it does mean something which tonk place in heaven. And who that will read Leviticun xvi: $29-34$, and xxifi; $97-39$, where the type is presented every year can ever dombt but the antetype will take places here on the 10 th of the 7 th month, where the appointed time must end ( 2300 dayn) and Josis after his marforgo onter the Hullest of Bolies, and compunce tho cleanitig of the sanctatary ; as John has it, "prepare mansions in my Father's house." Jesis says emphatically, "altor I have prepared a place for you, I will return and take you with me." Is not this the New Jerus ilem? and does he not prepare it before he comes for his saints? 'This mast be the elcansing or juslifying the sanctuary. And we say ngain there is no other place or time for it to talee place. And as it respects the history, the only place and time that God's people did simnitaneonsly go out to meet the Bridegroom was on the 10th day of the 7th month, 1844. A more perfect fulfilment never has taken place before. Who can see any thing like this in the future ?

Now as our experience shows such a perfect filfilmont of events, where in our history should we look for this important event to take place, if not in the text and types, "A nd the Bridegroom came, and at the end of the appointed time, (2300 days) where the sanctuary is to be justified or cleansed $7^{\prime \prime}$ Hure, then, we say is the commencing of this important work. Here is the beginning i and Joel tells us when it will be finished or cleansed. When the "Lord roars out of Zion, and shakes the heavens and earth," (see Hag, and Pani's description, also,) "then shall Jerusalem be holy," The Bridegroom will then have changed his title to that of king. At this point of time I think is where John saw the crown on his head. This certainly is before his coming, and after the shaking of the powers of heaven. Aud that has not yet been done, but is the very nest sign in order. What next ? The sign of the Son of Man. What next? Josus coming in the clouds of heavon. Now this is the order Jesus has given us limselfwhy cannot we beliove it ? I know it is easy enongls for any one who does not search the scriptures very diligently or give any streteh to his thoughts, to say that all these events can, or will take place when Jesus comes. It might just as well have been said that when the sun wis darkon-
ed, the mtan foll, but we clearly see there was time and space for both. So there will be for all the sigus given. This subject of the coming of the Bridegroom han also been ably discussed, and very clenrly ween and admitted. The backeliding of its principal advocates is no more proof of its nou-fulfiment, than that there hass been no Midnight Cry, becanse the same class of people have rejected it. Tho seriptures ars our guide. This has been the great scape goat or loop hole, for a certuin class to crave away from the positon they had taken, into more respectable confregations and society, and confess this the great error they had been led into, when in fact their hearts were filled with unbeliel respecting the short distance they had travelled in the puthway after the fall of 1844. Tho proof of this is clearly seen in their conceasions and confessions to them that rotreated back after the ery to what was called the broad platorm, the tarrying time in the spring of 1844. They are ubout all united now in doing the work over again, and in finding frolt with the shat door people. I am aware this is plain langunge, bnt 1 speak advisedly. My heart has been burdened and pained while I have been watching the progress of backsliding Israel.
Markinge.-"And they thit were ready, went in with him to the marriage," I know it reads so, says one, bot is it a literal wedding or marriage 1 No, it is a figurutive representation (as we have shown) of a union offected between Christ the Bridegroom, and his Bride, the New Jerusalem in heaven : and when this took place the church here below were all brought into a certain state ('READY') and participated in the mion. This mast necessarily be so, for Christ being the sine and the charch the branches, also the head and the church the body, one could not move without the other. Aguin, Jesus says, "My sheep hear my voice, and they follow me." Therefore when Jesus leaver the mediatorial seat to be united to his Bride, the church will ns necessarily move an the body does when the head turns round. Now wo may that our history on the 22d of October, 1844, wis a purfect filfilment of the figure or parable given to illastrate it. See "IVnile they toent to buy, the Bridegroom cane, and they that were REA DY went in with him to the marriage." Here at this point the heavens rang with song nad praise, "the voice of " great multiude. and as the voice of many watern, and as the voice of mighty thanderingasaying, Alleluin, for the Lord God omnipofent reigneth. Let us be glad and rejoice, and give honor
can nnderatand how the door is shut. Clurist says heis the door. - Then when he rises up to leave the office lie has been fulfilling these 1800 years, and moves to the most hoby place to receive his dominion and glory, and a kingdom, then he virtually shuts the door, and the work for the church is as necessarily changed ; beeause as his sheep they follow lim. Now as I have shown in the preceding chapter that this work precedes his advent and must be done on the 10th of the 7 th month to falal the type and the parable of the virgins, and his people here on carth must participate and do their part, as was done in the type, and it mnst bo something juht like what has takon rince, and will be known and bolieved im by Gods true, chifliren, and hithory las not recorded any thing like it is the past down to Oetober, 1844. Neither has it tranapirad nimece in the 7th month of 1845 or 46 . Neither can any thing like is tike place agnint ly the viryins in tho parable, for they are divided and subdivided, without a powibility of a umion. Therefore if it is to be done in the futare, it mast be by an entirely new set of believers that are united as the virgins once were, when "they all arose and trimmed their lamps to go out and meet the Bridegroom." How clear it is then that the door was shut ns I have shown, on the 10th day of the 7th month, 1844, and no where else. And that here ended Daniels appoined toie, 2,300 dayn. Why end here 1 Becmuse Hey were to end at an "appointed time," viii 19. Hnb. mays at the end it shall speak and not lic, and then if it tarry, wait for it. This is precisely what we are now doing; Then it has spolen at an appointed time, 22d Oct. 1844, and now is the tarrying of the vision.

It mast he protty well understood by this time how the Advent Herald and its associates have derided those that adhere to this view since the noted Albany conference, and how repeatedly they have cited ns to the fature for the cleansing of the sanctuary at the ending of the 2,300 days. Now see them making another tuck to windward! Here it is: "We shall continue to believe what we have constantly taught, [we should like to see how often since the Albany Conference,] that the 2300 days began about B.C. 457, and must end at a point of time not remote from 1843, as $\mathrm{Wm} . \mathrm{M}$. lll er first tanght. The time is past to which the majority of evidence in our minds pointed for their termina-fion."-Advent Herald, Feb. 24. In a few weeks ater this, tine ofd chart is dra wn out from the mbbiah to which it hod bren exposed through neglect and uselessuess and hug up
in a conspicnour pluse in the meating for reforence gasin. and hated with joy at an old particulme frivnd. Not by all. for another division has taken place, which is another proof of the unsetted atate reapecting their trae position. A true position thoy have never had since they hegan to repeat their message after the Bridegroom came nind the door was shit. Their admission of the 2,300 days in the past neeessarily acknowledges the principal part if not all which we have claimed, or they may acknowledge it to he so without falfilling prophecy. They don't show what snuctuary is being cleansed at the end of these days. Lake shows clearly thit atter the door is shnt, those that are outside will begin to knock, and when they are denied admittance, they will tell of the wonders which they have wrought, and stik the roply will be "I know you not." Matthew is as clear. He says, "afterwards came also the other virgins, suyimg: lord, Lord, open to us. He answers, I know yon not.: After when was this knocking? Why, afor the door was shut. Now I ask if the door is not shmt before the second advent, unless this knocking afterwards can be proved to be after the change to immortality. And that can be nd. mitted only on the unscriptural ground that the wicked wiil he also immortal. But according to Paul's order of the the resurrection, a gulf will be beiween them inmediately, and those ontside cannot knock for admittance, bot we are told that their ory will be for "rocks and mountains to fail on them." Then the knocking will be in this present state as it has been, and now is, clamoring about the door, in fit vor of backsliders and sinners when they have hardly any fiuith respecting their own true position-changing the it slip beating to windward in a heavy head beat sea, losing ground on every tack. Some have attempted to show in l.ake xifi, that the 28th and 29th verses were a proof that this knocking would bo ufter the advent. I think it showthe reverse. "Weoping and gnashing of teeth," certainly is not knocking for an open door, but shows, as it is stated. that had already been done. What does the apostle Paul call an open door! He says to the Cor "Por a great door and effiectual was open nuto me;" xvi: 19: "How he (God) had opened a door of faith unto the Gentiles: Acts xiv: 27. "Praying also for us that God would open us a door of utterance to speak the mystery of Christ;" Col. iv: 3. "when I came to Troas to preach Christ's gospel, and a door was opened unto me of the Lord;" 2 Cor. if: 12,

Paul's open deor, then, was the preaching the gospe!

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with efrect to tho Gentilen. Now let this door be shut, and the prenching of thit sospel will have no effect. This is just what we say is the finct. The gospel mesage ended at the appointed time with tlie closing of the 2,200 days ; and almost every honest believer that is witching the signs of the timen will melmit it. 1 know it will be said "why you have, or would close the door of mercy!" There is no such language in the Bible. I have no desire nor wish in my soul to sce my worst enemy lost. I think I have made it manifest for the last twenty years, and am still willing to do what I em to save those that will help themselves. But I aum perfoetly sensible that it cannot be done only in God's appomted way ; and all that will walk under the shadow of his wing will rejoice at the fulfilment of his word, atthough their hearts may be burdened and pained at seeing the opposite in their friends.

1 think 1 have filly proved thite eighth way mark and high hieap in our pathway, thet the Briflogroom has come, the marriage is past, and the door is whut.
"Come, my people, enter thou into thy chambers, and shat thy deors about thee for a litte moment, until the indiguation be over past ;". Isa, axxi: 20.

## NINTII WAY MARK:-THE PATIENCE OF THE SAINIS KbEPING THE COMMANDSBNTS OF GOD AND THE PATME OR TESTIMONY OE DESUS.

${ }^{4}$ Herc is the patience of the saints; here are they that keep the commandments of God and the faith or testimony of Jesua;" Rev. xiv: 12.

Here we come back again to the history of the advent, at the closing up of the messages of the three preceding angels. When the last had delivered his message in 9 - 11 v , the same as brought to view in xvili: 4, John sees this company on the picture before him-ftie gaints in their patience 'keoping the commandments of God and the faith of Jesus." This is an entire different company from those that had just passed before his eye. These are some of the sanie company seen in the sixth voay marla; the Philadelplin Church. Jesus marks them by saying, "Becanse thon hast kept the word of my patience," \&ce. \&ce. Then, as we have shown, this church had come out of the fifth, the Sardis state, which we called the nominal church, precisely the same which the third angel speaks of an "having the mark of the beast and his image in his forchead and hand," in xiv: 9, that had just preceded the last. He marks the
time by phowing them to be in the pationt or trying time, juat where the Nirgine wers, placed ehor they came out of the churches in the fall of 1844 What wery they doing ! Wo nay hiny wore kepin: the hevump oly Sobbth. Iein knew porkety well whithio commmimentr of God wers. He sees them persacuted by the old dragon in the previona chapter, but did not any who and what they wore until he Had this view, only that they wepe a remumet (the laet end; after all the reat had been cut off from thom). Hore then in the xiv, chap. he desigunten them nuder an entire different character from their former associates. He conld not nor does he say that those from whom they had separated leept the commandments ; hpt this last company had been kesping nine of them, (or they conld not have been made volie, ) but Johu does not give thom or the others any credit for keeping a part, for James has said they were a perfect lase and "if we offended in ono point, wo phould be guily of all. ${ }^{\text {no }}$. Therefore as soon ad he snw them keeping the fourth commandment which had been trampled under feet, he cries out, "Here are they that keep the commandments of Gpd." Every person of common sense that read their Bibles must know that not ono particle of proof can be produced therefrom to prove that the keeping of the first day of the week is any more the keoping of the fourth commandment than keeping Thursday. Here, then, I prove. is the difference that John saw. Here our history comes in again to falfil this very point, as I have stated in my late work on the Snbbath, (see 58 and 59 pg .) and it binds down all the other way narks as it came to us, afer we entered the formace of afliction, and has been inerensing ever since. Does not this company which you cau and most likely do point out by name, in your diferent citiea and towns, prove to a demonstrution that the third angel's message is, and must be given before there could be a company found as stated in 12 hk w . This is the remnant that is to be saved out of all the great company that published the good nevs and glad tidings of a coming Savior. "Blessed are they that DO his commandments, that they may have right to the tree of life, and enter in through the gates into the city ;" xxii: 14 . Now this people are to be saved for keeping the commandments of God and the faith or testimony of Jesuq.
Then it will be very important to know what the commandments of God ere, neparate and distinct from the commandment and testimony of Jenua:
glory to him, for the hour of his judgment is come," in othe er words, "the end of nill things is at hand." We believg that Christ will come in 1843. It was hlso called tho "mide night cry," And who does not nlso remember the thousands of happy converts to this glorious doctrime, who began immedately to purffy themselven (as said the angel (iabric) by breaking ofi from all their sins and turning to (iod, so thint not only on the camp ground, bat from the highways, stages, steanthoute nuil rail cirs, tho songs of "Alleltin" to the Lamh, and phomings to the most high (iod, resounded and filled flee air ass we passed mong.Were theso people mad or crazy ? Why were they not
affaid or ashamed so to disturb their fellow passengers, who had paid their fare for quief and respectable accommodations! Becanse they belicved the Messane wals trae It said "foar Goil and give glory to him," and as they obey. ed, the fear of man dejarted. Some said we were craky -but we hecded them not. Mary say we are not cnly crazy, but fools, for the position we hive taken, since the lime past-lont this dons not trouble us much. We believe this will soon be theted, and we fenr not the result. How was it that the cily amboritics, and the railroad directors at the Salem depot atlowed so many handreds of these crazy famatios to fill up their torildings and re-conmence their mseting, in shouting and prasiang the Lord, for ahout wo hours, while waiting for the cars that lad lieen detained on the track? One reason no donlit was, they did not see that we were so much ont of the way, as they were reaping such a rich harvest from our fare; and annther perhaps more powerfilreason was, that they were consicted of thic truth of this doctrine. For necording to accounts from there soon ater, it appeared that the whole city was shaken by the rower of these truths. Here 1 binght go on and maitiply facts of $n$ similar nitare in various places, but my limis will not idmit of it.

Itaborers now leggiu to cross the grent Athantic to soand the ery. A paper was now established in New York ealled the "Midnight Crv." As 1843 was nshered in the cause aremod to move forward with redoubled energy. It might well be said the virgins now took their lamps (bibles) and went forth to meet the Bridegroom. Do not forget this literal filfilment. Hardly an Advent believer in their camp and conference meetings, but what was farnished with a bible, to give them light.

> As it is not my object to enlarge this work, I would
again refer the reader to the Advent Shield for informa: tion respectivg tiso many interesting events, scenes and disappointments, in the paswing of times, and so fortb, down to the end of the Jewith year 1843.
Before the close of this mamorable year, conferences were appointed to be held in New York, Philadelphin. Baltimore, and finally Washington city; to rearouse and give the last warning, and if possible, wake up and warn the honsulold of Casar! This was a senaon of thriling interest to all who truly loved the Second Advent doctrine. Br. (G. and myself passed throngh these cities down into the sliveholding Striten, where we found a great number of white poople ready and ansious to hear the doctrine. But the poor slayes fensted opon it, eppecially when they fearned that the Jubilee was so near at hand. They seemed to drink it down as the ox drinks water, and from what I have since heard, I bolieve that many of them will be ready when Jesns comes. As we passed ou from county to county holding meetings, I one evening observed one of my hearers very uncasy. Ho came and got hold of me after we had closed the meeting, and says, you must go home with me. 1 introdnced him to Br. Gurney, my companion. He said we must hoth go. After we were in his coach underway for his plantation, he asked his wife if slo remembered the dream which he related to her a few mornings since. Slio said yes. Well, said he, these are the two angels which I saw in that dream. Snid he, while I was listening to your discourse, I thought I had seen you before: I now remembered my dream of seeing two angels, that had come with good news, or something to this amount, and much more that I don't now remember:Your countenance and sallow complexion and maris (mole) on your check, are clear and distinct. This so impressed lis mind and his neighbor's niso, to whom he related the dream and the messige which we had delivered in five lectures, that we were earnestly entreated to stop and give them more light on this absorbing subject. We could not, for our appointments were ahend. What gratified ns much was, he gave his coachman orders for all hands (his slaves) to go to meeting. This was just the thing we wanted, for we bad ere this learned that the great burden of our mesange was to the down trodden and oppressed slave, and we trust some will be foond there on the rock when Jerus comes.

When we had closed our lectures here, the coach of Mr

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I. wan ready to convey masomo 25 milea to our next appointment. He related his dream to his friends on the way and where wo arrived, and said at parting, "I would be willing to sacrifice all the property I have if I could be in your nituation." God grant be may be saved, with all that are willing to make the like sacrifice.

An I bavequoted Peter on this subject to prove that these things would be in the last days, I will just give one instance mors. nut of the thoussinds that conld be named of others, in different places, during this loud ery. For some days my mind had been burdened to go with this messige to Block Island, some thirty miles at sea from Newport, R. l. Objections and entreaties were thrown in my way, as in the case just mentioned, that the slaveholders wonld kill me because I was an abolifionist. Now there was no way for me to go in the dead of winter, and 1 never had been there; I was an entire stranger, had what did I expect to do I I said, God knuws best. This I know. I have got to go. Finally all objections were removed. If God had directed it was of course my duty. Throngh much anxiety and diflientty, mingled with joy and satisfaction, I at length reached there on Sunday, (not the Sabbath) I met the Mimistor and peoplo coming from the forenoon meeting. After making myself known to the Minister, he introduced me to his Deacon. He said to his companion, (as it was soon afterwarils told.) that is the man I saw in my dream, I think he snid night before last. He came here from the east to bring us netws, or good news. The Justice of the pence pressed me to call and see him. I did so, and at the time 1 had in my hand an anbount book. He scemed somewhat agitated, and wanted ty know the contents of the book, and if I would not let him have it. Said he, it my drean the other night, I saw a man here from the east with good news : he held a letter in his hand, and I thought there was fifty dollars in it for me, A few evonings after this, to the astonishment of his neighbora he hearily confessed his opposition, came over on the side of truth, related his conviction for sin, his singular dram, and conversion. Suid be, my drenm is interpreted: inNtead of fifty dollars in that letter, (1 had been reading some extracts from Liteli's Prophetic expositione) I have received that which is fir beyoud it, (or to this effect,) and that's the man I sate. From another neighborhond hero, a woman related ber dream about the chart, whieh had not been known here, described it hung nip over the pulpit; as the
bouse wan constructed, this wan the only place we could hang it to explain from. Now I ask, were these druams from God or the Devil, judge ye 1 One thing I know, that I nover had auch a pecuhiar burden for any other place I vinited daring this loud ery, ns these two, and I retarned perfectly fres and joyful, satisfied in my own mind that I had obeyed the Lord, and ull that was done would reault to his cause. "To him be all the glory, Amen."

All attention was now called to the loug laoked for poriod, the end of the Jewiah yoar, viz, the 17 ih of April, 1844. We had rallied down to this point bueyant with hope and expectation, bible in hand, (our lamps) to meet the bridegroom, expecting certainly that "the Lord himself would descend from heaven with a shout, and Daniel with all the just would stand in their lot." Here we were sadly disappointed. But the world was glad, and said to ns, "You see now what we told you-we were right. Yon thought you knew more than your neighbors. Now go and make your confession, and be reinstated in your former position." Though we could not sce the meaning of our disappionted hopes, the response to our prayers was, God will justify his word, it will " not return to him void." And this word said, " I hight is sown for the righteons," (Prov. ii : 7,) and our minds were made up to wait for it. Onr rojly was, never! Go back to what ? darkness, confusion, Babylon! No, no. We have experienced too much of the power and glory of God, to yield this ${ }^{4}$ waymaxk in otur pathogy " If there is no other diflerence to he seen, one arark is sure; we have been henest, and you have not.

At this important crisis the "Advent Shield" was published, reviewing all the past, especially the prophetic clironology, showing positively that our maymark was sure.

Now sno puge st7. 't We look upon the proclanation which has been male, as being the ery of the angel who proclaimed, "'The hour of his judgment is come." (Rev, xiv : 6-7.) It is as sonnd which is to reach all nations ; it is the proclamation of the everlasting gospel. In one shape or other this cry has gone abroad through the ourth, wherever human leeings are fouml, and we have had opportunity to hear of the fact The story for instance, which was started by the New York Sun, that Mr. Miller had fixed on the 28 d of April, 1843 as the time for Christ to come. There was scarcely a place known, where this report wna mot heard, and an interest awakened. Again, 9ed page-

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" No cause of a moral or raligious character, probably, evwr made so rapid advances, as the cause of Adventism. Its votaries have usually been the most hmmble, pious, devoted members of the different churelies, men nud wowen who love their Lord, and to whom the thought of his glorious adrent has been a source of the sweetest plensure. Never have as set of men labored more faithfully and zealously in the canse of God, or with purer motives. Their record is ou high."

What shall wo say more? What need of multiplying more tostimony to prove this point I All advent liefievers have agreed down to this point. Here then we say is domonstrited our first great teqymark with heups to sustain it. Not heaps of stones, but scripture testimony, proved out in our actuil experience, which has so completely bloeked up the pathecuy, that it cannot be retraced bat at the utter destruction of the whole man, body, sonl and spirit. This vrings us to our

## EECOND WAYMARK. TARRYING OF THE

## BRIDEGROOM.

Matt. xxv : 5. "While the Bridegroom tarried thoy all slumbered and slept." In overhauling our dead reckoning, and re-examiming our past observations, we could discover no mistake. But we did discover one thing which was to us a clear explanation of our text, at the same time so simple that the most we could say about it was, that God had withholden our eyes from this point as he did the two disciples in eompany with Jesus at his resurrection. And this was that six monthe had yut to be added to the prophetic periods before we conld mpelso them out fill and completc. For instanee, we now conld sec clearly that it wond bake evary hour of 457 B. C., and 1848 yents after. to fill tup 2300 diys or yeurs ; and so of the seren times of the Gentiles: 672 B. C. aud 1843, was only 2520 as given on the chart. Here we seo plainly that the commandment to rectore and build Jernsalem, did not go forth mutil the middle of 4.57 ; and so of the captivity of Manasseh, B. C. ti77. And also that the 6000 year of the world could not be complote until the seventh month, where it commences.

That the ten Virgins, a company of Second Advent believers, had beon out with their laings (bibles) to meet the Sridegromm (Christ) in 1843, was not doulted. That he torich, that is, came not so soon as they expected him,
was also clear. That this company became drowsy and fedt aslecp; and conmequently lost a great part of their interest in the doctrine, and evpecially on fime, wus aferwards fully demonstrated, first by the publication of a letter from one of our leading messengers (Wm. Miller) in the Advent papers, which stated that we must now look for the bridegroom (or Christ) every day until he came. This was generally ndmitted, but was soon proved to be a great mistalee ; but it wan hiout the bext we fonew st that time, (May 1844) for while we were in thin stupid, Hark and still time, (Minuigit) a cry wan raised, which elearly proved that the Bridegroom could not come until at least threes monthe,
Secondly, by the tens of thousands of confessions which these very sume virgins made, at private and generul conforence, ind camp meetings, after they were aroused by a cry at Midnight. So clearly was this part of the parable filfilled, that I can now hardly remember an individua! among ail the virgins, that did not coufess (and many with pungent sorrow) their stupidity and loss of interest in the doctrine and time of the Advent. It may answer for individuals who seldom visited our general meetings, to deny this fact, but any one who frequented them at this crisis, most have had their ears closed, and been fast asleep, not to have witnessed the multiplied and continual eases of this kind, in all parts of the meeting. But why need I labor any further to prove what almost every living virgin in that company knows was their experience. I think it would be as easy to prove that we never had any meetinge after April, 1844. I think this, with what farther additional evidence we shall offer in another place, will sufficiently demonstrate this second ranymark in our pathway, during this judgment hour proclamation. For we did clearly and literally, according to the representation of an Eastern marringe, fulfil the text in the 5v.; viz: became drowsy and fell asleep, while the Bridegroom tarried,

## THIRD WAYMARK. THE FALL OF BABYLON.

"And there followed another angel, saying Babylon is fallen, that great city. (What for 1) becanse she made all nas tions drink of the wine of the wrath of her fornication." She has made all the world drink from that cup of poison. Rev. xvii: 4. Hence as John says, "the inhabitants of the earth are made drank ${ }^{\prime \prime}$-and the only remedy pointed

Out by God to heal his people of this awful malady, and make them suber again, is to come out of her altogether, for while you stay there you will be continually drunk with her poison.
I feel that I have now come to a waymark which has been represented under so many false colorings by the majority of these messengers, making it very difiente for all the honest hearted to keep their eyes upon it long enough to be filly satisfied of ite identity, that I need wisdom from tiod to direct, atid by his help I will try, thot to go alt over the ground, which has been ably done lyy the minority, but touch some of the poists, and show it fiffiled an it stands in our pathway. 1 at first supposed that this should be called the second waymark, instead of the tarrying time ; but 1 think it will be seen where I have placed it, by the time I have described the fifts waymark It is true it began to le seen lefore the second one, bot its prominency wasnot fully discovered until we had passed the most trying part of the tarrying time. "And there followed another angel"-that is, daring this jodgment hour ery, some of tine same messengers, with others that had been joining the ranks conmenced the second message, saying as in the text. "Babylon is fallen." Muny of the prominent and leading ing cht or mossongern, utterly rojected ilin messoge, wifle silhers were hirdecect and pinted to be dilivaredThim mussage began to be heard in the fall of 18:83, and ins creased in proportion to the firat, dowit to ile barrying time. Here the subject began to be pretty thoronghly discassed, lmistill a great number of virgins could not, or would not understand it, on account of the difference of opinion araong the messengers. Not that any of them donbted the uressagel being given, for that could not be disputed any more than the first ; but what the seriptaral meaning of the fail of Babylou was. As the Advent Shield was introduced lore in the tarrying time, for the especial purpose of revinwing all the past, so that our standard may bo perfect and clear, this subject was canvassed nuler their iv. irticle, paga 112. What is Baloylon, and what is the fall of Babylont

 dore; the authors of thix-tandard work "pposed the piveng

 and fusty * the Worfor lout those that had beeo hurilen: ed sith this suloject and f, lt the cry in thean, imisted upon
it that theac were mistaken, for Josus had said, " 1 f any man will do his will, he shail know of the doctrine whether it be of God." And thoy knew perfectly well that thes had not been to Bubel, nor into the Catholic church, nor to the city of Rome, to preach this doctrine, neither were they burdened to preach if to all the world ; but to the orgranixed charches, where God's people werv. It now betran to be more clearly discerned that the standard work fad not given the scriptumal exposition of Babylon and her fall; for the mighty cry of these flying messengers with this second message, lregan to make the nomimal organized charches tremble to their foundations. At this crisis another effort was put forth to check these disorganizers. Mr. Mifler now came out with a different oxpostion, showing that Bnbylon would fill twice-first on the French Revefation, in the eighteenth centary, secord at the final dertruction of all things. It why clearly seen that this position, il follotved, would preclude the necessity of the 21 and 3 d messages that were to folloro the first, in Rev. xiv : 6, 7, until the saints were inmortalized. And yet, in other parts of the book (from which I shall quote by and by) be clearly showed that this was the time for the message, and it was actually being given.

Subsequently he came out again with his view of Revefations xiv: $6-20$, where he says, " I regand the wonau of unystical Babylon as the fallen church, and all churches that liave the papal spirit. Bat it does hot follow that there can be no charehes that love the Lord in sincerity." I wonder if there is such an organized church to be found. I think this globe will be searched in main for it.

He further says of the loud cry (first waymark) in Rev, 6.7, "that it will continue until Christ comes in his kingdom. The 8 d message in 8 v , the fall of Babylon, will take pace after Christ comes. And firther, that the amgel in xviii: 1, 2, is the Lord Jesms descending from hevaen to take the kingdom. When the angel has declared or is declaring the fall of Babylon, then the 3d angel that followed the $2 d$ in xiv: $9-12$, is showing the fate of his worshippers, and that the 13v. is the resurrection, and mest synchronize with chapter xviii: 4. come out and meet him in the sir, $-14-16 \mathrm{v}$, here the saints are called to meet the Lord in the air. Then $17-20$, the vine of the warth is reaped. And this is the barmonions view of the scriptares. To apply them diflereatly is to pervert them." Now I don't mean to poryert the scriptures, neither can I
receive this exposition. It is evident from xvifi: 4, that God'n people are called out of Babylon, that they may not reccive of her plazues.
How many plagnes are there ${ }^{\prime}$ The angel says seven. Now, Mr MI . anght at that time, and I nuppese filly beliered, that six of these plagues had beou poured out. Indeed, he has taught in his book, and iu almpst every place where he has given a course of lectures, that the seven thst plagues (of course there are no plagues to come aller the list.) would be poured out before the gathering of the saints.The xvi. of Rev. shows clearly that six of them will be ponred out hefore Christ comes (See 15 v.) Now if God's people have to wait in Babylon until Christ takes them out at his coming, as he has here attempted to show, then there is no meaning to the 4th $\mathbf{x}$. of the $x$ vifi, where God's people are called out of Babylon to get elear of, or receive not of her plagues! Now 1 nay this same toxt is proof positive that God's people are callod out of Baliylou hefore the lust plagues, are poured ont. And Babylon cerrainly falls before the Third A ngel culls them out.

Once more the voice from Heaven in the v. says, Come out of her my people. Then if they do obey this call, it certainly will be na net of their own will in obedience to the voice from Heaven. Will it be so when Christ comes 1 No, No. The Apostle tells ns that the Snints will be clanged in the twinkling of an eve, and caught up in the nir. This certainly is a very differemt act. The Saints then must go, they cannot avoid it. So we seo that the meaning of the text is voluntary, while the latter is involuntary. This is only a few out of the many difficulties that this exposition would bave led God's people into if they had followed it.

For it was very evident that there were two processes for Babylon to pass throngh. After her fall and God's people bad come oit of her, viz:-1st, "ntterly burned with fire, $8 v$. 2d, found no more at all," 21st $v$.

About this time (Suguat 1844] ton thousind extras of the Voicc of Truth, contmining the Pditors, 8. S. Snow, and Geo. Storr's Expositinn were published, ahowing what was- Babylon and her fill, de. \&c. This presented the subject in so clear a light, and in accordance with the leachings of the Spirit, that it was clearly seen that Bnbylon, that great city symbolized by a "woman seated upon a searlet colored beast, fall of names of Hasphemy having neven heads and ten horns," represonted the uxist-
ing organized Churcheo whiti hed pow fillen in coneeQuence or rojecting the dearing of 0 he Second Advent of our Suviour, whioh wan now boing given by the meseon gore that wore flying through tho indits of Heceven, jatt an Fha Jowh charci foll hy the rejuchon of tho Pirut Advemt, Sce 238 Glmpr of AFach.

And the Beast with seven headsand ten horms, on which the Wornase is seated, represented, the kingdoms of this world dranken with the wine of the wrath of her fornication." The Womana symbol of the fallen Church, and the ten horued beast a symbol of the kingdoms of this world, just as closely wnitod and connected together as the woman is aeated op the beant ; witness the innion of Churchand State sepported by civil, Military and Naval power throughout all Cliristendom. Sefll it is dificult for many to distinguish between the womnn and the beast she is meated apon. They confound it and make both one. Now to illustrate by a simple figure, for instance, a beautiful, gay dressed woman seated upon a greay red horse ; now who would run the riale of being laughed at for his ignorance by saying that the horse aud woman were one, and there was no distinction Would it not be perfeetly plair that they were two. The woman riding and the horse carrying the woman,-so closely connected tosether that when the liorse moved, the woman moved also. Would it not be olovions, also, that they were born separate, and at a certain period of time the woman mounted the horse, and hecamo thus united and closely connected with him by riding alont the world at her pleasure. Well then, in the same point of view, look at this mystery Babylon, which is called a Woraan, and this ten horned beast (which represents the kingdoms of this world) carrying her. In Rov, xiti 6,14 , John sees her entirely separate from the beast, struggling with these beastly Jingdoms to mnintnin her honor and purity. Sle was then the pure Chureh. In the x vii chap. the Angel directs John to look at her again. She is now about 1260 years older than when he last descriled her. What a mighty change. She has now become a drunken harlot. With wine 1 No. But with the blood of God'a dear children, v. 6.-Math. xximi: 34, 35. Sle has made the inhabitants of the earth drmak with ler poisonons cup, and the kings of the earth while thus intoxicated, have ualawfully united with her, and she rales, guides, and directs them as the rider does the red borse. Sbe is now riding at her leisure full of

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anmes of Blasphemy, with thin Blasplemons name writeme on lier forehead, MYSTERY BABYLON, THE GREAT, THF MOTHER OF HARLOTS, AND ABOMINA TIONS OF THE EARTH. The 15 th $v$. interprets the 1st v - and says, "the waters she sets upon are peoplos, and multitades, and nations and tongues." These are what the beast represent.

The woman which theu mesent is that great eity which reigneth over the kings of the earth. That is they are perfectly under her control. This is the Mother, Papacy, Catholiciem, or the Roman Catholic Chureb. She has harlot children, what do they represent, the Protestant and Greek Church, in all their organizations, represented is the xviii chap. The Angel says they were divided inte three parts, xvic 19. It is brought to view' again in the xi: 13 th v , where it says "a tenth pari of the city fell." This we have invariably taught, transpired in the Ievolution in France not far from 1790. The tenth part of what city fell then 1 We may the tenth part of Babylon. How did it fall, did the territory of France fall $!$ No. O, that would be a tenth part of the beast. Dic the people fall 7 No. What then ? why Eeclesiastical power both in the Catholic and Protestant Church was destroycd. Was that the couring of the Lord? No, it was the fall of the tenth part of Babylon. Here then is further proof that the fall of Babylon is not the coming of the Lerd. But it is demonstrated to be the organized Churchos.

Still farther, necording to Jolm's vision in xiv Rev. Balsylon must fall in the time that the angel is giving the everlasting gospel at the hour of God'a judgment, for he says there followed another angel. Then thin was the next thing in ordor after the flying messengers had fairly introfinced the Second Advent doctrine, and it was opposed and rejected by the Churches. Their cry was, Babylon is fallen, is fallen. She has rejected the message of the angel that preceded. It was now obvious that she had drank from the cup of poison so deeply, that it had seized ler vitals. She therefore utterly rejected her coming Lord.

Where is the history for the fulfillement of this event? Wnanwer. Just where if ought to be, following in in orier, and no whore elae. Then thix subject firet begua to be introdeced in 1843, the mast of the profeserd nominal Churches had clored their doorn agninat the Second Adrent doctrine, and began to treat the mennege with
meorm and contempt. Some however looked at it more favorably unbil thin memage was prenented in a clenr Scripturnal Whth, they then withdrew, and began montly to deelire it the doctrine of the Devil. At thif crisin the loud cry from Henvep war nerventy prochimed, come put of her my people, sen. Now 1 do not remember of heming an objection nagaings uis doctrine'r being in ito proper prdor. If, as we filly believed, wo word now called to go put and meot the Bridegroom, this mesengs wat jaut whore it shonit be; of his, thoussndn were folly convinced, for it was just what we were witnessing all around us, and it Filly necorded with the predictions of laviah, Jer, Paul and Johin. By comparing Rev. xvii; 2, und xviin; 9, it was perrecly evident that no other body conld commit this sin of formication with the kinge of the earth; but the organized Churches, the profemed people of God, whone law requires them to be meparate from the world. Every sect is therefore guilty, for they are anlawfilly connected with the world, and consequenly condemped.
This way mark was now diftinclly seen in our pathway, linked in with, or chained on to the judgment hourcry, and stretching ita way through the tarrying lime, erying mighlily with a atrong voice (as was never heard before, nor since Oct. 1844]. 'Babylon is fallen, is annen, and is become [not will be] the habitation of devill, and the hold of every. foul spirit, and a eage of every unclenn and hatefri lifirs.,
This messege now moved onward with the rapidily of the fins, causing in its fig git the nominal Churches to shake mightily. How then contd this be the work of the Devil as many have said. Even the Churchea themselves knew that it was the very opposite of any ching the Devil had ever done for them before. We will now look at what was set up for the

## FOURTH WAY MARK. COME OUT OF HER MY

 PEOPLE."And the third angel followed them, saying, with a loul roice, if any man worship the beast and his image, and receive his mark in his forchead, or in his hand, the same shall drink the wine of the wrath of God, which is poured out without mixture" (no mercy with it as in instances lefore.) This is the third message given by all the mes sengers that fully believed Babylon had fallen in Rev, xiv: 9-11. They showed up the awfil plagues that would
20. These scriptures show a work to be perfonned bufore the Renarrection. And that the Daugher of Zion is the true Church, the romnant that have literally gone out of the City [the Clurch] into the ficld and into the woods, and there held their meetinga.
Paul is in perfect harmony with thene, and sayy, "Whercfore come out from among them, and be yo wop: arate, saith the Lord, and toueh not the anclenn thing, and I will receive you, and I will be a Father unto you and yo shall be my sons mud daughiters, suith the Almighty," 2 Corv vi: 17, 18. Come out from what Sec 14 v. from narighteons unbelievers. Where did Puol lenm thit doctrine before the vinions in Rev. was given? why from the very Propbete which I have guoted, and he maker the promise strong by quoting God for hif nhithor. I suppose that every rationn! porwin would admit that these prophecies reflaing to this subject wonld be tulfilied, nnd tfis message given berore the second alvent. Says the render, the great diffienly with me is that I don't believe that this Woman, onled "Mystery Babylon," "the great city," represents the present organizedcharches. Well, butitrepresents someching. O jes. What is it, dhen? There are but four names or expionitions given to Babylon that I have read of, and only one of these can be the trie. Let as try them by a simple rulc. The first, then, as the Advent Shield mayn, the kingdoms of this world are comprised in Babylon. Isaiah says, "depart ye, depart yo, go ye out from thence." Jeremiah says, "ilee out of the midst of Balylon -my people go yo onit of the midst of her, aud deliver ye every man his somil", Michi says, "For now shalt thou go forth ont of the city" (Babylon). Znc. snys, "Deliver thy. self, $\mathbf{O}$ Zion, that dwellest with the daughter of Babylon." Paul says, "Come out from among them, and be ye separate." The last ery is, "Cone out of her my people, thal yo be mol Partakehs of atr stss." Come out of whit? Why ont of the world !-lint is what the Slifeld calls Babylon. Where alall we go 7 We are told, up to meet the Lord in the air. Who eannot see, to say the lenst of it, that min in aperversion or these texta? Do look at their connection. explecially the three last. See if they will compare with 1 Thes. iv: $16-18$, and 1 Cor. xv: 52 . Besides it is ntso. Lately contradicting the angel to say that Babylon is the kingstoms of this world, for he siys the woman (Babylon) which thou sawest in that great ciry which reignech orer tho linge of the earth." How can a city reign over itself?

2d. Babylon han alno been called the Gity of Rome. "Come out of the City of Rome, my yeople.". They ure not there, nor have not been for many handreds of years. Anti-Christ reigns there.
3d. The Papacy or Catholic Charch has been ealled Babylon. Come out of the Catholice Shurch, my people. You call in vain, they are not there-they deparled from her certainly 300 yeara ago.

4tif, And last, the ery is mide in the Protentnott churchen; "Come out of her, my people." What is now the red sponase 1 loud ery in to them, ami the ehurolica which they are leaving ars follea Babylon, hesames hey hive raiseted the mes: mige whioh proceded this. WThe hour of his judgoment is come." Their houses which they have olosed against this second advent menage, are left unto them desolate. God has left them in their own confusion. And hundreds and thousands of them lave in thrir own way aelanowledged it since. 1 ask you to look hack to the summer and fill of 1844, where you see the filfilment of this 3d nngel'e message in a mont wonderful and striking manner in almost every town and city throughout New England. Why not komo where ole juit es weil 1 Ilectuse fire gun wat darkenod hore, attd fient fyint mesengen, at I have shown, maltipliod and congregated here-mad thits being the lightest opot ander the whole henvens, the anguln were esen, their mosuage was hand firm liere, and then carried ont to then pemost hounds of the earth. It le true, many of the Middle and Western and some of the Southern States, and the Canadas, have joined. Some objoct becanso it was not simultaneons in England, So. If you will look at the xiv, ch. again, you will see that it was the first messenger only that sont his message to every nation, kindred, tongue and people. It has also been objected that the dark day was no sign, because is did not extend farther. But who does not know that it was more striking on this ascount ? If as mnch as I have now written in these forty lines, had been recorded as history some few years ago, say relative to the sounding of the sixth angel or the sixth plague, who would have doubted? What then shail wve do with the above, and much more that comld be added, if necessary 1 Ycs, 1 conld begin to call names, and show from seventy-five to one handred living enses in Fairhaven and Now Bedford that fulfilled this propheay, that either caune out or were turned

## EIETH WAY MABK-A CRY ATR MIDNIGHP

##  gnya out to megot hims. That all the troging arone, nthd

 tfinmed theis lating"Y/ofo hive etrundy thown thit the
 tober, 1844. The Midnight of this Hark stupid time would be about July 20th. S. S, Sudw gave the true Midnight Cry in the Taberuacle in Doston at this time, and it waa reccived by the virgins in a different light from what it ever was before. Hesayy he had thean trsing to malee peopla boligue it befors, but without criots, becmtors it was cenerAlly Weliaved at we had been tanght from 1840, that the Mrflnight Cry embraced the whole anbjeet, wven bortaning brok to the Fronch Revolution, and mome were old enough to belleve is hat began in the thyy of the Anomt5. But now it legan to move with rapid progrees. God was giving the light by his spirit. I well remember some that I conyersed with, who relnted the wonderful manmer in which they were moved upon to examine this subject before they had heard it.

At Midinight, in the dead of the night of this tarrying of the Bridegroom, "the cry was raised," which caused great agitation and excitement, fooking with unpuralleled interest at dufinite time, 10th of the seventh month.

A camp meeting was held in Concord, N.H., somewhere about the first of August. Here, as we afterwards learned, the cry resounded thromghout the caing. On the 12th of August, another was held in Exeter, N. H. On my way there, something like the following seemea to be continually forcing upon my mind. You are going to have new light here, something that will give $t$ new impetus to this work. How many thousand living witnesses there still are scattered over the land that experienced the manifestation of the spirit's power in applying to their hearts the many scriptares, and especinlly the clear exposition of the parable of the ten virgius, at that meeting. There was light given and received there, snre enough; and when that meeting closed, the granite hills of New Hampshire rang with the mighty cry, Behold the Bridegroom cometh, go ya ont to tmeet him! As the stages and railroad cars rolled away through the difforent States, cities, and villages of New England, the rumbling of the cry was still distinctly heard. Behold the Bridegroom cometh! Christ is coming
on the tenth day of the seventh month! Time in whort, got ready is get ready if In a fow week this Way Mark, ilke in Bencon to the tompent-tosed muriner, wat etearly seen in our pathway throughout Now Ehghand, and onward into other parts as it moved by camp meetings, conforency and paper. Here S, S. Snow published the truo mitnitht cry (Aug. 22, 1844). Them all floge rivgime armond trim.
 etriking and perfect filfilmont. Who doer not ntill rememBer how thin mesage flew as it were upon the winge of the wyind-men and women moving on all the cardinil points of the compase, going with nil the speed of locomotives, in steamboats and rail cars, freighted with bundles of hooks and papers, wherever they went distributing them almost as profusely as the flying leaven of autumn. They purported to contain the last warning to a guilty world. (How true it was that this was the last warning that they would ever receive from Advent believers.) And then the agonizing prayers and entrentiea for our families; friends and brethrea. Surely time chn never efface those deep improssions, besides the deep searchings of heart and consecrations of time, friends, property, ill, all, to God. Surely here is where we put on the wedding garment"roas made white." Say, was this the work of God? If you deny it, yon veto the work and power of God among men; in every age, and make religion a something which man can never understand. Admit that there were frailties and improprieties in some, and every thing else that man is subject to; butit does not follow by any means that nill was wrong. By tho assistance and grace of God, I feel bound to say without fear of contradiction, that this mighty ery was the power and work of God. I should peril my soul to deny it, and so will every honest hearted one that had any thing to do with it. Why, if this was not the work of God, then I should forever despair of finding the road to heaven. I say again, in the fear of Him before whom I noon expect to appear to receive my fimal destiny, it is downright infidelity in any Advent believer to doubt this being the fulfillment of the parable of the ten virgins. It was the only conclusion we all came to at the time we felt and knew the most about it that we ever shall in this mortil state. And surely none could anderstand it better than those that were burdoned and pained to be delivered of this ery. For eight long monts we were deconsing the
subject of this ery, while the nound wan rolling away in the dietant heavens. "Awd the footish said to the wise, gire us of tour oil,"-that is, give us your evidences, your light; we want preparation. "Buy for yourselces,"-that is, wearch your Bibles, pray God for grace to prepare you. "While they wept to buy, the Bridegroom came, and those who were ready went in with him to the mirringe, and the door was shut. ${ }^{.}$Here is where the division took place which was so clearly manifest at the very close of the cry, and has. been a standing witmess ever since. While they went to huy -clearly showing that they left a part of the virgins in the right position with oil in their lamps waiting. When he comes, this waiting party go in, and the door is shut. Where are the others? Gone nway for oil. Do any of my readers sny this is not fulfilled ? 1 usk what you meaut then, by writing, preaching, talking, and larnenting the division among the Advent people ? Don't you see that you are to the very letter acknowledging the firct. But you say that would be acknowledging onreclves the foolish sirgins. Whether you do so or not the parable and our experience make it clear ; each party had their choice.
"Afterwards came also the other virgins, saying master, master, open unto us." After when is this knocking ? Why it is after the door is shmt! And there has been a clamoring at the door ever since the cry was finished-a perfect fulfilment of the payahle in sll its features. This calling for an open door after it is shmt, must certainty be fulfilled here, and not in the air. Thms we have the fikeness perfect and complete. Suppose, for instance, your likeness should be painted, leaving out your hand, foot or nose, or even the expression of your eyes, you would detect it in a moment, and point to the defect ; and whan fimislied, you would pronounce it a likeness. Well, this parable is a likenessof the kingdom of heaven, and finishes after the 12 th verse, and no where else, And unce it was finished, we were ai feast eight months oxamining ite featuren, and proving it to be what our lord had told us it was; and how many thonsands there were that prongnneed it a perfect pictire. Many have since denied it, but that has not alfered the features of it in the least, nor produced the least proof of when, or where, or how, this cry with all its appendages will or can be, in the finture. I say there is not faith enough in all those who have dnubted this mighty work to put forth one hundredth part of tho energy, moral courage and zeal, to do phis work an it was doue
wher accomplished. And I ask who eleg will attempt it t Not those surely that believc it is dome. Neither the world hor sach as have pronounced it mesmerism. You know very well that God has called out a people to do his work and will ; and think you that it will not be done in scriptural order, and in the right time? It has been and it is the height of folly to believe that God will reguire his people to do it twice. I know it is triumphantly stated that the door is not shut; and there has not been any striving to ppen it, becausc no one would ask for admitance until they linew it was shut. They mast know the fact first, say they. nnd they say they do not. Answer, why did not these same virgins understand that their vessels were empty of oil before it was too late? So in the ease of the clamor about the door-they have then alreidy been proved to he foolish virgins, and are as fikely to make a fatalmistake in this part of the parable as the other. How many scores of writers zould be called ny here, if time and space would admit of it, to prove how clearly this cry has been fulfiled, and that our work ended here for the world. I know it is called infidelity now and even blasphemy to say so. Admit this to be your testimony thea about all tire advent believors have committed blasphemy, and their confession to backsliddon advent blasphemers or a fallen church and guilty world, will never atone for one sin or back track which they have taken. Onc leter out of the many was joyfilly received, (though it came at a late hour, ) as so muchinterest was felt for the anthor. I will extract a few lines: "Oh the glory I have scen to-day. My brot er, I thank God for this light. My soul is so fill that I cannot write. My donhts and fears and darkness are all gonc. I see that we are yet right. God's word is triee; and my soul is fall of joy. Methinks 1 hear you say, Br Niller is now a fanatic. Very well, call me what you please ; I care not. Christ will come in the serenth monith, and will bless us all. Oct. 6, 1844." This dien was our mited testimony respeoting the tallost seay mapk in our pallway. Sce lsa. xiv: 31 and $40,2,6$; Jer. viif: 18, slvi: 12; Lam. ii: 19.

## SIXTH WAY MARK-PHILADELPHIA CHÜCCII,

> "And to the Angel of the chnrch of Philadelphia write." Withont doubsthe socond and third chap. Rev. is a briet history of the charch in its seven states or stages down to the recond coming of Christ Proof-According to the
epistles the Asintic churches were extablished by the year A. D. 64 . About 24 years after this, John receiven thin revclation respecting thinge which mwst shortly come to pass, (not what had been 24 yeare before,) 3 ch. I $\mathbf{v}$. Thin revmhation is a prophecy of things past, fike the seven churches in Asin, which were alrendy revenled. If the whole book is a prophecy, how can these two chapters be in the past : and why not address the other nine chnrchas which Panl speaks of. Again, after Jolin had seen the whole in the eed chapter, it was said to him, I. Jesus, have sent mine angol to teatify nuto you these things in the churches. The whole messonge wus then to the churches. Once more-it is ciear that the signification of the names of the seven clurches in Asia describe the spirit and qualities of the sevoral periods of the christian church. Lastly-if the nbove statements are not true, how can we npply any part of Revelations to the present state of the chirech? As the present state of the Philadelphia Church has been discussed, I slaill be brief. Thee fifth state or the Sardis Church looks just like the nowinal chareh in 1844, when the third nngel in Rev, xis. were giving their messnget: "The hour of his judgnemt is come," "Babylon has fallen," "Come ont of her, my people," connected with the overpowering, soul-stirring Cry at Midnigh, "Behold the Bridegroom cometh, go ye out to meet him." Here the Sardis Church was shaken to its centre; and all those who really helieved these messages began to move out. It is frue some were drove ont; but no matter, the work was done. Those whose fear of God rather that man prevailed, cleared themselves from the different orders and sects, and with all their various views, they liere merged and united together as in apustolic times. Creeds and formulas passed away like mimoke from the chimney. They gloried in this heavenly union, while rallying under those flying messages. And every feature denoted the trne state of the Philadelphin Church, which signifies brotherly lore of the fraternity. They read the promises of Jests, "that there were a few names in Sardis which had not defled their garments, and they ghall soalk with me in rhite, for they are worlhy." We thought then there was more than a few, but we are pretiy well convinced now that Jesus was right ; for he says, "I known thy works, behold I have set before thee an open door, and no man can shint it, [if it had not been open, how could those that were ready in the parable have gone in ?] for thou hast a little strength, and hast lerpt my worn, and hast
not denied my mame." Rev. iii: 4, 7, 8. The 9th to 13th $\mathrm{v}_{\text {, }}$ whow what will follow, viz. the confersion of them that lic. The mafoty of them that hold fast their experience (don't yield up their way mark, , their crowning promise of the hame of God, and Jenus own new name. Here is positive proof of division or separation which makes the Lnoz doccan state of the clurch, which Jesns says he will ' Spue out of his month for leing neither cold nor hot " Awful condition indeed. Where nud how does this heavenly nuiou dissolve, and show a state of neither cold nor hot ? Neither one thing nor yet another, believing past experience and yet not heleving, looking for Christ's appearing without fiving faith, bossting of keeping the commandments of God while living in open violation of them overy week. Answer just where Jesus taught ns in the parable Matt xav; 10-12. When the or a Cry at Mridnight was finished 220 Oct. 1844, lere was the beginning of the division under the sounding of the 7 th trumpet. In May following. 1845, almost all the leading messengers on one part of this division (Princes of Juda) commenced a new, organization in Albany, N. Y., which when fully developed in the eity of Rochester, April 5th, 1846, looked just like the description of the Landicean or last state of the charch, as described by the Savior in Rev, iif. 14-22, As so much is volmutarily fulfilled. I cannot see how the least part can fail. Mory in another place.

## SEVENTH WAY MARK.-SEVENTH ANGEL

## SOUNDING UNDER THE THIRD WO.

4-But in the days of the voice of the Seventh Angel, when he shall begin to sonnd the mystery (or secret) of God should be finished as he hath declared to his servants, the prophets.:

1st. Here it is plain and positive that the secret of God should be finished when the seventh angel begins to nound.
20. That the Seventh Augel is to sound days, (which mean years, ) no one I think will dixppute, who will first examine the word day and days bronght to view twenty times in this book of Rev. It is plain from the 591 years in the 96 chap. and 1260 and 31 in the 11th, called days, on each side of this text, and 1260 in 12th chap., all proved to be years, that this has the same menning; every other day in this bople has its meaning attached to it. Then this texf
would read thus: "In the years of the voice of the sevemth angol," \&c.
S.d. Then this proves that this angel will noumd yeares. 0 yes, says the reader, be will sound 1000 yearm, becanse he won't bogin to sound antil the 1000 years commence. You know the messengers have taught that Jesus would sound the seventh trumpet and that would be the last. Am 1 to understand that Jesus will be 1000 years sounding the seventh trumpet 10 no, he has got sonvething elso to do. This view then falls to the ground, miless you can prove that Jesus gives the trumpel or message to some one else nfer he has raised the righteons dead. You say this won't do. Well then take the Bible view, and no longer nudertake to persert "she scriptures." What is the Biole view ? It is this. The seventh angel or messenger sonnds and dolivers his message in this motrall state. Immortalized beinge will perfectly umderstand their duty without the book.
Now turn to leev, viif: 2, 6. These seven angels with their messages prepared thenselves to nound. As we read on down to the 13 th v . we sce four of them have sonnded. But the 13th v. shows plainly that the other three are connected with (separately and distinctly) the three woes that are to come on the earth ; the third is the lant wo, or the message of the reventh angel. Now 1 akk in atl catodor wirere is the leant particie of proor that our blessed Lord is one of theso angein or messengers. Do you mee any thing here 10 distingnish him from the other six? Let nis for a moment compare your view with the apostle Paul's. "The Lord himself shail descend from heaven with a shout with the voice of the archangel and with the trump of God. and the dead in Christ almall rise first." And then the living will be changed and caught up. "We shnill nill be changed in a moment, in the twinkling of an eye, it the list trump. for the trumpet shall sound."? Thes. ix. 1 Cor. xv. Will yon confound the aposile's view here given so distinctly ?
(1st.) Are any of the seven angels, particularly the last, maid to be descending from heaven ? (2d.) Is the last one eailed an archangelf (3d.) Is it snid that the seventh has the trump of G6d ? (4th.) Is it naid that the seventh is the I.ord himselft (5th.) Is it said that the seventh raises the dead and changes the living saints? No, say you, but I think it has reforence to it, for the seventh wust be the last. Allow me to say thet your thoughts and Jolm's vision don't sgree, for he snys distinculy, "And the seventh angel sounded, [did the Lord deacend now from heaven 1] and there
were great voices in heaven, saying the kingloms of this world are become the kingdoms of our Lord and of his Chrint ; and he whall reign forever and ever." xi: 15. Let us read the acta recorded under the sounding of the seyenth messenger. (1st) The seventh messenger sounded. (2d.) The foir and twenty olders (the whole Priesthood) foll upon their faces. 1 understand this thus; all that had been giving the mermges smbocribed to it an believed it thes when a Cry nt Mrianight ended in 1844. Please read the next verse, 17 th ; this conclueively proves the Lord in yet to come, afier he rectived his kangdom: don't forget this point here. (3d.) The nations were angry. (4th.) Thy wrath in come. (5h.) And the time of the dend that they should be judged. (Cth.) That thou shouldst give reward to thy servants. (7xh.) Asd shouldst destroy them which dentroy the earth.
Now don't you sec plainly that the seventh angel or messenger hasbeen sounding for yours, and still the Lord him*elf has not yet come. And don't you sec at many of you are tosching thet the Lard will come to-day, (Apri) ig) how meonsistent yon are and have been since Oct. 22, 1844, or a limb afler, in not admiming the eventh messenger to fial-
fil the five firet itema mbove fil the five first iteme above mentioned?

Can it be believed that God will change the order of things, or have every thing here in disorder to suit our views? No, no! We read, "To every thing there is a seasom, and a time to every purpose under the heaven," "Every thing upon his day." Ged is exact; and we shall yet find it so. I say it is clear that the reventh messenger began to sound on the 1st day of the 7ch month, 1844. If he hak not sounded, you will look in vain for the Lord. I have no iden that he can ever ceme until this message is given. The seripture also teaches mo that if you do not admit this, you are looking in vain Gor the Lord to-day. How can he come acoording to the ardar of the signs in Matt. xxiv. until God shall speak and shake the earth and also heaven ? And after shat, see the sign of the Son of Man in heaven ; then the order is clear for him to come next. I think the proof is clear thit the weventh angel sounde years before Cliris comes, at I have shown in the nixth place, to rewand hiis servants, (sco Mott, xvy, 27.) and that heis now sounding the third year from the 122 h day of Oct. 1844.

Mystrey or Secret of God Finisazd.
The teat emphatically declares that when this seveuth

Arimpet bogine to soumd the myytory oraceret of Gint sionlt he finished as he hath deolared to his servante, the proplo ets. Rev. x: 7. Here is whors all the tronble lien. If tho mystery of God is finished, then there is no more mediation for the world, and my near and dear friends will be loat. And I am quito uncertain whother I am in a maved state myself. Aud says the proacher, 1 must stop prenching and give wp twy mlent and my influence with the world. Woil, this is exacily what you why tmeght and filly believ$v$ ed would bo when the 12h Oot. 1844 dionld come. And because the Lord did not comb in ten daya nferwarils yon shanged your minda, and would tot ndmit the filfilment of this prophacy. Indmit that the conuiderations are paimfn! in the extreme. But suppose they were ten times inornso; wonld or could it alter the mind and purpose of God in any way relative to tho fulfilment of prophecy ? You answer
 hogan to see elearly that God'y people ware new in the furnace being tried (Lev, $x$ iiti. 22) and that hers wne the very pince for itn commencement. Wewcre therefore still right. Than of eoturse twe had ne right te give up the past. I asls where and how we got the light of a Cry at Midnight. Did we not say we saw elearly that it wan through a system of figures ar types pointing to Christ amd his kingdom?

The Types.-Malnchi in citing our minds to the last days, tells us to remember the law of M oses. Now he of course knew that we should have nothing to do with sacrifice and nblation, a part of Moses'law, for that wonld be nailed to the cross ; there was nothing else he could peint as to in Moses' law but the law of types. Now when our L.ord died on the cross some 430 years efter this, he began tha fulfilment of these types in this very law, and as onr King and High Priest he is still fattilling them, and will be until he comes the second time. Not one particle ean fait. Just see how perfectly to the very hour of the day our Savior finffilled the type of the passover, about 1500 years from its commencement, at 3 ocloek in the afternoon, on the 14th diay of the first month. Sirrely not one jot of the law failed liere. Again, 50 days after this, the anmiversary of the giving of the law ly God to Moses at Sinai, called the feast of weeks, was fulfilted by the Holy Ghost descending hike a rushing mighty wind, and as cloven tongues of fire. Hery too was antetype answering to type. Here then are two feasts out of three entirely and forever fulfilled in this state. Ciod said, "Three times thot shalt keep a feast unto me in
the year." Rx. xxiii: 14. The firnt at the Passover, mecond 50 faya after or the Pentecont, third and lnet seventh month at the ingathering of the harvest. Now here were typew to le finciled ns cleanly an those which had ulready been, and my solemn conviction is that the feast of Talernacles at the ingathering of the harvest in 10 lo fulfilled here by the ingalicring of the whole Isriel of God. But to the subject.

Ont lie fiest of the 7 Th month, we wo learn from I.eve xxitis 24, was ta be the memprin of tha blowing of trumpety. Thas is the fient syou to be filfilled tos this lom frast, and swas one of the grrat leading featice in the pothwoy A Cry at Milmight That this was repented every seventh monh, see Psi. Ixxxi: 3, "Blow op the trumpet in the new moon, in the time appointed, on our solemn flast day!" This wan a statute for Isracl. How oftem 1 Once every year preceding the ingathering or harvest. Where mall we find the antetype? At the sounding of the seventh angel. Why? Because the sixth had ceased to sound in August, 1840, just where the flying messenger legan to move. That the sounding of the seventh raessenger fulfila this type is plain. Says the reader, as yon have shown that the seventh trump is entirely separate from the "trump of God when the Lord himself descends," why may not the memorial of the soanding of truapet represent the trump of God 1 Answer - the seventio trumpet is not fict fax, but the firt in this feast. The next and last to this did uot sound unfil ten days after. See Lev. xxv: 9. Tlis is the last one which will sonnd the release and ingathering of all the true Israel of Goil and the true type of the triumph of God, for it is the Jubilec. Then as in Rev, x: 7, when the seventh messenger begins to deliver his message, i. e. sounds, then the mystery of God should be finished as delivered to his sorvants the prophets. Now all this was only a statement of what shomld take place when this messenger began his work. Here it is:
"And the seventh angel sounded, and there were great voices in heaven saying, the kingdoms of this world are become the kingdoms of our Lord, \&e. Ace, xi: 15. Now as we have examised all listary for a certain series of events among men to fulfil 591 years and 15 days of the sounding of the fifthand sixth, or two first wo trumpets, and did find events no clearly developed (thaugh we had to trivel hack cighteen generations, ) that all our opponenss were silenced (see J. Litch's Prophetic Expositions, vol 2.)

Fus it become impossible for the present generation to ses Hie folfilment of preptecy where the Eght wan shining with at least roo-fond more splendor. Awny with nuek treacherous nubelief, and take things su shey were in the history,
Tus History.-In that memorable year when the cry, "Behold the Bridegroom cometh," was moving with rairroad speed, the mighty messenger with a voice of thander. hia hands upraised to heaven, his foet upon the land und aca, declaring by him that liveth forevor, therg shoukd be no longer delny. The message was Mteraty declared on land and sea, mint was so clear that att the virgha arese and trimmed their lamps. Time wis seen cienty ihen. How? whery ${ }^{\prime}$. Why, the first point wea to the soundhey of the seventh frmmpet, on the 12th of Oct. 1844. With what intense interest wa apyroached if. Where, $\mathbf{Y}$ ask, is the advent believer who was then in Boaton. Providence, New Bedford, Fhirhaven, Nantucket, New Yorצ, Phindelphia, Baltimore, \&e. ©C., that did not hear the sounding of the "seventh angel," viz,: "The myatery of God is finshed," "The kingdoms of this wotla have become the kingdoms of our Lord," and also remember distinctly (as it was nf: terwards stated) the simultaneous movement among themp - even in the first 48 hours. What a raging among the wicked , and breaking up of the advent meetings! But more striking still was the development of character among the "virgins." During the tor duys to the Zed or Octobar, the mounding of the sevenit message cansef minuthannous finpercion amopg the virgins Disgust, dismay, disappointment, grief. contempt, scorm, and evil surmisings, on the one hand, while others were boldy declaring that the message was just what we believed, although we were surprised at the eflect it was producing.

Here was the point and peculiar time (don't forget it,) where the division of the virgins took place. They begair to go away for oil, or to look for it from a different source

Here is another strong proof of the famiment of the parable of the 10 virgins. Sounding of trumpets denotes generally the cause of some mighty movement, in gathering and dispersion. When the mintimde shut op in Jericho were given ap to death, the somuding of the rumpets the seventh time cansed the walls to fait and leave them defenceleas. When Gideon's pecwliarty rednced litle army sounded the trumpet, "the host ran, and criod, and fed." Confusion, dismay, and death followed in the tracke
"Shall a trumpet bo blown in the city and the people nat be afraid ? Surely the Lord God will do nothing, but he revealeth his necret unto his servante the proplets," Amps. Then surely the sounding of the seventh trumpet bas been revealed, and who is there that is not faut asleep that needs to be told of the divisiona and nub-divivions of the once united band that arose and trimmed their lamps for the coming of the Bridegroom, and began immediately to diesolve this union at "the sounding of the sevenih angel" on the 12th day of October, 184s. But it is mid there were men that did this work. Certainly-so they were pen that nounded the first six irmupets: See the effect produced by the trumpet of Joab, 2 Sam. xviii: 16, and $\mathbf{x x}$ : 22.

I am aware that there are thonsands of living witnesses to this stupendous and mighty work that have no faith in this part of it, whilo many say it was false and of the devil! My reply to all such is, that if men and women making their macrifices and such pretensions to holiness of heart,amioumly wailing in expectation of their coming Savior within ten days, will yield ap what then was cortainly the most pione eliort of their lives, and give all this experience to mes merism and the devil, they aro welcome. If such is our dependence for the king dom of heaven, farewell all othor efforts to obtaiu it. I would rather ten thousand times be: lievo that their heavy burden wis fear and hypecrisy. I praise God that this awful deluwion was not universnl. Afany believed in that day, and I truat they do still. For myself I can truly say it was the most trimpplant and sonlativring point it ail my chrinthen experience. Draw back because we were disippointed in our expectations? No; the watchword is onward to victory.

## Mystary or God-What is it !

Let the Apostle Paul answer: Eph. i: 9, "MI yatery of his (God's) will," if: 2, "My yetery of God and of Christ," iii: 4. "Mystery of Christ," 9h v. "Mystery hid in God," iv; 10, "Mystery of the Gospol;" Rom. xvi: 25, 26, "Mystery of the preaching of Jesua Christ;" Col. iv: 3, "Mystery of Christ;" 1 Tim. iii: 16, "Mystery of godiness was preach. ed unto the Geatiles; " Col. i: 27, "To whom God would make known what is the riches of the glory of this mystery among the Gentiles which is Christ in you the hope of glory, which we preach."
This then is the good news and glad tidings ; the Gospel of Christ published to the Gentiles, or as Jesus said, "And

## 44

I neks, if afliction and trialn of tho mort poculiar hind, lanve not heen the portion of God's seatecred leruel ever wince that nery doy even the 10th of the 7th month, Oct. $25,1841$. I care not what you call it,-fanaticism, disuppointment, or the work of darkness! Tho same peculiar uffictions abide them still, and must, to fultil that type. Peter telle ns not to think strange of it, neituer. 1 Peter iv: 12 . When this is admitted, (and where is there an honeat advent believer that dare deny it?) you must also admit that the preeeding type, the seyenth trampet, begun to sound ten days before. Then the next type to be fulfilled here is the feast of Tabernacles, at the mgathering of the harvest. Here, then, is the final harvest, or ingathering of the lsrace of God. As I before stated, here was where the division in the parable wan progressing. The next message was, "lhere are the patients of the saints, here are they that keep the command of God and the faith of Jesus. "And a voice from heaven saying unto me write, blessed are the dead that die in the Lord from henceforth; yea, said, the spirit, they do rest from their labors, and their works do follow them." Whoever will take the trouble to examine the seripture references of "dying in the Lord," will learn that we here followed Paul's example of dying in the Lord. Our duty was and is still in part to bo found in the rest of this chapter. Now one question: Where did we receive any orders while in this putient raiting to re-arouse these messengers and mend them ont to rejeat these same messuges in the vision again t. Was not the work done once? Will not that suffice ? Does God fulfil prophecy twice ! No. Then how passing strange that the great majority of these messengers ahould wifhout any anthority undertake to do thim work over again, and bo continumly finding fink with all who take the stand that that work was forever done, and what we now had to do was of nu entire different character, and if done properly would result iu sulvation. Hence every move they make is only assimilnting them nearer the old Sardis church, or rather developing the trie features of the Latodicean. Isn. instructed us here what to de. Hear him : "Comfort ye, comfort ye my people" (not the world, nor the condemmed nominal church). God sayw, "Spenk yo comfortably to Jerusalom, and cry (give the mensage, ) that her appointed time is accomplishud." Seexl: 1 , lifis 8-10. If' it was not here, pray tell me if you can, when and where it will bot For here is a message to be given God's people in this world, and it is a definite and separate
che, and door not inclade the world, but these of the "New Jerusalem, "the mother of us all." There is no such promise for old Jernsalem. If we are referred to the future for the giving of this message, then an entire new set of messengers must be raised for the parpose, for 1 do not know of three of tie formor among the ministers, but what are professedly doing the work in part or the whole over again, and while time continnes will be if they follow their leader. Word from their head quartors now is, to be getting ready for great mectings in new places, to convert sinners. We say this rinessage comes in after we had condemned the world. We are not lef without witnesses all around ns that it was an admitted fact that we had given the world the last warming, and discharged our duty. Out of scores that conld be adduced, let the two following tesfimonies, from two of the principal messengers suffice: "W W have done our work in warning sinners nud trying to awake a formnl clurech. God in his providence hiss shut the door, We can only stir one another up to be patient. Never since the digys of the Apostlen has there been such a division line drawn, is was drawn sibout the 10th, or 23d day of the Fth Jewish month. Since that time they say "hiey have tio confidence in ns." We have now need of patience after we have donc the will of God, that we may receive the piromise ; for he silys,"Behold I come quidfly, to reward every one as his work shall be." William Miller-V oice of Truih, Dec. 11th, 1814.
Second--Bosfon, Oct. 30, 1844. My dear Bro. BatesThis will be handed to you ly Bro. Davis. Ite will tell you of our affairs, and of ourr frith in this time, this "trying time." I repose in God. I never feit more happy and reconciled to his will: the late work has sared me-it has been a blesning to ns ail. Now let ns hold on. Let as remember, that thongh we have not realized our hope, yet we have condanned the sorld by our failh and stand justified before (fod. Abraham did not offer Isaac, God provided a lamb; so he has provided somethige else for us. And now to suffer and live for his name a little while longer.
Yours,

This I think is a pretty fair representation of the state of things at this time, with this exception, divisions were going on.

If any apology be necessary, I will say that it is not my Iractice to publish private corresponitenco. I have done

There will he five eclipses this ywas, ihrefice
Thefirst is a total eclipse ofithe Mpon, the saxtect bet

The second is a paitial eclipse of the Sing the +5iti day of

## is only visible iuso-th latitude, on the Pagific and Grea Supithort: Oict

## The third is a partial echipse of the Sxis, wie 101 day of Nowembers. of <br> 

The fourth is a total eclipse of the Mion, the 24 h of Nuvember, visilil



## minutes.

The fifih is a partial eclipso of the Sun, the 9 th day of December, visfje; beginnitig of the, Eclipeo vat o8 oches
minutes, afternoon; midille of the eclipse, at. 4 o'clock 19 minutes, afternoon; the enfrof the ecligse is not visilitestigerst because the San sels before the Mon has quite left the Sun's disc-: The Surswill bo ectipacd if digits on the nows part of the Sun. N. B. A digit is the 12 ti part of the Sun's dianater

## CHRONOLOGICAL CYĆLES.



Septuagesima Sunday, Quinquagesima Shrove Sunday, Shrove Tuesday, Ash Wednesday, Midlent Sunday, Palm Sunday, Good Friday, Easter Sunday, comniences Jianuatry 22 , with the year 1260 . Feb. 18 Rogation Sunday, Feb. 20 Ascension or lloly Thursday, May IG Feb. 21 Pentecost-Whit Suiday May 26 Mar. 17 'Trimity Sumbly, . Jume \& Mar. 31 Corpus Christi. . June of April 5 First Surday in Advent, . . Dec. 1 April 7
EMBER DAYS

## February 28. <br> Mily 29.

Sieptember 18.

## CARDINAL POINTS.

December -18 .

Vernal Equinox, the 2tith of March, at 6 o'clock 46 minntes in the morning. Summer Solstice, the $21 s t$ of June, at 3 o'clock 45 minutes in the morning, Autumnal Equinox, the 2ed of septomber, at 5 ciclock 3 minutes in the evening. Winter Solstice, the 21 st of December, at 11 oclock 29 minutes in the forenoon. Governing Plankt, Mercury.

All the calculations of this Almanac are made to solar or apparent lime, to which add the equation in the hour table when the Sun is slow, and subtract those minules when ferst, tor mean or clock time.

Culculated by Charles F. Egelmann. . .

The Great Western Almanac.
TENTH DISTRICT.

Twentrafinst Cimecit-Thilip N. Nicholas, Judgo,-Henrico and ('ity of Richmom, 10 May and is, Nuveinber-
Kidgoe of tha S.ıprom- Gourt of Appeals,-Henry St. George T'ucker, Presideat; Francis T. Brooke, W. H. Cabel!
Fichard E Parker an I Rolert Stanard. At lichynond-terms from 1 Nov, 1013 Dec-from 1 January to 22 nd

- Febryfary-from 1 March to 3 May. At lemisburg--2d Momay in July, to sit 90 days if necessary.

Jalges of the Gencral Court, who are also Judges of the Circuit Suparior Courts of law and Chancery, Daniel Smith, (President,) Fleming Saunders, Wm. Daniel, Lewis Summers, Alel I', Ipshur, Richard H. Fieh, John T. Lomax,
4 John Scoti, Willam Laigh, I.acas P. Thompson, Benj. V-tel!, dame D. Brown, Bowin N, Dancan, Juseph I. Pry, Sohn 13. Ohpton, Mishard 11. Maker, John 13. Chistian, Juha I. Ahon, John S. Mason, 1saac R, Domghes aad Philip N. Nicholas.



 1..chmoul. Sijutsalsan!.
 Thateday athor lot Tuestay-Venthetor.




 7riw,
 1.ancister, Mathews, Mhtherex, Melsoh, Xew ifent, Nomo-












- initge.
- Mami y lwhor. Dd You shy -Shenanhosh.
-rit-liy afict 3 Hombty-simyth.
Tst. Puesday - Toculoatts. Mricton.



$\because$ Third Hocs hay--F'oyetc.
$\therefore$ Fharth Tuseday-- Thamover.
: Pirst I'lurshays-Kiteg lievige, Nuttoway, Sussex, Win-
chester.

.- Phirl-Tfursiny-Charics City. I'etersburg.
Fourth 14ursdy-Amelia, Lifzabeth Cily, Madison.
Warten.
Thursday" ${ }^{\text {Fter } 1-t ~ M o n d a y--P u l a s k: ~}$ whents. loymehharg, Mason, Mercor, Monvon, Marshall, Vousagalis. Monts mory, Natsemonu, Dicholas, Norfolk,


 Siaiml. Soufhampon, stanton, 'Tyler, Wishington, Wil amathug. Wivod, Wy the, Muhtenbarg.

F bruary, May, August, Novemher--Hochingham.
Smaary, April, July, Oetoler-Kehmond City.
Lielemary, April, July, October.--Hanoter.
Lehraars, Nay, Iuly, Octuber--Aadison, Cumberland, Tazeweil, Clarke, I'ulaski and Tazswell.
March, Junc, Augist, ()ctuler--Puwhintan.
Vharch, Juan, *uitetaber, Novenaber-- I'endheton, Morgan, Nophampsen.

March, May, July, Nosemier---Freilerickshurg.
March, May, Alggust, Uctober-Augusta, Bahb, GreenDiter, Suser.
Wednesday nfter last Monday - Tazeweil.

## SHORT ALMANAC FOR THE YEAR 18, 1 t;

Being the 68th year of American Independence?


The 1st, 2d, 3d, variable; 4th, 5th, cloudy; 6ih, 7th, Sthvariable; 9th, 10th, fine, pleasant; 11th, 12th, rain amd smes 13th, 14th, 15 th, cold; 16 th, $17 \mathrm{~h}, 18 \mathrm{Sh}$ chondy; 19 h , varia
 25th, wimly, hail, rain and snow; -6ith, 27 th , 28 ,h, clem and cold; 20th, 30th, $31+\mathrm{t}$, fine, elear weather.
say, 'balt ! dress!' He is at miltary man is is moky on $k$ he wears long spurs, carics a stiff neck, and charges a red cloth, like a trooper.
"Well then, a little cowardly gool natured cur, that lay in a flour barrel, near the wood pile, gave out a l-m: doleful howl, now and agin, 10 slaw those eut ide paseen gers, if he couldn't fight tor 'on be could at all events ers for 'em, and it aint every goose has a mourner to her liu neral, that's a fact, untess it he its owner.
"In the mornin'I wakes up, and I soks round for lawgu but he was gone. So I gathers up the brands, ame makes up the fire and walks out. The pips didn't irs to cone in agin, when they seed me; they dintr'i likw the curlin' tengs as much as some forks do, and fist' (ails kim! er curl naturally. Hut there was lawyer a--tasdin' up hy the grove, lookiu' as pecked and foslorn as an onamatia loon.
"'What's the matter of you, Squire!' sais 1, 'you toul like a man that was ready to mike a speceri, liat your sit ness hadn'i come, or you hadn't gol nit jow ?
" 'Sometiody has st le my liorse." saif hos.
"Well, I know'd he wats near ishated, whs huyce, ath couldn'isee a pint clear of his nose, unleso it sata a jumt $o^{\prime}$ las So I looks all round and thore was he linses, a stantin' in the bridge, with his long tail lianging down ataight at on. cend, and his long neck and had a hanging doveli strgigh at t'other eend, so that you coui in't teilone Ir on l'oher, o which eend wat towards you. Jt was a clear, fold mor(atit The storm was over and the wind dorw, now there wia frost on the ground. The critter was cell, I =1ppiont, ant baving broke the rope walked off to streteh hio logs. It was. monstrous mean night to be out in, that's sarain.
"'There is your hoss,' sais I.
.. 'Where!' sais he.
"'Why on tho bridge, sais' I; 'he bas got his head down. and is a-lookin' atween his fore-legs to sea where his tail is, for he is so cold, I do suppose he can't feel it.'
"Well, as sonn as we conld, we eatarted; but afore leff, :aist the Jadte to me, 'Mr. shick', sais he, there laister, taking nut a poural note, a plaister for the elan * her fig rubled off of the obdevaman. Give it to lier, I trope t is tigemough forer coser.' And he feil back on the bect,ind litied ard coughel, and coughed and loffod; ti. ${ }^{1}$ the reile rin Jowndic checke

A good anecluts is toll of Ur, aliock", t..c famous Lon 'on quack. Being one day ini a coffec hoose on Jinugate trin, I gentleman exg ressed his surprise that a eertan fihysician of great offifiges, fiad but late practice, while suctr is man is Rock twas making a fortune. "EWhy," siys Jock. "han's tion ind liow many wise men, think you, pass up mid Jop il his street" "Ahout one fortwen'y," shys the wher, "TVell then," replies IRock, whe minetuen come to we when they are pawell, and the ductur is weleome to the twentieth."

Hity A colionecr.-An aspusing writer of comenc sketcha. as in Londuat gives the followng spechuen of the wit of onc of that class $\hbar n u w n$ as meck anctiveters ,
" Wha'll boy this pedlock int key? (fotding it np tgetho light, find lurning round and reand.) This is a lock ${ }^{-2}$ - no than inere. "Fifht it Brumah, lir, them can't be pieked. Von thes is at picked lock, facket oan of hem thomsand, wh riends, and preked unt by my an-out ol thice cheicest lots
 cis h. Why, it rhi $k$ - like as gur leck. IM', deag chenp at three dillinge, and you may have it fot eighece prace: Whosays? It has as many wartis is l, imbon, antit holds ay fighe as a buthlog. 'Thery's ral Arenglin in il. Sung!sen's trengllalay in lats focks, bat this beals him entirely. Come sive us a lid. You must hate somefling to look of your Wife, and lecep her from galding ;ibual-xave yecr shoeeather and dostor's hill. Come, give us a hid. Sixpence lal you say, sir' 'Thank you, sit. It is yours."
\$ Loutin--The following is the best definition of a 1 A bunde yel suen:-"A person whio begsall the tobaccono we liave yet seon:-A persor who begeaminted with him. when he meets-often looking at his borrowed wated to, sec fhe time, and takes the papers two weeks, and then(tramps,"



S. 28 Chartes
 $i_{2}$; Satuin is ihe 18 th in conjunction, and cant, therefore, this and next month, not be teen.

## The Second Month, or FEBRUARY-1844,



## The Third Month，or MARCH－18．4，

Tematikablo Day： －IF Asfi Wed． $\because$ Charl

S｜ 3 Julianus
M A Mathlias
T $\overline{5}$ Frederick
IV（i Fridulin
T 7 Lichard
F
S

Sill lousinat
Mil Firnestus

W 13 Vaccedua
T 1.1 Yas haviah

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111 Min locet，in hil simaliev in loont．
納 17 St．Patrick
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T It Josenh
W 20 N．atrana
Y 21 izeradict
Fere Finulina


| $\left\lvert\, \begin{array}{cc} \text { Niron } \\ \text { South. } \\ \text { in. } & \mathrm{m} . \end{array}\right.$ | $\begin{gathered} \text { Ifigh } \\ \text { Water at } \\ \text { l'hilad. } \end{gathered}$ | Mown＇s Kising is S．lting． | $\begin{gathered} \hline \text { Moon's } \\ \text { ptace } \\ \text { at noon. } \end{gathered}$ | $\begin{aligned} & \text { Aspects of Thinets } \\ & \text { and other } \\ & \text { Miserllaneions matter. } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |





## Matheev 15 ．

## Hav＇s lengeli it hours if minutes． <br> 183｜2

$|$| 13 | 6 | 25 | 5 | 35 |
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| 18 |  |  |  |  |
| 12 | 6 | 24 | 5 | 36,19 |

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e．30$1: 26215 \quad 3021$$1 * i$4()$10: 2$$1.5146693 \cdot 2$11616.54.4425l．nke 11.
Piv＇s lengit 11 lomes it monutic．
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| 10 | $i$ | 1 |
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T $\mathrm{T}_{2}$ fimanuel
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28 Gustavis
29 Gustavus 30．Guido
103 Palur Surday． \＄ 31 Detlaus

| 8 | 6 | 4 | 5 | 56 |
| :---: | :---: | :---: | :---: | :---: |
| 5 | 5 |  |  |  |
| 6 | 2 | 5 | 58 | 6 |
| 86 | 1 | 5 | 59 | 7 |
| 66 | 0 | 6 | 0 | 8 |
| 7.5 | 54 | 6 | 2 | 9 |
| 75 | 57 | 6 | 3 | 10 |
| 75 | 5 | 6 | 6 | 4 |


 Mathere 21.

Dev＇s length 12 houre（3）minntes．



Tho 1st, 2nd, 31, +h:ur, culd; 4ht, 5th, monterate; fith, 7 th, Bth, rain and snow; 9ih, 10th, 11 h , colli; 13h, 13 hh, cmole. ratc; $141 \mathrm{~h}, 1.51 \mathrm{~h}, 16 \mathrm{~h}$. rain, smow metes away; $17 \mathrm{~h} \mathrm{~h}, 18 \mathrm{~h}$,
 variable; 2hth, 25th, 26:1, fair; 27h, 28:h, velh, valabli; 30 th, 31 st , clear.

Jrafexsar of Nigns.-King dames VI, on moving to Jondon, was waited upory by ilon Sibanisl, Ambassader, a mon of eruditon, who limi a cruclus in his hend that evers conntry shoult hase a I'rufissor of Sighs, to toach him anit the like of him to undersimod oac unoblor. The Ambasso. dor was Jamenting was day, before the King, this graml desideratum thoughout a!! Borrope, whon hat Kome, whe was as yuecri-h sort of a man, kaya to him-i. Why, I hase a Professor of Sigh, in the nonhermet Cobiloge in my dominions, viz, at Abertem, then it is a vast way off, pertapes 600 miles." "JVenc it thunt hagems I shall see bim,"

 himself, and writes, or cau-ce to how wrillet, to (hor I mivel. sity of Alierdeen, stamg the ease, and deamen the for foreors in put hom wh smam way, or maky the thes of lom. The Ambasswlor arrivis, is raceised will gewit volemmily leat soon began to ingure which of them line the lomer th

 coull tell when. siys the Jomlige whor, "I will wht his return. though it were tevion ammilo." Bicimg that thes


 fellow wils medt wit am! anguey womb hom. If sis get told the story, nad in-tomg it to lios a Prolen or of Mign-
 The A mbasa lor is now inhl that the Iroloseor of Nig:

 a room of the conlege, wll the prites-ors and the Amians. dor being in an sudnaing inom. The Ambinsuitor is tow shown into Gcordy's rom, and left to coaveree with hat as well as he could, the whole of the protessors wating the issue with lear and trembling. The Ambas bulor holds af
 The Amhassador helds np threi; (ieurily rimeties lis 1
 from his poeket and liolds it up; (iondy thas of pil ed
 which the Ambsesador hows to hom, omi rethes to tho mhel Irotessors, who auxiously inguiod his urimion ot lieir brother. ' 110 is a perfect mirale," sogs the Amlassadur; "I would not give hion for the weath of the In:-
 cular,"" "Why," says the Amhnssulor, "! fist linfl up one finger, denoting that ther" is but one liont; lac latil ty,
 p tirees meaning the Fimher, Sorn, atd Ihoty libost; lin


 life; unon whiels the wondeaful mas promated a pieen af Uread, showing that it was the of if of the and prohtable in rsery lisury."

 wort pot fienrity, t, hear his ver-ish inf the same. "Wrils. (iandy, how have you come un, urd whit thok you of suar natu!" "Tlie racal," says firorily, "oviont did lin tio









 rombere that! I thewed him a wheme ot , lear lamme ho neamiog that I did na' caro a forthing for him ther his tampo
 luded (roordy,) I'm angey yet that ! idnu thrash the hide "the scoundet!" So much for signs, or two way
elinig 3 slory.
. 13 lack Cheruh.-Since cleating the propertics out of the 'Jremont Theatre, some stragging articlet had come


 | Ta．Rises． | Sets． | Sul， |
| :---: | :---: | :---: |
| Sut |  |  | $\begin{array}{llll}45 & 446 & 16 & 20\end{array}$ S｜ 7 Easter Sun M \＆Easter Mon

T 9 Prochorus
W 10 Daniel
T 11 Gideon
F 12 Eustatius
S 13 Justinus
15］ist Sumatay afier Baster．

Moon $\mid$ High $\mid$ Moon＇s ${ }^{\text {Moron＇s }}$ Aspects of Planets and other h．m．Philat．Setting．at noon．｜Miscellaneous matter． 10531241419 然承 $20 \%$ sets 950
 morn． $1 \because 42$
$\begin{array}{ll}1 & 41 \\ 2 & 15\end{array}$
$\therefore .51$（ 41 ans 52 in perigee



$\begin{array}{llll}45 & 436 & 17 & 21\end{array}$ $\begin{array}{llll}35 & 416 & 19 & 22\end{array}$ | 35 | 40 | 2 | 20 |
| :--- | :--- | :--- | :--- | $\begin{array}{llll}35 & 39 & 61 & 24\end{array}$ $\begin{array}{lllll}25 & 37 & 6 & 23 & 25\end{array}$ Mark If．Day＇s lengili 12 hours 48 minutes．


$25: 366 \times 426$ | 25 | 35 | 6 | 25 |
| :--- | :--- | :--- | :--- | 1．5 3369728 153262809 $\begin{array}{llll}15 & 316 & 29 & 30\end{array}$ $\begin{array}{llll}\mathrm{Th}=5 & 306 & 30 & 31\end{array}$ $\begin{array}{llllll}\text { sun } & 5 & 296 & 31 & 1\end{array}$

$4544616=0$ iuperior


S 11 riburtius
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J，4ill 20.
Hay＇s fength 15 hours 6 minutes．
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S 21 Allolarins
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4 Albert
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S 27 Auastasius
171 81 Sunday afier Pastet．
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M 29 Sybilla
T 30 Eutropius

3

4.3 （；31 morn．mity

532 子 2012 \＆mis

 John th． $11+$ rises 326
1.5 \％）d 1 －q．s． $1031 \quad 15 \quad 19641 \mid 9$ 27 Sirius scts $940 \quad 2,5 \quad 186 \quad 4210$ 9 Reg－so． 7 55 $\bigcirc 25$ 1764311 $\because 1$ jiscts 9 21 $\quad 25 \quad 1564.212$ 1）ay＇s lengili 1.3 hours 40 minules．
¢ 4611 3 $31 \quad 2 \quad 21$ 感

1130121 \＆ 3 ここごす

## MOON'S PIIASES.



Full moon the 3d, at 1 o'clock 51 minules, morning.
l.ast quarter the 9 ih, at 5 o'clock 5 minutes, ofternoon,

New moon the 17 th, at 11 o'clock 31 minutes, firenoon.

First quarter the 25 h h, at 3 o'clock 14 minutes, affernoon.

Consecture oy the weathert.
The 1st, 2nd, 3d, warm, with thumber; 4ih, 5 h, rain; Gity Th, 8 th, fine; 9 th, 10 th, cloudy; 11 th , rain; $12 \mathrm{th}, 13 \mathrm{th}$, vo riable; $14 \mathrm{th}, 15 \mathrm{hh}$, fair; $16 \mathrm{~h}, 17 \mathrm{hh}$, showers; $18 \mathrm{~h} \mathrm{~h}, 19 \mathrm{~h}$, clear: 20th, 21st, wind and rain; 22nd, 23d, thonder showers; 24th, fair; 25th, rain; 26th, clear; 27h, 28th, warm; 29th 30th, thunder showers.
into the possession of the city urchine, who have had rart eport with the basket horses, wooden swords, plumes, \&c Passing down by the 'black sea' in Ann street, one day last week, I witnessed a scene never equalled on any stage, and which would draw tears of mirth from the longest faced Quaker. There stood a litlla he-darkey abou a dozen years old who had, by hook or crook, come int possession of a pair of gith fairy's wings, which he had contrived to fasten under his arms. A group of little niggerwere gathered around him, in an agony of delight, grinning from ear to ear, ns he harrangued them thas: "I say boys, I'se a Millerite-git out ob de way dere, ole Dan Theleron' gib us a chance to go up! Wish I had one ob dem 'ere 'scension rolies, den I'd go it like a school marm.Any on you niggers want to toke passage? I'll put you through by daylight. I ha'nt got no jacket for you to hang on to-but jest catch hold ol de slack wh iny trowsers, ant I'll carry you up bean'fally! Whoora fir brodder Ilimes and parson Miller !"

Fame and Immortality.-"The consequences which the actions of men bring afier them commonly lie out of their power to compute. A small seed may grow up to a great tree, a blazing fire may he smothered in ashes. Whether the vietories of heroes have done more for humanity, than the unobtruxive life of love of an unknown man, is only seen by the All-seeing Bye above us. J.et each ene do the good that is in his path and in his calling, and his work shall remsin, even if it seem to pass away, and will liear fruit in its time. Honorable fame, my best Edla," he continued, tarning towards her a full and affectionate glance, "must not be confounded with immortality on earth. A name may be repeated by millions through centuries of years-that is fame. The good which you think and do, the spirit which goes from you, and which lives and porpetuates itself through endless generations, this is true immortality upon earth."

Great Western-B

Sumvis.-The following prelly description is hy Grace Harkaway:
The man that misses sunrise loses the sweetest part of lis oxistence. I love to watch the first tear that ghtiens. in the opening eye of morning; the silent song; tis flowers breatle; the morning choir of the woodland minstrels-to which the modest brook triekles applause-tliete, swelfing out the swectest of creation's mating, seem to jour some merry tale into the delighted ear, as if the worid lad dreamed a happy thing, and now smiled o'er the telling of it!

Love and Keconciliation.-1t is a glorious thing,-and those who truly love know well how glorious it is-nftis moments of misunderstanding, even of reciprocal trans. gression, to rest again, heart to licarl, and to fect, deceily fecl, that there is a certainty in the world, in spite of ait the powers of hell, a certanty, which is lisaven upon earih, -hant they love each sther, that they belong to earhoilicr, that nothing, nothing in the world shall scparate then, whe: have found each other again in truc, in fertect lowe. (\%) wis is a certainty, the most leatifed that there is ont enrih. aleer. Ife fell it truty, the stage of life, laid lis hands upoa his heart and szid: "i hove, thercfore I am immoria!!"

## A Tewler Heartel Jialge.-The following story is lold

 of a Judge in Texa":A very learned and compassionate Julge in Texas, on passing sentence on one John Jomes, who hat been convicted of murder, conclud d lis rumarks as follows:-4The
fact to be fs, Jones, that the C.urt did not intend to order you cold-our fed before pr xt + ping, but the "eather is very much of jail, unfortunately, is in a very bad condifion-re in suche gla ss in the winto vs is limpen-the chimerys render your a dilapidated state thar no fire can lie made to yreat numl apartments comfortane; besdes, owing to the be allow therofore to each-to sleep soundly and comfortabls, these cre, will be out of the question. In consideration of as mercumstances, and wishing to lessen your sufferiags manity as possible, the Court, in the exercise of its hu-to-morrow compassion, do hereby order you to be execatcd venient to morning, as soon after breakfast as may be con"wient to the Sheriff and agresable to you."

| en | Remarkable Days. | $\begin{array}{\|c} \text { Mount } \\ \text { South. } \\ \text { h. } \quad \mathrm{m} \end{array}$ | $\begin{array}{\|c\|} \hline \text { Ilight } \\ \text { Water at } \\ \text { Philaul. } \end{array}$ | $\left\lvert\, \begin{aligned} & \text { Moon's } \\ & \text { Kising \& } \\ & \text { Souting. } \end{aligned}\right.$ | $\begin{gathered} \text { Moon's } \\ \text { placo } \\ \text { at noon. } \end{gathered}$ | Aspects of Planets and other Miscellaneous mattor. |  | $\begin{gathered} \hline \text { Su } \\ \text { Rises. } \\ \text { h. } \quad \mathrm{m} . \end{gathered}$ | $\begin{aligned} & \text { Sets. } \\ & \text { i. } \mathrm{h} . \\ & \mathrm{m} \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 15 | 356 | 509 28 | (a) sets 1045 |  | $\left\lvert\, \begin{array}{lll} 5 & 7 & 6 \end{array}\right.$ |  |  |
|  |  | morn. | 152 | 2 rises | crate 13 | $22 \mathrm{~d}, 2)$ in | 3 |  | \% 654 |  |
| F | 3 Inv. of Cross | 1:29 | $\because 41$ | 841 | c) 25 | 5 sets 919 | 3 |  | 5655 | 5 |
| S | \$ Jilorianus | 133 | 345 | 9) 46 | 零 18 | b, \% sets 850 | 35 |  | 4656 |  |

18 1 dth Smmay atter Master.
Johin 16.
Day's length 13 hours 54 minutres.
$\stackrel{s}{5}$ (iodart
M (i St.Joha Ev:
-T 7 Domicilla
W \& Sitanislaus
I' (9 Job
F 10 Gordianus
S 11 Mamertus

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## 1ay's tengiti $1+$ bouns 8 minnters.

S I's l'ancratins
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"I IL Christian
Wian Sopinia

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s is liberius

 Jutin 15.

| 4 | 1 | 50 | 7 | 4 |
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| 4 | 1 | 55 | 7 | 5 |
| 1 | 1 | 5 | 1 | 7 |
| 4 | 6 | 2 |  |  |
| 4 | 53 | 7 | 7 | 3 |
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एay's henem $1+$ hours 2- minutor.

S (!) limustan M $\because 0$ (iodart T 21 J'rudence W :2 Helen
T 23 I) asiderius
Tel Fisther
2.) Cplonins


Jav's levasin 17 linurs 22 minutes.

21] Whit Sumiliv. or I'entrenst.
S 26 Whit. Smm M27 Whit. Mon. 1 T ea Torpetis W/as Emberday T 30 Sophia F 31 Manilius



10 101154230 cen 7 Apretur: so. 9 . 43
 morn. 137,2 rises, 紷 7 (2) 31,2 eclip.
$\because 11.147 \quad 16 \mid 1.1$ $\begin{array}{lllllll}3 & 1 & 43 & 7 & 17 & 15\end{array}$ $\begin{array}{lllll}3 & 437 & 17 & 16\end{array}$ $\begin{array}{llllll}3 & 1 & 42 & 7 & 18 & 17\end{array}$ $3: 14171918$ $3411 \mid 719) 19$

## MOON'S PHASES.


cosamefore or the ws.atmer.
The 1 st, $2 \mathrm{nd}, 3 \mathrm{~d}$, variable, cloudy, sainy; 4th, 5th, 6ih, air; 7 th, clouly; 8th, 9th, rain; 10th, 11th, fair; 12th, thumler; 13 th, warm; $14 \mathrm{hh}, 15 \mathrm{~h}$, variable; $16 \mathrm{th}, 17 \mathrm{~h}$, (thunder; 18th, cloudy; 19th, 20th, rain; 21st, 22th, 23d, 24ih, fine, deasant; 25th, 26:h, warm; 27th, thunder showers; 28ih, 39th, cloudy; 30th, 31at, clear.

## 

Yesterday I walked down to that part of the towsi, Where poople collect at the sign of the 'Tun, Fo discuss and debate the great matters of state, Ani show how the things that go wrong should be done; Phere was ragged sim Hent, who is not worlh it cont, There was idle Diek Lawless, and noisy Jack (irimes, And swaggering Jim Bell, who had nothing to sell, All cursing the banks, and these dreadfal hard times. There was old daddy Slop, who had lost his last crop, By neglecting to mend op some gapa in his fence: There was shabby Ned Thorn, who had phanted his corn But had never put hoe, no, nor plough to it since; There was dashing Bill Sutton, with his fine domly coat on, Who was ne'or out of deht, or was worlh twenty dimes; They too joined the thron, and still kept njp the song, A curse on the Banks, and these dreadful hard times.
Next came in Dick Shont, who was summon'd to eqourt, For some humdred of half pints of whiskey and rum; Ife had brought the last sack of his grain on his hetek, Though lis children wore erying with hunger at home;
Herg Herc, landlord, said Shert, come, hring me a yoatl:
I 1 must treat these my friends, sir, and merry Jack (irimes l've the corn, sir, to pey, hicre's no booking te-day; Then he fell to carsing the lranks and liard times.
Next eame in Tom Sargent, who had lately turned merchant,
Aud bought a full store, ! can searecly tell how; But this much 1 know, alont twelse months ago, That the constable sold at the post, his last eow: Yet Tom dashed away, sperning hundreds each day, Till his merclants brought swits for their dry goods and wines:
So Tom joined the throng, and assisted the song, With a curse on the banks and these dreadful hard times.

Next appeared Madnm I'ride, (and a beau at her sise, ) With, her silks spread with laces, quite down to her trail; Iler liushand that day, unable to pay,
For the dress she then wore, had been locked up in juil; She turned to the throng, as she tripped it along,

## And sle hoped that the merchants would swing for such

 crimes,"As to make people pay there old debts in this way;" And she cursed all the banks, and these dreadful hard times.
Now, snid 1, Mr. Sliort, you are summoned to court,
And must soon go to jail for thesc long whiskey scores; And you, Mr. Drew, aye, and you, sir, and yon,
Who are hanging round taverns, and runting to stures; Ind you, Madan Pride, most your silks lay aside, And you, Mr. Idle, and you, Mr. Cirimes,
Uast all to your labors, like eome of your neightors, And you'll soon put an end to these dreadfal hard times.

The Sich Chamber.-Heath and the Sun have been alwoys sung and praised; I will now celchrate sickness and shade. I will celebrate thec, bodily sickness, when thou sayest thy hand on the head and heart of man, and layeat o the sufterings of his spirit, "Enough!" Thou art called an carth an evil; ah! how ofien art thou a good, a healing balsam, under whose leenign influonce the soul rests after its hard struggles, and its wild storirs are still! more than once thast thou prevented suicide, and preserved from madness.The terrible, the bitter words which destroy the heart are loy degress obliterated during the feverish ilreams of illness; the terrors which lately seened so near us are drawn away (into the distance; we forget,-God bo thankel,--we forget? and when at lust twe arise with exhausted strengh from tho sick-hed, our souls ofen awake as out of a long night into a new morming. So many things, during the illness of the boly, conspire to soften the feelings; the still ronm; the mild twifight through the window curtains; the low voicest and then, more than all, the kind words of those who surround us, their attention, their solicitude, perhops as tear in their eyes; all this docs us good; and when the wise Solomon enumerated all the good things which have their fime upon the earth, he forgot to celebrate sickness among the rest,

s $\because$ Liberias
31 : Eriosmus
'I' 1 Daius
W is Immifacius
i f (inp) ('hisist
Fi $\quad 1$ meretia
$\therefore \quad 4$ Mctardus

Jolin :3.


## Jinke 16.

Dis'a length 14 linurs 46 mmutes.
43) 1as ambliy ator I'rinity.

S 9) fiavimus

T II javiabas
W İコ Dasilieles '13 'Iobias
F II liclisems

- 15 Vitus

- 5

S 16 Rolandus 1 1:
M17 St Albans 'I is Armoljhins
W I:9 (icrvasius 1-20 sylverius F 21 Raphacl 4.20. Achatius



 10 $6121-210 \sim 27+\operatorname{sets} 1010$


 Day's length 14 hours 50 minutes.


| 1 | 1 | 35 | 7 | 25 | 4 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | 4 | 35 | 7 | 25 | 5 |
| 1 | 1 | 35 | 7 | 2.5 | 6 |
| 1 | 4 | 35 | 7 | 25 | 7 |
| 1 | 4 | 35 | 7 | 25 | 8 |
| 1 | 4 | 3.1 | 7 | 26 | 9 |
| 2 | 1 | 35 | 7 | 25 | 10 |


l.uke $15 . \quad$ Davis lengeth 14 hours 50 minntes.
*3 Agrippina Johin 1apet. Tes Vlosius
17 26 Jeremials 1-: slexpers F 3 L, Leい $\therefore$ arsilu.dPet.


## Suke fi.

1)av's Iength 14 hours 48 minutes.


## MOON'S PUASES:



Last quarter the 7iti," at 3 o'clock $30^{\prime}$ minutes, aflermoon.

New moon the 1 jth, at 7 velock 25 minutes, eveming.
First quarter the 23 d, at 10 o'clock, 21 minutes, Foremon.
F'ull moon the 30th, at 1 w'clock ${ }^{*} 12$ minutes, morning.
conjegtuhe pe phe weatiler.
The 1st, 2nd, 3id, elear; 4th, 5th, changenile; fith, cloudy 7ih, Sth, clear; Gih, 10th, frir, warm; 11,h, 12th, 13th shower rain; 1 Silh, stormy; 16th, cloudy; 17h, 18th, rain; 19il, 20ih, clowdy; 21si, 22 mil , warim; 233, 24ih, variathe; 20th, 26th, 27ih, clouds; 28th, 29th, variable; 30th, thunder showers.

Renivimg lhe Derd.-Mantaceinui, the fanous charlatan of Paris, was a young mant of goul family, am! having in
afow gray to loggary, he feit that ho mos exereise his imgenmity of starve. In this state of mind ho cast lis eyes romed the varions deviees whel, save trom imdigemes, and are mest favored by fortuge. Ife semb jereeved that eharlatanism whs that on wineh the blimd hemetactiess lavehed her favers with most pleasare, and in the greatest abmannec. An



 touch or a simple lowk."























* $¢$ : Yethus is the 23 d in its inferior conjunction with the Sum, this being the reason its apparent retrogade motrous yprears Ao quick,



## MOON'S PHASES.

consactune or THE Whatitit ,
The $1 \mathrm{st}, 2 \mathrm{nd}, 3 \mathrm{~J}$, cloudy; 4 hh, 5 th, 6 th , fair; 7ih, $81 \mathrm{~h}, 91 \mathrm{l}$, riable; 10th, 11th, clear; 12th, 13th, very warm; 14ih, 151 h eavy rain; 16th, 17h, 18th, fair; 10th, clouly; 20th, 21st under showers; $22 \mathrm{nd}, 23 \mathrm{~d}, 24 \mathrm{~h}$, cloudy; 25it, 2(6il), fair 7 t , 28th, warm; 29th, 30th, cloudy, rainy; 31st, far.

## AKING THE CENSUS,-DCENB IN AIABAMA.

## н Y H. Hooreit, Esq.

We rode up ono day to the residence of a widew rathe ast the prime of life- (just lhat period at which thatore cuj:des more abundanily the oil ivhell libricates tho limger of re houso,
"Good morning, madam," raid tse in our usual blan3, atid ymewhat insmuating manacr.
"Morain'," said the widow grufly.
Drawing our blanks from their case, we jomeed



 'omp, by coming to the door, smelling at our feet with a lime papet, and don't le telimg no fies to sedal to Wasling,
 nued the old she eavage, "them's the sexereat dogs in t: s ind feur chandreat.
ountry. Lust week Bill Stonecker's tivo yeur ofd stect We oljectel to making ony sach entry, but the ofy hag imped my yarl fence, and Bull and Pormp tok him by the cowed that if shophd te done, to prevent auy merepuesentarroat, and they killed lim afore my loys could breuk 'in rose, to save the wuld."
"Yer, ma'am," said we, meckly; "Ball and Pomp seem to a wery fine dogs."
"You may well say that: what 1 tell them to do they do -and if I was to siek them on your ohd hores sonder, hice'd it him up afore you ceuld say Jack Rohersor:. Ame its jis

 'd diow you what-l'd - I'd make Bull and Fomentow you ow to be sendin' out men to take down what linte stuf) ${ }^{\prime} \mathrm{m}$ le', got, jeat to tax it, when its taxed enough a'ready?" Nil this t me we were perspiring through fear of the limes uardans of the old widow's portal. At length, when the fidow pauked, we remarked that wo she was determined not
to amber questions about the produce of the $\boldsymbol{d a r m}^{2}$, we woufa uft ect down the age, six, and complexion of each member. of her family.
"No such s "hing-you'll do no sich a thing," exty shes
 (o) send sou to take down how old my childreptis. I I'vo añ
mot ive in family, and they are all between five aid ${ }^{\prime \prime h}$ hembed years ofd, hey uge all a phaguy sight whiter than yourand wheiher they are he of she, is none of your consarns." We told lier we should repert her to the Marshal, and she sould lie fines, Lut it mily nugmented her wrath.
"Yta! an ni your Marshal, +of seur Mr. Van Buren here, if you're lad ofl to-let'rm come-let Ma. Vän Buten come, * (tooking at stavage ash Bengal tigress,) Oh, I wish he uould come," and her nestrils dilated, and her eyes gicaficé, "Id cut lis head ofi!"
"Hhat migh: kill him," we ventured to refiark, by way of joke.
"Kill him! kill him-obrgir I had him here ly the ycars 5

 Gimper of thes lech our coursge gate woy, and we mado
 We now heresil lio old lady to distnise forn."
dat we might go out and deporl: and forthwithemonents; it od lack, ve thermined to nive. tie ohd sout mownting ire. Teaning lelf romed in orfer to face old soul a patse shous "Old "oroan'"
$\because$ Who told you to call me old orman, you long-legged, metwit-fiect whelp, you? I'l make the doga take you of hast lome il you give we ary mere Earse. What do you van!!"
"D, you want to get marricd!"
"Not to you, if I do"." . . "
E．

Remarkable Days．
1 Lammas d． －2 Stephen 3 Augustus

The Eighth Month，or AUGUS＇I－1844，

and other
Miscollourous maticr．

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5,5 & 7 & (i & 5: 3 \\
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3 \therefore 206 ; 10,10
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\because 5 \geqslant 16 ; 3!11
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25: 3 \text { i; : } 271 \%
$$


$\because 2 \geq 11 ; 3613$
$\square$


 $11^{2}+9$ gut




## MOON's PIIAsks,

Jast quarter the 5th, at 10 o'cleck 31 minutes, cyening.

Now Moon 13 th, at 9 oclock 35 minutes, evening.

First quarter the 20th, at 9 o'clock 17 painutos, evening.

Full moon the 27 th , at 7 o'clock 34 minutex, evening.

The 1st, 2nd, clear; 3d, 4th, showero; bth, Bth, 7hh, fain, 8th, 9 th, warn; 10th, thunder showera; 11 th, clouly; 12th, 13th, variable; 14th, 15th, windy; 16ith, watin; 17.16, thunder showers; 18th, 19th, cloudy; 20th, rain; 2fst, 22ml, 23d, fair; 24th, cloudy; 25th, 26th, rain; 27th, 2sth, *9th, variable; 30th, 31st, thunder sliowers:

Placing our right thumb on the masal extemity of our centic one withnt, whose field of labor was a town in the countenance, we said, "You necin't be nueasy, old 'un, on interior of New Eingland, one Sunday, at the cloze of his that score-though you might suit sore-legged Diek $N$-_-services, gave notice to his congregation that in the course up our way, and should fike to know what to tell him he of the week to expected to go on a mission to the heatbon. might count on if he come down nest Sumbay!"
"Here, Ball!" shouted the widuw, "sich him, Pom,'" loul we cantered off, unwounded, fortunately, by the fangs of Buil and Pomp, who kept up the chase as long as they coutd hent the cheering voice of their mistress-"S-i-c k. lomp-sick, sick, s-i-c-k him, Bull-suboy! suboy! suboy!'
 rusticating at Red Bank, (says the Journal of (fommerec), and is fond of the curious in nuture, relates the following
-He noticed a chauticleer watching atlectionately over and into the mystery, and was told that the hen ha! heen acci-powerfiel love, which causes relations and friends to act dentally killed in the presence of the cock; when instant-and to sulfer for each other, without actions which show ly the cock assumed the responsibility of providing for the that 'love is etronger than death,' pencil and chisel would brond, commenced imitating the cluck of the hen as well not lave created those master-pieces, song would thave as he could, leff off crowing, and has ever since watched lirought tears to mo eyes, and muaic would have licen, but over the family with the most aflectionate care.

One of the villagers keeps a cow which rans at large. He aiso has a dog, which, without any training, has taked a fancy to te cow-boy, goes off with the cow, in the marning, keeps her company all day, and retorns with her al nicht.

But rather the most uifticult story lur faith to receive, is one about geese. One of the inlalitants last year, went out on a stomny rught to drive his geese into the harn for biolier. Me found them in the orchard, and housed them as he intended. In the morning, to his great atotontohment, his flock was composed of wild geese, which having leccume cxhausted ty flying in the storm, hat olightel still remsem, haveng loosme theroughly domesticatod, What out and stopped the horses,

 Mithsiundav after T＇rimity．
l．uke 10 ．
Dav＇s lengeth 12 hours 54 minuter．
N1 Egidius



＇V 3 Mansuctus




（） $5 \quad 336 \quad 27 \times 21$
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## latike IN

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1：2 J．Wicklifle

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| k | 13 | Amatus |
| s | 14 El．H．Crogss |  |

$\begin{array}{cccc}12 & 55 & 2 & 46 \\ 1 * 4 & 3 & 36\end{array}$

a）Brumo<br>10 Bilcheria

1V 11 Yrotus
： 3 ）digh Soukit nfer Trumity．
S 15 Nicetas
M16＇Euphemia
＇ 1 ＇ 17 Lumpertus
W 15 Emberday
9：13 Micleta
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$2.3!$
3.311 正

$\begin{array}{lllll}35 & 11 & 19 & 19 & 27\end{array}$
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1，wke 7
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4．Johir cau
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7if（1）（；（）10 $-1 i \quad 15$ n！！ 11
\＆ 6 サ5 万人 $1 \because$
－ $1 ; \quad 3 \quad 5 \quad 5713$
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$96 \quad 6 \overline{5} 5115$
！f
 Мн 30－Jероде

## - MOUN'S PHASLiS.


The $1-1$, rain; 2d, :d, varialde; 44h, sth, 6ith, sultry; 7ht 8th, thunder; 9 in, 10 h , rain: 11 h , 12 h , fair; 13 h h, themder;
 fair; 2uth, clouds; 21st, zend, tain; e2h, 2hh, 25th, fair; 2 tith, 27 th, variahb; 284 h , 24th, 301 h , fair.
'Who are gom, sie" saill the f.it ehd cosachonian, pulling himetliup in great indquation.

'Ont Mr ('asey, I beg my lite,' swid the coachomangall ing up the horsas it one.
"What's the miltes" sereamed a slirill voice from the bualy of the conch.
'I'll troable your ledyship to hand me nut sour purser ane rings, and jewelry; and (asay, stepping potioty in the osach winilow.
"What do you evant, at" sereamel the ohd dams-1 within, clapping as loal mouthed brase rencern lmbiors 'Gasey's
 not in word was leti in his lemal.
'How dare you stop noy carmaze" said then oid girt, tahing aim at fine rabina's face,
"I ark your ladyship's pacilon, saill "ascy; "it wion wl
 amil dive ou.
'I aught to arrest vomb' raid the I whe.
'I throw mration yon morey,' sad Casey, falling upen his kuees in the raire.
'Trive mo," said the stout ohd ladys ated the coachaman som made the nags step wht, and left Canty kurelatg in the middile of the moat.
'You did that well,' :aid one of the hoys; to C'asry, when le exarie lach.

'The women are gro sumg wolltore it these paris, "said Casery: the oht hug was willin an are wifhowing taty brame out will a hifandertomss.
'How did you lonem it was chargen'" serid one of the boys.
"Charge ur no charge, it was daugerous, sail (iascy; and then the boys thre o up theis hatr, haghed at him, sind told him it was valy Mrs. ('aptain Matone, thebothered dowager.
-If that is then trull,' suys C'iser,' '1 mant quit this line of road; for my name will be =a lomeser respurted when it
 Woman'- heaing 'rimy"t?

Rusticating.-A correäppondent of the New Oricans l'ivu? vunc, writing froff some- unheard of place in Missouri, on lightens the ineavipaper-paper reading public touching uste of the mudes in whirelt loaders arch up a living. 1t.. says:-
About two montis since thore striyed to this siltaper from parts unknown, "a "Costomer," who immediatelye: it (racted the attention of \%or orikr-living, peace presecteng gentry. Ite was evidently of the "Dicky-Dout" chase, ton" what rendered high particularly the wbiget of attention wow a head from onm "hatf of which all umbrageonsuess wiom Ghorn, while the other half boasted a ficec: of some sis anlyes in langth, fiery red, and wiry as the monstacto of, erizzly bear. When we add to thin peentiarity a coat pait. Takiny somewhat of the characferistics of a certain manes coloured garment we read of in scripture, we need seare ely wonder that the- gentleman was suon lit typon as an : equed " inal hird);" ome perhaps who had flown from the strong cege at lellimun (ity. He was soon, conso jucht!, trrested, ahal as liss anstwers were anything bot setimfact..
 ial. The herem of the Sitate Penticatiary tyas imynemiato ly written to, but his reply threw no light ipem "Hig sitio ject;" morecover the wrong side of his head was diase, ind he conld mut pessibly leclong to that estabiohomen: Recters were ane at adressed in the licepers of othor pait. twarigs in the geighouring siates, hat with ble suecere What was to he done? The mily alternative now, secones?
 yraney Accordagly "hopmin)" was hronght forsh, and
 tomor," prestons in farther proceding».
Jusire-"What is your name, sirrah?



 ins do you whan a living.". **
I-- "A-livin" th, that's cisy; *omelines liy timin"
 In' :haw-hinanifi I commonly do that in Winter, veplis. vern I an subiti."
I.-"R刦ticating! What do.you mean b.y, hat" Fio plain yoursell:"
I.-"Wlyy, rusticatim' is comin' the thing over lie ver.
tayi-smakin' 'The green 'uns-goin' into detirars, as- lhes expoppers niy."


The Tenth Month, or OCTOBER-isid,


42 ] 30n sumday aftur Trimity.
 M21 Ursula T $2 \rightarrow 2$ Cordula
W 23 Severinus
T 2.t Salpme
F 25 Crispin

- S 26 Amandus

4s ] ZIst Sutday afier Tinity.
S. 27 Kibina

Mes Simon Jud.
'T 29 Z,winglius
W 30 Serapion
T, 31 Wolfgang

John 4.

Day's length 10 hours 48 minutes.
Nathfow 22.

conjecture of the weather.
The 1st, 2nd, 3d, fair; 4th, 5th, cloudy; 6th, rain; 7th, 8th, 9 h, fair; 10 h, cloudy; 11 h , fair; 12 hh, cloudy; 13th, 14th, variable; $15 \mathrm{th}, 16 \mathrm{th}$, 17 ith , moderate; $18 \mathrm{th}, 19 \mathrm{~h}$, cloudy; 20th, $21 \mathrm{st}, 22$ nd variable; $23 \mathrm{~d}, 24$ th, 25 th, fair; 26 th , cloudy; 27th, 28th, 29th, fair; 30th, 31 st, pleasant.
more explicit; speak in plain English, or I will at once commit you as a vagrant."

I'-"Jist as you please, judge, - 1 'in not at all tired of rusticatin' yet, us the yeller fever aint over down South, I s'pect; and this here's a werry agrecuble place, 'specially as you gives us coffec."
2.-"Then you are pleased with your silmation?"
1"-"Wery mach, 1 assure you: and an you'r sort of a covy, considerin', I'll tell you all about it-cept in' the 'long-shore businese, whiel, belongs to the crafh, and I wont dewulge-no, I'in a man of honor ! Ihat, as I was sayim', the rusticatin' businces is mine-lhat'e my own hou that branch of the profussion but me, and I ton't wnont to le! it out yet."
J.-"Proceed, 1 anm ail atiention."
P.-"Well, you see, when I gats tired of the 'lung-siore business, which for cerlein reasons, gits sometimes onplea. sant, I jist cuts of this here lair, this fashion, and turns this here cont, sorte: like the pollytishun's does, one hati ways, and then peoplo thialis I's a convict, and gives me quarters, till they finds out they've lieen come it over, like you has; then they givea me a kick, and sels me loose agin,
as I 'spect you wifl. I een a'rost always aclects the conan try for my operations, as they haint got no treed-mill, and giver gowd prowishons: that's the reafon I culls it rusticat. $13^{\prime}$

It neod nearecly be added that Mr, - Puddin' and Tame' received notise to fait.

In Fianders, a siter fell from the top of a boure apon of Bpaniard, and friled him, without jugary to himacif. Upons the issuc of a trist, commeneed by the next of blood to the deceased, the judge decided that ihe complainant should g. to the top of the same house and fall upon the tiler.

Onc asked his friond why he, being himself so stont, had married so smnl! a wife. "Why, friend," said he,"] theoght that you had knoen that of atl evila we aloold choose the leavi."
Great Wetsen-C,
pratkalle flaye．
1．All Saints $\because$ All Souls




Day＇s length 10 houra 14 minutes．
\＄ 3 ＇Theophilus M1 4 Charlotte Th 5 Maladri
W 6 l．gomard
7 15ngelbert
－Cecilia
（9）＇Theodore

S 117 Alpheus M 18 Gelasius T 19 Elizabeth W 20 Amos T． 21 Off V．Mar． Ti 22 Alphonsus Clement

$\begin{array}{lllllllllll}6 & 5.1 & 42 \text { morn．} & 3 & \text { Androm．so．} 2.29 & 15 & 7 & 8 & 4 & 52 & 5 \\ 7 & 35 & 9 & 26 & 12 & 56 & 16 & \text { Fomal．so．} 6 & 13 & 15 & 7 \\ 9 & 4 & 51\end{array}$

 $95011 \quad 3<\quad 3 \quad 55 \min 24$ Altair sets 102414711449 $10351 \geqslant 23454$ 别 $6 \odot$ enters 绘 $\begin{array}{lllllll}11 & 21 & 1 & 3 & 5 & 52 \\ \text { が } & 1<7 * & \text { south } 1216\end{array}$
$\begin{array}{llllll}14 & 12 & 4 & 48 & 10 \\ 13 & 13 & 4 & 47 & 11 \\ \text { 14．} 9 \text { hours } 32 \text { miuntes，} \\ 137 & 144 & 46 & 12\end{array}$

\section*{Matthew 19.} $614 \bigcirc 26$ morn． | 3, | s． 10 | 26 | 16 | 6 | 53 | 5 | 7 | 22 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 3 rises 4 | 11 | 16 | 6 | 54 | 5 | 6 | 23 |  |


 $1616 \quad 575 \quad 326$

Day＇s lengtis！hours 58 minutes．

Day＇s length 9 hourn $3 \overline{2}$ minutes．

## Matthew 24.

## 5ith Sunday after Trinity．

S $2 \pm$ Chrisogen． M 25 Catharine ${ }^{T}{ }^{2} 6$ Conrad $\quad$－ 1

624


 W 27 Jehoshaph． T 28 Guntherus F $5: 29$ Sagturu S 30 St．Andrew 4 5． 61710 0 17 Betelgeu．ri． 6561171844218

The Eleventh Month，or NOVEMBER－1811，
Mmikalle lays．

F 1．All Saints S． 2 All Souls

Moon

ign－Moon＇s／Mons Where Rising \＆place h．$\quad$ m．Philly．Acting．ant noon．

3 Thcopinilus 4 Charlotte 5．Maladifi 8 Leonard
7 Brgelbert
－Cecilia
9）Theodore
and other Miscdlancons mutter．


Day＇s length 10 hours 14 minutes．
Mathew 18.
Day＇s length 10 hours 14 minute

5 2！ 7 7 411114 家 2 子 rises 39
（ $14 \times 26$ morn．

7 （1）（9） 12121.5 䔲

－ $311046 \% 24$ 登 201 Sirius rises $105016(6) 56.5425$

10 $1712229+4302$ 20 Regulus ri． 1211166


45 23il sideling after＇limits．


 1＇1：Jonas
W 13 Winebert ． 3225
T 14 Levin
F 15 Leopold S 16 Ottomar

## 24tb Sunday after Trinity．

## Mathew y．

S 17 Alpheus
M 18 Gelasius
T 19 Elizabeth
W 20 Amos
T． 21 Off．V．Mar．
F 22 Alphonsus Clement

（6） $51<42$ morn． 738,926125616 Fomal．so． 613 15） 7 9 9451 $\begin{array}{lllll}2110 & 9 & 156 & 59 & 29 \\ 2\end{array}$ H1＋ri． 33714710450 | 9 | 6 | 10 | 54 | 2 | 55 | 12 | Rigel rises 7 | 51 | 14 | 7 | 11 | 4 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 4 | 49 |  |  |  |  |  |  |  |  |  |  |  | 95011 34 3550 Altair sets 1024147114499 10351223454 相 $6 \odot$ enters © $\mathcal{S}$

$\begin{array}{llllllllll}11 & 21 & 3 & 5 & 52 & \text { 等 } 1 \sim 7 * \text { south } 1216 & 137 & 1344711\end{array}$ Mathew 24.

Day＇s length 9 hours 32 minutes．
$\frac{5 \text { sh en Sunday after Trinity．}}{\mathrm{S}} \mathrm{E}$

The＇Twelfth Month，or DECEMBBR－1～11．

Remarkable Day：

## 1st Siunday in Alvert



1 1．onginus
2 Candidus
T 3 Cassianus
$\mathbf{W} 4$ 13arbara
T 5 Abigail
F
N
49 J 2ir simalay in Advent．
 M 9）Joachim T 10 Judith W 11 Barsabas T 12 Otilia F 13 Lucy S 14 Nicasius
50．］ 31 Sunday in Advent．

Day＇s length 9 tio．rrs 22 minutes．

6 S．Nicholas
7 Agatho：

## Malihew 21 ．


2 ）rises 3 1？ 16 Rigel rises 617 1 （2）$\delta \mathrm{Reg} \cdot \mathrm{ri}$. $1 . \overline{5} \sigma^{2}+*$＋ises 4

| 10 | 7 | 19 | 4 | 41 |
| :--- | :--- | :--- | :--- | :--- | 19 9） $10 |$|  | 19 | 4 | 41 |
| :--- | :--- | :--- | :--- |
| 20 |  |  |  | 10720.4 .4021 972044022 $\begin{array}{lllllll}9 & 7 & 21 & 1 & 39 & 33\end{array}$ $97 \quad 21143924$ $\times 7 \quad 2943825$ 9 hours 16 minutes．


 $\begin{array}{llllll}1 & 56 & 3 & 44 & 7 & 3 \\ \text { 瓦 } & 16 \text { Sirius rises } \times 21\end{array}$

 4 3人 $626103: 33^{9} 299+$ rises 122

|  | 7 | 23 | 4 | 38 | 26 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 7 | 7 | 33 | 4 | 37 | 27 |
| 7 | 7 | 23 | 4 | 37 | 28 |
| 6 | 7 | 23 | 1 | 37 | 29 |
| 6 | 7 | 24 | 1 | 36 | 30 |
| 5 | 7 | 21 | 4 | 36 | 1 |
| 5 | 7 | 24 | 1 | 36 | 2 |

Day＇s length 9 hours 10 minutes．

M 16 Ananias
T 17 Lazarus
w 18 Emberday
＇1 19 Abraham
F 20 Ammon
S 21 St．Thomas
 John 1.

Day＇s length 9 hour＊ 10 minutes．

S voz Beata
$10 \quad 111 \because \quad 295 \quad 2 \because$ 解 42 in apo．win．com
 23 Dagobert 21 AdamdEve morn． 151 ）rises med 25 Christimas $1 \because 219 \quad 9 \quad 31 \quad 5 \quad 46$ m
 27 John Evan． 2ه H Innocent 52 ］Sunday after Cliristmas．
$\begin{array}{lllll}51 & 4 & 3 & 7 & 41\end{array}$
21 Regulus ris $\propto 4 \overline{5}$

S 29 Noah
M 30 N．Copernic T 31 Sylvester

## l．uke 2.


$\left.\begin{array}{ll|ll|llll}4 & 6 & 6 & 1 & 10 & 43 & \text { des } & 16 \odot\end{array}\right)$ in per．
$450 \quad 7 \quad 21145$ 號 29 Orion south 114

$37 \quad 244 \quad 3617$ | 3 | 7 | 24 | 4 | 36 | 16 |
| :--- | :--- | :--- | :--- | :--- | :--- | $\begin{array}{llllll}37 & 24 & 4 & 36 & 15\end{array}$



CONJECTUTE OF THE WEATHT:R,
Tho 1st, $2 \mathrm{ml}, 3 \mathrm{~d}$, fine, mild; 4th, clouly; 5th, Gth, rain; 7hh, 8ilh, cold; 0ith, 10it, moderate, cloudy; 11/h, 12ih, 13th. cloudy, raigy; 14th, 15 th, 16 th, variable; 17th, cloudy, rainy; 48th, 19th, 20th, fine weather; 21st, 22nd, variable; 23d, 24th, 25th, cloudy; 26th, 27th, 2sil, clear; 29th, 30th, 31st, zild, fair.

Way, the emperor appeared in the door of his tent, and beckoning 'Ploquet, whom lie easily distingnished by hie head dress, which was an ontell sack surmounted by a bloody handkerchicf, ordered lim to approach. Ploguet obeyed, without the least sign of satisfaction.
"Plognet," said the Emperor, "I know that yesterday you wore the first to enter the redonbt; you are a brave soldier, and I am satisficd."
"Faith, my Einperor, it is fortunate fir me that you art ap, fir there are but devilish few who are."

A look of the Eroperor sileneed the murmor caused by this impertinent response, and Napoleon replied:
"Well! let us sec; what do you wish? is it promotion that you desire?"
"Oh: have mercy, my Einperor, I want no more of that; It is enough for me to have the care of a corporal's grard."
"Is it the cross you need? Take this, that we may continue good friende.:

IIe failed, however, to take a part in it, for during the night his wound caused him much suffering, and at day brink the Major declared to him that the least agitation would threaten a gangreme; so in spite of himself; Ploquet emained inactive during this greta day.
It is well known wilh what facility Nopwleon recognis. ed fiecos he had once seen, and how well he refained names. Duriner the refieat, a litile beyend Smolenst, the Emperor, while reviewing the regiment which marchid with the guarde, discovered the ofte cerporal.
"Aly pior Ploquet," said he, "now is the time to le discontented."
"Fiath, my Fmperor, I think you ought to be leus so than we."
'I should lie, my brave fellow, if I were alway" sure of having a liundrel thonsand men like you."
 more than two lhirde of the di tance: cyor the strean, when borue down by the eruwd which ru-hed apon as, we were precipiatad into the river. The corparal liciag an
cxcedleat swimmer, prased! his lofl hand under my clim,
swam with lhs right, and in spitc of the imnense rakes
of thating ies, whel thremened every iastant to cut on in
two, we arrived firt on the opposite shore, which war a'-
ready planted with Russinn cannon. I wished to roit-
And detaching his cross, Napoleon, with the gencral with the intense cold,and iamediately commenced running, acclamation, presented it to Ploquet, who took it with one I following behind. IIe liad hardly taken a hundred steps hand, while with the other he retorned a military salate when he fefl with his face in the snow; a, ball from the He quietly attached it to one of the button holes of lis cont Russian cannou had struels him, and brolen both: his legw. without expressing the least emotion; while of nill the I ran to his assistance.
epectators of that scone, Napolcon not exeepted, Ploquet only remained unmoved, and the Emperor, withdrawing Shto his tent, could seurecly avoid steying, "There is : grumbler whom it is very difficult to sitisfy.
A few days nfter appeared the fimous prochamation, commencing with these words-"Soldiers, behold the battle you have so much desired!"
5.Desired?" murnured Ploquet;"desired-a fight with an empty belly!"
"You can avoid being in it, corporal," suill I; 'go to the hospital."
"What should 1 do at the frospital?"
"Yois will be sheltered from the cannon."
"But 1 do not wint to be there; I sheltered! It is amusing, is it not, to liear and ce notheng? I Want the spot of timige there."

C2
"March!" said he.
"Corporal," I replicd, "you Jave eaved my life every lour, and I will not abiodon yon."
"Marcha" kaid he; 'I nul happier than you-in tive inutes 1 slall be colder."
This was the first time in his hife, perhops, that he seemed satisfied with his condition, and in a few minutes lie -pressing to his lips the eross which the Fimperor so recently gise hin-expirnt.

Atter a consultation, several dectors deciles? that a drope sical pationt shouid lic rappect. Wpun liearing the decision, a se of the siolk manappromeled bion and exelmaned, " $\mathrm{F}_{\mathrm{a}}$ ther: don't sulunit to the opmaliot, tor liere never was any-


## THE

## MORAL ALMANAC,

FOR THE YEAR

## 1844:

BEING BISSEXTILE, OR LEAP YEAR.

Calculated for the Latitude and Meridian of Pennsylvania, $\mathcal{N}$ : Jersey, and the Northern and Western States.

## PHILADELPHIA :

PUBLISHED BY THE TRACT Association of FRIENDE,
AND TO BE HAD AT THEIR DEPOSITORY, NO. 50, NORTH FOURTH STREET.

JOSEPH RAKESTRAW, PRINTER.


## NOTES TO THE reader.

1. The calculations of this Almanac are made to mean solat time chiefly-excepting the sun's declination, and rising and setting of the sun-which are calculated to apparent time, to which add the equation, when the clock is fast, and subtract when slow, for mean or clock time.
2. The sun's declination is given for every noon.
3. The rising, setting, or southing of a star, may be carried several days backward, by adding, or forward, by subtracting four minutes per day.

## ASTRONOMICAL CHARAGTERS EXPLAINED.



## COMMON NOTES, FOR 1844.

## Dominical Letters, G \& F $\mid$ Lunar Cycle, . . . 2 Solar Cycle, . . . . 5 | Epact, . . . . 11

## ECLIPSES IN THE YEAR 1844.

The eclipses for this year will be three of the Sun and two of the Moon.

1st. A total eclipse of the Moon, on the 31st of the Fifth month, rising partly eclipsed.

|  | Beginning. Middle. End. |  | Size of eclipse. |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | h. m. | h. m. | h. m. |  |  |
| Boston, | 5 | $24 \cdot 7$ | 6 | 5.9 | 7 |
| 47.1 | 1.327 | on the north- |  |  |  |
| Philadelphia, | 4 | 8.3 | 5 | 49.5 | 7 |
| 30.7 |  | ern limb. |  |  |  |
| Cincinnati, | 3 | 31.5 | 5 | 12.7 | 6 |

2nd. A partial eclipse of the Sun, Sixth month 15th, invisible here. This eclipse will be visible in the South Pacific Ocean.

3rd. A partial eclipse of the Sun, Eleventh month 9 th. This eclipse will only be visible in a small part of the Great Southern Ocean.

4th. A total eclipse of the Moon, Eleventh month 24th. The Moon will rise partly eclipsed,

|  | Beginning. | Middle. | End. | Magnitude. |
| :---: | :---: | :---: | :---: | :---: |
|  | h. m. $55.3$ | h. m. | h. m. 855.1 | 185 |
| Philadelphia, | 448.9 | 641.8 | 838.7 | ern limb. |
| Cincinnati, | 412.1 | 67.0 | 819 |  |

5th. A partial eclipse of the Sun, Twelfth month 9th, visible as follows.

Beginning. Great. obscura'n. End. Magnitude.

|  | h. m. | h. m. | h. m. |  |
| :---: | :---: | :---: | :---: | :---: |
| Boston, | 3.42 | 417 | 452 | 0.198 |
| Philadelphia, | 325 | 40 | 434 | 0.184 |
| Cincinnati, | 233 | 317 | 358 | $0.26 \%$ |

## Times of holding the Yearly Meetings of Friends on the Continent of America.

The Yearly Meeting for Pennsylvania, New Jersey, Delaware, and the eastern parts of Maryland, is held at Phimadele Pmis, the third Second-day in the Fourth month.
The Yearly Mecting for the state of New York, and parts adjacent, is held in Nsw York, on the Second-day after the fourth First-day in the Fifth month.
The Yearly Mecting of Rhode Island, for New England, begins with the meeting of ministers and elders at Newfort, on the Seventh-lay following the second Sixth-day in the Sixth month. The meeting of discipline convenes the following Se-cond-day.

Baltimore Yearly Meeting, which takes in the Western Shore of Maryland, and part of Virginia and Pennsylvania, is held at Baltimore, the last Second-day in the Tenth month.

Ohio Yearly Meeting, which takes in the western parts of Pennsylvania, is held at Mount-Pleasant, on the Second-day following the first First-day in the Ninth month.

The Yearly Mceting for Virginia, is held alternately at Surrmerton and Cedar Creek, the Second-day after the third Sev-enth-day in the Fift month: at Summerton the present year, (1844.)

The Yearly Meeting for North and South Carolina, and 'Fennessee, is held at New Gardex, the Second-day after the first First-day in the Eleventh month.

Indiana Yearly Meeting is held at White Water, the Fifhday preceding the first First-day in the Tenth month.

## --00--

The Yearly Meeting of London, is held on the Fourth-day following the third First-day in the Fifth month.

Dublin Yearly Meeting, is held on the Second-day following the last First-day in the Fourth month.

## Times of holding the Quartirly Mertings or Friends of Philadelphia Yearly Mteeting.

Philadelphia Quarterly Meeting is held at the meeting-house on Mulberry Streel, Philadelphia, on the first Second-day in the 2nd, 5th, 8th, and 11th months, at 10 o'clock.

Abington Quarterly. Meeting is held at Germantown, on the Fith-day following the first Second-day in the 2nd, 5th, 8th, and 11th months, at 10 o'clock.

Bucks Quarterly Meeting is held the last Fifth-day in the 2nd, 5 th, Sth, and 11 th months; - in the 2nd month at Buckingham; in the 5th and 11that Falsington, and in the Sth at Middletown.

Concord Quarterly Meeting is held at Concord, on the Thirdday following the third Second-day in the 2nd, 5th, 8th, and 11th months, at 11, A. M.
Cain Quarterly Meeting is held at East Caln, 3 miles west of Downingtown, on the Sixth-day following the second Secondday in the 2nd, 5 th, 8th, and 11 th months, at $11, \Lambda . M$.
Western Quarterly Meeting is held at London Grove, old house, on the Sixth-day after the third Sccond-lay in the and, 5 th, 8th, and 11 th months, at 11, A. M.

Burlington Quarterly Mecting is held at Burlington, on the Third-day after the last Second-day in the 2nd, 5 th, 8th, and 11 th months, at $10, \mathrm{~A}$. M.

Haddonfield Quarterly Meeting is held at Haddonfield, on the Fifth-day following the eecond Second-day in the 3rd-at Evesham, in the 6th-at Upper Evesham, in the 9th-and at Chester, in the 12th month, at $100^{\circ} \mathrm{clock}$.

Shlem Quarterly Meeting is held on the Fifth-lay following the second Second-day in the 2nd, 5 th, 8th, and 11th months-ut Salem in the 5th and 11th months-at Woodbury in the 2nd and 8th months; at 10 oclock, in the 5th and 8th months; at 11 $o^{\prime}$ clock, in the 2nd and 11 th months.

Shrewsbury and Rahway Quarterly Meeting is held the Fifthday after the second First-day in the 2nd, 5th, 8th, and 11th months-at Plainfield, in the 2nd and 8th, and at Shrewsbury in the 5 th and 11 th months-all at 11, A. M... except that at Plainfield, in the 8th month, which is at $10, A$. M.


O how different is the peace of God from that which the world can bestow! It calms the passions, preserves the purity of our conscience, and is inseparable from righteousness,-unites us with God, and fortifies us against temptations ; and when temptations do not overcome us, they always yield good fruit.

MOON'S PHASES.

"Let us hear the conclusion of the whole matter; fear God, and keep his commandments : for this is the whole duty of man. For God shall bring every work into judgment, with every secrel thing, whether it be good, or whether it be evil."

## PROVIDENTIAL WARNING.

The following providontial deliverance from imminent danger, is related by Captain Fanning, in the volume containing his "Voyages round the World." The incident occurred during a voyage in the Pacific, after seal-skin fur.

## He says:

"At nine o'clock in the evening, my customary hour for retiring, I had as usual repaired to my berth, enjoying perfect good health; but botween the hours of nine and ten, found myself, without being sensible of any movement or exertion in getting there, on the upper steps of the companion-way. After exchanging a few words with the commanding officers who was walking the deck, returned to my berth, thinking how strange it was, for I never before had walked in my sleep. Again I was occupying the same position, to the great surprise of the officer-not more so than to myself, after having slept some twenty minutes or the like. I was preparing to return to the cabin, after answering in the affirmative his inquiry, whether Captain Fanning was well. Why; or what it was, that had thus brought me twice to the companion-way, I was quite unable to tell; but lest there should be any portion of vigilance unobserved by those then in charge, I inquired of the officer how far he was able to see around the ship; he replied, that although a little hazy, he thought he could see a mile or two, adding, that the look-out was regularly relieved every half hour. With a strange sensation upon my mind, I again returned to my berth. What was my astonishment on finding myself the third time in the same place ! with this addition ; I had now, without being aware of it, put on my outer garments and hat. Then I conceived some danger was nigh at hand, and determined upon laying the ship to for the night. She was then under full sail, going at the rate of five or six miles per hour. All her light sails were accordingly taken in, the top-sails were single-reefed, and the ship brought to forthwith, on the wind. I gave directions to the officer in charge to tack every hour and to pass the direction to the officer who should relieve him, that we might maintain our present position until morning; adding a request that he would call me at day-light, as he himself would then be again on watch. He was surprised-looked at me with astonishment--appeared half to hesitate to obey, supposing me to be out of my mind. I observed I

MOON'S PHASES.


|  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1 n |  |  | San'1 | Suni |  |  |  | Saug |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| 26 | rises 4 h |  | 58 |  |  | 36 | 55 | 95 |  | 336 |
|  |  |  | $\begin{array}{ll}36 & 421\end{array}$ | 0.49 |  | 34 | 20 | 1038 |  |  |
| 4 D | D rom |  | 34 Rise | 155 |  | 33 | Hases | 1119 |  |  |
| $5{ }^{5}$ | 2-tal'y \# \% 8 (9) |  | 326 | 216 |  | 31 |  | 1154 |  |  |
| $6$ | +0 |  | 31.648 | 251 |  | 29 | 64 |  |  | 5 |
|  | -6. |  | 29734 | 335 |  |  | 725 | 038 |  | 5 |
|  | 2450. 31. 56 m |  | 28 \$ 17 | 41 |  | 26 | 811 | 1 |  | 55.5 |
|  | - |  | 2698 | 45 | 10 | 24 | 91 | 15 |  | 6181 |
| 10 | 2 sumin 8 | 10 | 510 | 546 | 12 |  | 5 | 24 |  |  |
| 11 D | D Fomal. s. 9h. 27 | 11 | 2; 1056 | 62 | 13 |  | 1049 | 3 |  |  |
| 12 | Marik; s | 12 | 211151 | 72 | 14 |  |  |  |  |  |
| 13 | Prises 41 | 13 | 20 mor | 83 | 15 |  | mor | 53 |  |  |
| 14 | puca ra | 14 | 18 | Y 4 4, | 16 | 16 | 041 | 64 |  |  |
|  | 5 D in spugre. | 15 | 1714 | 1048 | 17 | 14 | 1.5 | 7 |  |  |
|  | 11 | 16 | $15 \quad 237$ | 114 | 19 | 13 | 23 |  |  |  |
| 16 |  | 17 | 14.334 | 027 | 20 | 11 | 332 | 93 |  |  |
|  |  | 18 | 13.431 |  | 21 | 10 | 431 |  |  | 939 |
| 19 | 9 eclip. in | 19 | 11530 | 141 | 22 |  | 531 | 104 |  | 10 |
|  |  | 20 | 10 Sets | 217 |  |  | Sets | 1 |  |  |
|  | brises 5 h . 9 mm . | 21 | 868 | 25 |  |  |  | 1155 |  |  |
| $22$ | 11.S 101. | 22 | 652 | 328 |  |  | 645 | 031 |  |  |
|  | Prises 5 h | 23 | 740 | 4 | 37 |  | 738 |  |  | 11 |
| 4 | 2soath 2 h . | 25 | 83.5 | 449 | 28 |  | 827 | 152 |  |  |
| 35. | D 12 siuth 71. 32 | 26 | 933 | 534 | 29 | 459 | 927 | 237 |  |  |
| $26$ | ol ri 10h. 48 | 27 | 11038 | 627 | 31 |  | 103 | 330 |  | 12292 |
|  | Fomal S. 8 h | 28 | 01145 | 73 | 32 | 56 | 114 | 437 |  |  |
| 28 | in Aphe | 29 | 459 morn | 85 |  | 54 | no | 557 |  |  |
|  |  | 80 | 5805 | 1020 |  | 53 | 0, | 7 |  |  |
| 0 | 6 D ill perigee. | 31 | $56 \sim 3$ | 1130 |  | 52 |  | 833 |  | 碦 |
|  | 7 M |  |  |  |  |  |  |  |  |  |

"Let the wicked forsake his way, and the unrighteous man his thoughts ; and let him return unto the Lord, and be will have mercy upon him ; and to our God, for he will abundantly pardon."
"The ornament of a meek and quiet spirit is, in the sight of God, of great price,"

MOON'S PHASES.

|  | Phitaclelphic. |  | Boston. |  |  | Cincinnath. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Full Moon, | D. | $\begin{array}{ll} \hline \text { I. } & \text { K. } \\ 4 & 10 \quad \text { M. } \end{array}$ | $\begin{gathered} \mathrm{B}_{4} \\ 3 \end{gathered}$ | $\begin{aligned} & \text { H. } \\ & 4 \end{aligned}$ | M. | $\begin{gathered} \mathrm{n} \cdot \\ 8 \end{gathered}$ | $\mathbf{H}_{\mathrm{a}}$ | $\begin{aligned} & \text { M1 } \\ & 34 \end{aligned}$ | M. |
| Last Quarter, | 10 | $\begin{array}{lll}6 & 43 & \text { A. }\end{array}$ | 10 | 70 | A. | 10 | 5 | 7 | A. |
| New Moon, | 18 | 5 59 A. | 18 | $6 \quad 16$ | A. | 18 | 5 | 23 |  |
| First Quarter, | 25 | 5. 30 A. | 25 | $5 \quad 47$ | A. | 25 | 4 | 54 | A. |


|  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & 8 \\ & \underline{2} 0 \end{aligned}$ | REMA |  |  | Moor mets | $\left\|\begin{array}{c} \text { High } \\ \text { water. } \\ \text { Phila: } \end{array}\right\|$ |  | SuIt. | s. |  |  | (9) Skn/6 |
| 10 |  |  | 454 | 22 | 110 26 | 638 | 449 | 23 | M 16 |  | $\begin{aligned} & M 8 \\ & 16 \end{aligned}$ |
|  |  | 35 | 58 | 532 | 113 | 39 | 88 | 534 | 058 |  | 16 |
|  |  | 36 | 51 | Rises | 155 | 41 | 47 | Rises | 140 |  |  |
| 4 | 4 | 37 | 50 | 67 | 237 | 42 | 46 | 61 | no |  | 6 |
|  | Arie. S. 10h. 5 | 39 | 49 | 656 | 316 | 43 | 44 | 649 | 019 |  |  |
| 6 | 5 south 6 h .45 m | 40 | 48 | 748 | 354 | 44 | 43 | 741 | 057 |  | 61 |
|  | Foml. S, 7h. 41 | 41 | 47 | 844 | 438 | 46 | 42 | 8.37 | 136 |  | 61 |
| 8 D | \% rises 5 h. 51 m | 42 | 46 | 939 | 51. | 47 | \% | 933 | 216 |  |  |
|  | Mar. S. 7h. | 43 | 45 | 1035 | 5.5 | 48 | 40 | 1030 | 2 |  | 6 |
| 10 | Ali. S. | 44 | 44 | 1132 | 643 | 50 | 39 | 1128 | 34 |  |  |
| 11. | D in | 45 | 45 | morn | 738 | 51 |  | mo | 4 |  |  |
|  | Reg. ri. 1 th. | 46 |  | 028 | 842 | 52 | 37 | 025 | 545 |  | 61 |
| 18 | \% S. 1h. $24 . \mathrm{M}$ | 48 | 1 | 124 | 95 | 53 | 36 | 122 | 653 |  | , |
| 4 | ¢ rises 4h. 5.5 | 49 | 40 | 220 | 1052 | 55 | 35 | 219 | 755 |  | 518 |
| 15 D | 7水's S. 11h | 50 | 40 | 318 | 1148 | 56 | 34 | 3 | 851 |  | 51 |
| d | \$ ¢ D | 51 | 39 | 418 | 035 | 57 | 38 | 420 | 938 |  | 5 |
|  | great. | 52 | 38 | 518 | 116 | 58 | 32 | 521 | 1019 |  |  |
| 18 |  | 58 | 37 | Sets | 155 |  | 31 | Scis | 1058 |  |  |
|  | 12 soutl | 55 | 37 | 534 | 235 |  | 30 | 527 | 1138 |  |  |
| 20. |  | 56 | 36 | 627 | 314 |  | 30 | 626 | 017 |  |  |
| 217 | 25 south | 57 | 35 | 727 | 356 |  | 29 |  | 059 |  |  |
| 22 E | , | 58 |  | 831 | 438 |  | 28 | 824 | 141 |  | 14201 |
|  | Arie. S. 91 . 46 | 59 |  | 936 | 5 |  | 27 | 930 | 225 |  | 13202 |
| , |  |  | 4 | 10 | 611 | 7 |  | 1040 | 314 |  | 20 |
|  | , |  | 33 | 115 | 710 |  |  | 1150 | 413 |  | 132047 |
|  | A |  | 35 | norn | 825 | 9 |  | morn | 528 |  | 122059 |
|  |  |  | 32 |  | , 947 | 10 | 25 |  | 650 |  | 122110 |
|  | Ald. S. 11h. 54 |  | 32 |  | 110 | 12 | 25 |  |  |  | 122121 |
| 29 I) | \% south 5h. 18. |  | 31 | 316 | 6 morn | 13 | 24 | 318 |  |  | 112131 |
| 3012 | 24south Oh. 8 m | - 7 | 31 | 42 |  | 14 | 24 | 42 | 957 |  | 112141 |

"Examine yourselves, whether ye be in the faith ; prove your ownselves. Know ye not your ownselves, how that Jesus Christ is in you, except ye be reprobates?"
"As many as are led by the Spirit of God, they are the sons of God."
"If any man have not the Spirit of Christ, he is none of his."

## MOON'S PHASES.

|  | Philadelphia. |  |  |  | Moston. |  |  |  | Cincinnati. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | D. |  |  | M. | ${ }_{7}$ | H. $1$ |  | M, | $\frac{13}{7}$ | ${ }^{11} 0$ |  | M. |
| Full Moon, | ${ }_{13}^{7}$ |  |  | A. | 13 |  |  | A. | 13 |  |  | A. |
| New Meon, | 21 |  |  |  | 21 | 6 | 41 |  | 21 | 5 |  |  |
| Nirst Quarter, | 99 | 5 | 18 | A. | 29 | 5 | 35 | A. | 29 | 4 |  |  |


|  |  | $\begin{gathered} \text { Pata, Pr } \\ \begin{array}{c} \text { Onio } \end{array} \\ \hline \end{gathered}$ | Penna. Ni. Je is and Indian. | ersell. <br> ma. |  |  | $\begin{aligned} & \text { Fingla } \\ & \text { and } \end{aligned}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Sun |  | Moom | $\begin{aligned} & \text { High } \\ & \text { wner } \end{aligned}$ |  |  |
| 会 |  | rises m | Sets | Pmia. | rise | sets. | Sets. | Borth |  |  |
|  |  |  | 9 morn |  |  |  |  | 549 |  |  |
|  |  | 5 | 80121 | 1015 | 5 | 14 | 05 | 718 | 6 |  |
| 32 | \% | 5 | 7181 | 1135 | 59 | 15 | 056 | 838 |  | 17 |
| 43 | 2rises 1h. 1 | 6 | 2 | norn | 50 | 12 | 155 | 940 |  | 1715 |
| 54 | S. 1h. 12 | 6 | 38 | 037 |  | 10 | 3.11 | 1030 |  | 55 |
| 6 | Auair S. 10h. 45. | 7 | 418 | 127 |  |  | 4121 | 1116 | 6 | 164 |
|  | Din perigee. | 8 | 3 Rises | 213 |  |  | Hises | 157 |  | 162 |
|  | $h^{\circ} \delta^{\text {c }}$ D | 9 | 750 | 254 |  |  | 750 n | morn |  | $169 \%$ |
| 9 D | of in aphel | 10 | (0) 827 | 335 |  |  | 825 | 038 |  |  |
| 10 | Atair S. 10 h .25 | 116 | 599 | 413 |  |  | 90 | 116 |  | $1534 \%$ |
| 11 |  | 12 | 58940 | 455 |  |  | 936 | 158 |  | 151 |
| 12 | ¢̣ rises 2 h .37 m | 13 | 571019 | 539 |  |  | 1012 | 242 |  |  |
| 18 | tsets 7 h .25 m | 14 | 551058 | 629 |  |  | 1052 | 3 |  |  |
| 14. | $\mathrm{h}^{\text {S }} \mathrm{S}$. | 15 | 541143 | 730 |  |  | 113 |  |  | $1421$ |
| 1.5 |  | 16 | 53 morm | 845 10 | 112 |  | norn | 548 710 |  |  |
| 16. | $\frac{2}{2 r i s e s} 1 \mathrm{~h} .34 \mathrm{~m}$ | 17 | $\begin{array}{lll}51 & 081 \\ 50 & 121\end{array}$ | 107 | 14 |  | 024 114 | 710 818 |  | 13 25 \% |
| 17 | 2 Fomal. S. 1h. 7 | 18 | $\begin{array}{lll}50 & 121 \\ 49 & 213\end{array}$ | $\begin{array}{\|cc\|}1115 \\ 0 & 9\end{array}$ | 14 |  | 114 | 818 912 |  | 136 |
| 18 | Lyra S. 8 | 19 | $\begin{array}{llll}49 & 1 & 13 \\ 47 & 3 & 9\end{array}$ | 1 0 | 15 | 53 | 3 | 912 |  | 12468 |
|  |  | 21 | 464 | 130 | 17 | 50 | 358 | 1033 |  | 122614 |
|  | 111 | 22 | 44 Sets | 23 | 18 | 48 | Sets. | 11 |  | 12626 |
| 22 | $\bigcirc$ | 23 | 43652 | 235 | 19 | 47 | 653 | 138 | 3 | 1146 吹 |
| 23 D | ¢rises 2 h .56 m | n 23 | 41722 | 35 | ${ }^{20}$ | 45 | 721 |  |  | 112619 |
| 24 | $2{ }^{\text {S S S }}$ S 11 h .47 m | 24 | 40750 | 336 | 21 |  |  | 039 |  | 11645 |
| 25 |  | 25 | 39820 <br> 87 <br> 858 | 47 | 22 |  |  | 110 |  |  |
| 26 | 4 Mar. S. Oh. 26 m | m ${ }^{26}$ | 37 86 8689 |  |  |  |  |  |  |  |
| 275 | 5 Spi, sets 9h. 37. | 27 | 36929 |  |  |  |  |  |  |  |
| 28. | 2 2 rises Oh. 54 m | ${ }^{1}{ }^{28}$ | 3410 3210.55 | 6 |  |  | 71002 |  |  | $921{ }^{9} 2$ |
| 1 | ${ }_{7} 7$ Atair S. 9 h .11. | 1. 29 |  |  | $8$ |  | 41141 | 521 |  | 85917 |
|  | D Fom. S. Oh. 12 m | m 30 | 311148 29 morn |  | ${ }^{27}$ |  | 2 morm | 651 |  | d) 838 ks |

"The fear of the Lord, that is wisdom ; and to depart from evil is understanding."
"Like as a father pitieth his children, so the Lord pitieth them that fear him. For he knoweth our frame ; he remembereth that we are dust."




| 33 | 26 | 1 | 55 | morn |
| :--- | :--- | :--- | :--- | :--- |
| 34 | 25 | 3 | 6 | 0 |

b. $)$

Boutow, N: Bngland, N. York Stato, and Michigan.

| $\bigcirc$ |  |
| :---: | :---: |
| 0 | 81614 |
| 0 | 754 m |
| 1 | 73214 |
| 1 | 710 |
| 1 | 64815 |
|  | 6259 |
| 2 | 6315 |
| 2 | 54029 |
| 3 | 518 |
| 3 | 45528 |
| 3 | 432 F |
| 4 | 4922 |
| 4 | 3.46 |
| 4 | 32317 |
| 5 | 3028 |
| 5 | 2378 |
| 6 | 21422 |
| 6 | 151 吹 |
| 6 | 12516 |
| 7 | 1428 |
|  | $0.41 \sim$ |
| 7 | 01722 |
|  | uth |
|  | 02917 |
| 8 | 0531 |
| 9 | 11618 |
| 9 | 14026 |
| 9 | 24 kg |
| 16 | 22723 |
|  | 251 cm |

"As for man, his days are as grass; as a flower of the field, so he flourisheth. For the wind passeth over it, and it is gone ; and the place thereof shall know it no more. But the mercy of tho Lord is from everlasting to everlasting apon them that fear him, and his righteousness unto children's children, to such as keep his covenant, and to those that remember his commandments to do them."

MOON'S PHASES.


If thou art the parent of children, so behave thyself among them that they may love and honour thy presence. So carry thyself, that they may rather fear thy displeasure than thy correction. When thou reprovest, do it seasonably-when thou correctest, do it not in a passion. As a wise child makes a glad father, so a wise father makes a happy child.

## MOON'S PHASES.

|  | Philadelphia. |  |  |  | Boston. |  |  | Cincemiati. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| First Quarter, | $\begin{gathered} \mathrm{y} . \\ 1 \end{gathered}$ | 4. | $\begin{aligned} & \mathbf{x r}_{1}^{28} \\ & 28 \end{aligned}$ | 4. | D. | $\begin{array}{lll} \hline \mathrm{H}_{4} & \mathrm{M} \\ 4 & 40 \end{array}$ |  | $\begin{gathered} 1 . \\ 1 \\ i \end{gathered}$ | $\frac{H_{i}}{3}$ |  |  |
| Fill Moon, | 8 | 6 | 10 | A. | 8 | 6 | $\stackrel{1}{\text { A }}$ | 8 | 5 |  |  |
| Last Quarte | 15 | 8 | 23 | m . | 15 | 840 | M. | 15 | 7 |  |  |
| New Moon, | 2 | 5 | 2 | M. | 23 | 319 |  | 23 | 2 | 26 |  |
| First Quarte | 31 | 6 | 2 | m, | 31 | 619 |  | 31 | 2 | 26 |  |


|  |  | Phila. Perna, N: Jersey, Onio aml Indiana. |  |  | Boston, N: England, N: York Sinle, amil Michitan |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 震 |  |  |  |  |  |  |  |  |  |  | 1i.1 |
|  |  |  | Bct | \% | rines |  | Sets | Bost |  |  |  |
|  |  |  |  |  |  |  |  | 410 |  |  |  |
|  | 5 f sets 8h. | 40 | 27 mor | 810 | 32 |  |  | 517 |  |  |  |
| 6 | 6 Lyra S. 11h, 43 | 41 | 27016 | 931 | 33 | 35 | 012 | 634 |  |  | 2 |
|  | 72 rises 2h. 13. | 41 | 27033 | 10.47 | 3 | 35 | 04 | 750 |  |  | 256 |
| 5 D | 2 rises 10h. 3 . | 42 | 27115 | 5115. | 34 | 34 | 12 | 858 |  | 422 | 248 |
|  | \% 8 | 42 | 26228 | mor | 35 | 34 | 21.5 | 955 |  | 422 | 241 |
|  |  | 43 | 26 S 19 | 052 | 35 | 3.4 | 312 | 1044 |  |  | 236 |
|  | 4 Ant. S. 9 h .12 m | 44 | 26 Rise | 141 | 36 | 33 | Rise | 13 |  |  |  |
|  | 5 Lyra S. 11/ 20. | 45 | 25755 | 227 | 37 | 33 | 758 |  |  | 22 | 1 |
|  | 6 Din perigec | 46 | 25853 | 314 | 37 | 33 | 848 | 017 |  | 221 | 215 |
|  | 7 Alt. S. 01 | 46 | 25918 | 351 | 38 | 32 | 91 | 05 |  | 2 | 2 |
| 12 D | o | 46 | 24954 | 435 | 39 | 31 | 95 | 136 |  | 5215 | 159 |
| 13 | P rises 2 h. 10 m | 47 | 241029 | 515 | 40 | 30 | 102 | 21 |  | 21 | 50 |
|  | Form. S. 3h. 19 | 48 | 2311 | 61 | 40 | 30 | 110 | 3 |  | 5214 | 14 |
|  | 5 sets 8 h .27 m | 48 | 231139 | 655 | 41 |  | 1135 | 358 |  |  | , |
| 16.5 | Reg. S. $9 \mathrm{~h}, 14$. | 49 | 22 morn | 83 | 42 | 29 |  |  |  |  | 123 |
| 17.6 | यrises 1 h . 30 m | 50 | 22.018 | 910 | 48 | 29 | 011 | 61 |  | 6211 | 1 |
|  |  | 51 | 21059 | 1038 | 44 | 27 | 05 | 741 |  | 621 |  |
|  | \% | 51 | 20134 | 144 | 45 | 27 | 137 | 847 |  | 6205 | 51 |
| 20.2 | \% stationary. |  | 20232 | 035 | 46 | 27 | 225 | 93 |  | 6204 | 40 |
| 21.3 | 2 rises 8h. 59. | 58 | 19 324 <br> 18 418 | 116 | 46 | 26 | 316 | 19 |  |  |  |
|  | ( ${ }^{\text {Prises } 2 \mathrm{~h} .13 \mathrm{~m}}$ | 5 | 18.4 | 149 298 | 47 | 25 | 412 | 1052 |  | 6201 | 17 |
|  | Spi.sets | 55 | 17 Se | 228 | 48 | 24 | Sels | 1131 |  | 620 | 5 |
| 25 | Din ap. | 57 |  | 331 | 50 | 22 | 82 | 03 |  |  |  |
| 26 D | 4 rises 1h. Om | 57 | 15849 | 42 | 51 | 21 | 849 | 15 |  |  | 27 |
| 27 | s | 58 | 14918 | 434 | 52 | 20 | 916 | 137 |  | 191 | 13 |
| -29 | ''st. elong E. | 59 | 13.946 |  | 53 | 19 | 944 | 2 |  | 185 | 39 |
| 2981 | yra S. 10 h .1 m | 50 | . 121016 | 545 | 54 | 18 | 1012 | 248 |  |  | 45 |
| 30 <br> 31 <br> 1 | Ant. S. 7 h .46 m . | 1 | 111051 | 631 | 55 |  | 1046 | 334 |  | 183 | 31 28 |
| 31. | in aphilion. |  | 101129 \| | 730 | 56 |  | , | , |  |  |  |

" I went by the field of the slothfol, and by the vineyard of the man void of understanding : and lo! it was all grown over with thorns; and nettles had covered the face thereof; and the stone wall thercof was broken down. Then I saw and considered it well : I looked upon it and received instruction."

MOON'ヨ PHASES,

|  | Philaselphia. |  |  | Boston. |  |  |  | Cincimadi. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| First Quarter, | $\begin{aligned} & 1 \\ & 3 \end{aligned}$ |  |  | D. |  |  |  |  |  | m. |  |
| Fuil Moon, | 11 | $\begin{array}{ll} 0 & 10 \\ 0 & 54 \end{array}$ | A. | $\begin{array}{r} 3 \\ 11 \end{array}$ | $0$ | $27$ | A. | $3$ | $11$ | $34$ | M. |
| Last Quarter, | 18 | 3 <br> 12 | ${ }_{\text {A, }}^{\text {A. }}$ | 118 | 1 | 11 | A. | 11 | 0 | 18 | A. |
| New Moon, | 25 | 11.47 | ${ }_{\text {A. }}^{\text {M, }}$ | 18 25 | 1 0 | 40 | A. | 18 25 | 11 |  | A |



A wise and clear consideration of our latter end, neither. renders us sad, melancholy, nor disconsolate, nor does it unfit us for the business and effices of life, but makes us more watchful, vigilant, industrious, sover, cheerful and thankful to that God, that hath been pleased thus to make us serviceable to him, comfortable to ourselves, profitable to others; and after all this, to take away the bitterness

MOON＇S PHASES．

|  |  | Philadelphia． |  | Boston． |  |  | Cincimnati． |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| First Quarter， Full Muou， Last Quarter， New Moon， |  |  |  |  |  |  |  | H. |  |  |
|  |  | 51 | M． |  |  |  |  |  |  | M． |
|  |  | 5 | M． | 8 |  |  |  |  |  | A |
|  |  | 25 |  | 17 8 |  |  |  |  |  |  |
|  |  | Phila．Peana，N：Jorser＇ OMio and Fulinun． <br> Bonton，N：England，N： <br> York State and Michigan． |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| ER |  | Sun［8un | Moon |  |  |  |  | High wator |  |  |
|  |  | r | Sets 1 | Ppila． | riser |  |  |  |  |  |
|  |  | $5649$ | morn | 6 m |  |  |  | 310 |  |  |
|  | 7 कriges 3 h .18 m | 450 | 08 | 6584 | 459 | 55 | 012 | 4 |  | 15248 |
| 3 J | ${ }^{1}$ | 51 | 0.43 | 757 | 57 | 56 | 047 | 5 |  | 154215 |
|  | 2 S sets 10h． 22 m | 52 | 115 | 92 | 56 | 57 | 17 | 6 | 3 | 027 |
| 5 | osets | 53 | 144 | 1012 | 55 | 58 | 145 | 715 |  | 1617 将 |
| 6 | 4 Ali．s． 9 h .56 m ． | 459 | 214 | 1112 | 54 | 59 |  |  |  |  |
| $\checkmark$ | 5 2Lsets 7 h .25 m ． | 5855 | 244 | morn |  |  |  |  |  |  |
| 8 | 6 Sp＇a s．10h． 18. | $56 \quad 56$ | 314 | 05 | 51 |  |  |  |  |  |
| 9 | 7 h rises 1 h .54 m ． | 55 | 3 | 050 | 50 | 2 | 34310 |  |  |  |
| 10 | $\mathbf{D}$ Arct．S． 10 h .53 | $54 \quad 58$ | 224 | 131 | 49 |  |  |  |  |  |
| 11 | 2 ¢ gr．elong W． | 53.59 | Rises | 211 | 48 |  |  |  |  |  |
| 12 | 3 Ant．S．1h． 0 m ． | 5270 | 845 | 252 | 47 |  |  |  |  | 182324 |
| 18 | 4 \％rises 2 h .59 m | 51 | 943 | 333 |  |  | 1040 | 118 |  | 1839 vg |
| 14 | 5 4 4 （9）Ali．s． 928 | 50 | 1035 | 416 | 3 |  | 1125 | 23 |  | 185323 |
| 15 | 6 Din perige | 49 | 112 | 5 | 3 | 10 |  | 252 |  | 1970 |
| 16 | 7 sets 10 h .6 m | 49 4 <br> 48 5 | morn | 646 | 41 | 11 | 03 | 349 |  | 192122 |
| 17 | D \％gt． | 48 <br> 47 | $\begin{array}{rrr}0 \\ 0 & 40\end{array}$ | 646 753 | 40 | 12 | 041 | 456 |  | $1934 \%$ |
| 18 | 2 石 D | 47 | 040 | 753 <br> 9 <br> 10 | 40 | 12 | 114 | 613 |  | 194720 |
| 19 |  | 46 45 | 149 | 1029 | 39 | 14 | 147 | 732 |  | 20.0 |
| 20 | 4 H 6 S Spic | － 45 | 149 | 1029 1138 | 39 | 14 | 220 | 841 |  | 201217 |
| 21 | $59 \%$ ¢ 60 h. |  | 1225 259 | 138 029 |  | 16 | 254 | 932 |  | 20248 |
|  | 6 ¢口 | 84 | 9 259 <br> 0 337 | 113 |  | 17 | 330 | 1016 |  | 203614 |
| 23 | 7 \％ | 4310 | 11 sets | 1154 |  |  | Sets | 1057 |  | 24727 |
| 2 | $134 \delta^{3} 9$ |  | $1{ }^{1}$ sets | 233 | 35 |  |  | 1136 |  | 2058 II |
| 25 | $2{ }^{2}$ great． ． |  | 274 | 235 | 35 |  | $845$ | 012 |  | 21.923 |
| 26 | 3 Orises 2h． |  | 925 | 5345 |  |  | 930 | 048 |  | 21190 |
|  |  |  | 4 10.6 | 6.420 | 3 |  | 1010 | 123 |  | 212917 |
| 28 | 5 \％sets 1 |  | 510.42 |  |  |  | 1046 | 20 |  | 2138.29 |
|  | 6.4 rises 4 h .6 m ． |  | 51114 | 4. 4 4 4 |  |  | 1117 |  |  | 21478 |
|  | 7 Ant．s． 11 h .46. | ． 3915 | 11145 | ＋ 616 | ， |  | 11143 |  |  | 215623 |

and sting of death，through Jesus Christ our Lord．－Sir Matthew Hale．

He is a true Christian，who when injured，is more grieved for the sin of the offender，than for the wrong that is done to himself．

## MGON'S PHASES.



Integrity.-Integrity is a great and commendable virtue. A man of integrity is a true man, a bold man, and a steady man; he is to be trusted and relied upon. No bribes catt corrupt him, no fear daunt lim; his word is slow in coming, but sure. He shines brightest in the fire, and his friend hears of him most, when he most needs him. His courage grows with danger, and conquers opposition by constancy; as he cannot be flattered or frightened into that he dislikes, so he bates flattery and temporizing in others. He runs

MoON'S PHASES.


New Moon,


| 1 | D | Venus sets 6 | 12 |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\&$ | 2 | 24 | $\delta$ | $D$, | 8 |
| 8 | $\circ$ | 9 |  |  |  |

3 3 b sets 11 h .9 m 44 sets 10 h .25 m
5 D in A pores. $66 \mathrm{~h}_{2}$ ris. 5 h .35 m . 7 7 Ori. so. 6 h .44 m \&D Sir, S. 7h. 32 m .
2 Procy. S. 8 h. 21
10 3 Castor S. 8 h. 10
11 4 9 rises 5 h .17
1257 *s set 11 h 42
1564 sets 9 h .54 m .
14.7 Ald. sets 1133 .
$15 \mathrm{D} \$$ sets 11 h .1 m .
162 h rises 5 h .3 m .
173 우 8
184 주 ${ }^{\circ}$ 푱
195 Sir. S. 6 h .49 m .
206 D in perigee.
217 ? Stationary.
22. $\mathbf{D}$ ₹ in perhelion.

23 2? rises 4 h .24 m .
2435 d $D$. Din per.
254 Proc. S. 7 h. 18
265 scts 10 h .54 m 5
276 i sets 9 b .13 m .
28
29
30
31
with truth, and not with the times-with right, and not with might.-William Penn's advice to his Children.

By taking revenge, a man is but even with his enemy; but in passing it over he is superior.-Lord Bacon.

## Times of holding the Quartwrix Meetustos of Priends of Philadelphia Yearly Meeting.

Philadelphia Quarterly Meeting is held at the meeting-house on Mulberry Street, Philadelphia, on the first Second-day in the $2 \mathrm{nd}, 5 \mathrm{th}, 8 \mathrm{~h}$, and 11th months, at 10 o'clock.
Abington Quarterly Meeting is held nt Germantown, on the Fith-day following the first Second-day in the 2nd, 5th, 8th, and 11th months, at 10 o'clock.
Bucks Quarterly Meeting is held the last Fith-dny in the 2nd, 5 th, 8 th, and 11th months;-in the 2nd month at Buckingham; in the 5th and 11th at Falsington, and in the 8th at Middletown.

Concord Quarterly Meeting is held at Concord, on the Thirdday following the third Second-day in the 2nd, 5 th, 8 th, and 11 th months, at 11, A. M.

Caln Quarterly Meeting is held at East Caln, 3 miles west of Downingtown, on the Sixth-day following the second Secoudday in the 2nd, 5 th, 8 th, and 11th months, nt 11, A. M.

Western Quarterly Meeting is held at London Grove, old bouse, on the Sixth-day after the third Second-day in the 2nd, 5 th, 8 th, and 11th months, at 11, A. M.

Barlington Quarterly Meeting is held at Burlington, on the Third-day after the last Second-day in the 2nd, 5th, 8th, and 11 th months, at $10, \mathrm{~A} . \mathrm{M}$.
Haddonfield Quarterly Meeting is held at Haddonfield; on the Fifth-day following the second Second-day in the 3rd-at Evesham, in the 6th-at Upper Evesham in the 0th-and at Chester, in the 12 th month, at $100^{\prime}$ clock.

Salem Quarterly Meeting is held on the Fifth-day following the second Second-lay in the 2nd, 54,8 Bth, and 11th months-at Salem in the 5th and 11th months-at Woodbury in the 2nd and 8th months ; at 10 oclock, in the 5th and 8th months; at 11 o'clock, in the 2nd and 11th months.

Shrewsbury and Rahway Quarterly Meeting is held the Fifthday after the second First-day in the 2nd, 5th, 8th, and 11th months-at Plainfield, in the 2nd and 8th, and at Shrewsbury in the 5th and 11th months-all at 11, A. M., except that at Plainfield, in the 8th month, which is at $10, \mathrm{~A}, ~ \mathrm{M}$.

When thy neighbour has taken displeasure at thy conduct, or when he has offended thee, thou oughtest to seek him with meekness, to speak kindly to him, with an heart filled with compassion, and of love ; thus, according to the apostle's advice: " to overcome evil with good." And if it should be thy duty to lay his failings before him, be very careful not to make five wounds in endeavouring to cure one.

## MOON'S PHASES.




A cerfain consequence of knowing a man's self truly, is a humble opinion of himself, and not being exalted with the commendations of other people.

He is the wise man who, though not skilled in science, knows how to govern his passions and affections.

MOONS PHASES.


|  |  | OMio and Indianat |  |  |  | Aoston, N. Bngland, N. York State and Mfichigak. |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\bar{B}$ | RBMA |  |  |  |  | Sun 5 |  |  | Himh |  |  |
|  | rem |  |  | sets. ${ }^{\text {W }}$ |  | rises | eta, | 8015. | Bost'n |  | Souti. |
|  |  |  |  | ${ }_{7} 14$ |  | $\bar{m}$ $715$ |  |  | $\text { 4. } \mathrm{M}$ | $1.1$ | $\frac{M}{21} \frac{M}{52}$ |
|  | 2 |  | 31 | 826 | 428 | 16 | 23 | 819 | 134 |  | $22 \quad 125$ |
|  | ${ }_{2}$ |  |  |  | 512 | 17 | 23 | 931 | 218 |  |  |
| 45 | \% south 6h. 29. | 11 | 30 | 1046 | 557 | 18 | 23 | 1042 | 3 |  | 24 |
|  | 4 south 9h. 17. | 12 | 30 | 11.53 | 635 | 19 | 22 | 1152 | 4. |  |  |
|  | 6 d | 13 | 30 | norn | 8 | 20 | 22 | nor | 5 |  |  |
| 5 | 2 sets 9 h . | 14 | 0 | 058 | 916 | 22 | 22 | 0.58 | 622 |  |  |
|  | Arie. S. 8 h . | 15 | 30 | 2.1 | 1030 | 25 | 22 | 23 | 736 |  |  |
|  | 4 6 D | 16 | 30 | 3 | 1135 | 24 | 22 | 39 | 841 |  | 22528 |
| 10 | 8 gr | 17 | 30 | 4 | morn | 25 | 22 | 410 | 931 |  | 225814 |
|  |  | 18 | 30 | 56 | 025 | 26 | 22 | 511 | 1014 |  | 28.326 |
| 12. |  | 19 | 31 | 61 | 1.8 | 27 | 23 | 68 | 1058 |  | 2889 |
|  | \% | 20 | 81 | Rises | 147 | 27 | 23 | Rises | 1130 |  | , |
|  | 5 sets 8h. 3 | 20 | 31 | 542 | 224 | 28 | 23 | 533 | morn |  |  |
|  | \% south 6h | 1 | 31 | 635 | 259 | 29 | 23 | 629 | 0 |  | - |
|  | D in apogee | 21 | 32 | 732 | 332 | 29 | 24 | 726 | 038 |  | 127 |
|  | 2/ south 8h. 11 | 22 | 32 | 828 | 46 | 30 | 24 | 823 | 112 |  | 3289 |
| 18.5 | 5 \% stationary | 23 | 32 | 925 | 440 | 31 | 24 | 922 | 146 |  | 520 |
|  | 696 | 23 | 32 | 1022 | 514 | 31 | 24 | 1019 | 220 |  |  |
|  | Kgivelong. E | 23 | 35 | 1119 | 551 | 31 | 25 | 1118 | 257 |  | 7 |
| B |  | 24 | 38 | morn | 636 | 31 | 26 | morn | 3.42 |  | 37 |
|  | 2Ald. S.10h21 | 24 | 34 | 016 | 731 | 32 | 27 | 010 | 437 |  | 12327 |
|  | 3 z sets | 25 | 34 | 121 | 840 | 32 | 27 | 122 | 546 |  |  |
|  | 48 in pe | 25 | 35 | 224 | 101 | 1 - 23 | 27 | 226 | 77 |  |  |
|  | [8h. 28 m | 26 | 36 | 330 | 1115 | , | 2 | 333 | 822 |  | 2 |
|  | $6 / 4$ sta | 26 | 36 | 436 | 019 |  | 28 | 442 | 925 |  | 12322 |
|  | 7 x in infe. |  | 37 | 54 | 113 | 3 | 29 | 547 | 1019 |  | 19 |
|  | E \% D . $6.5 .5 h$ | - 26 | 38 | Sets | ${ }^{2} 4$ |  | 30 | Sets | 118 |  | 22316 |
|  | 2 Din veri. [47m. | . 27 |  | 555 | 547 |  |  | 554 | 1153 |  | 22315 |
|  | 3.4 south 7 h .19 m | - 27 |  | 711 | 330 |  |  | 710 | 036 |  | 3239 |
|  | ¢ 3 |  |  |  |  |  |  |  |  |  |  |

In the ordering of human affairs, it is beautiful to see every man standing contentedly in his lot, and moving in the Divine fear and counsel, in performing the duties assigned him. While the mind is thus occupied, selfishness and self-consequence will disappear, and humility, true benevolence, and enlargement of understanding will be found in the place thereof.
he had believed to be innccessible, appeared altogether vain, and he could not devise any way whereby he might be saved. When morning eame, he arose and walked to and fro, still shut up in darkness and d ress, st ving, with all his might, to collect something, but coul. not, one single sentence. The time for the meeting to begin came, and ho feturnod to the cave, where he found themassembled, and a table with a Bible on it, and a-seat provided for him. Upon sitling down, they all continued, he believed, the space of half an hour in profound silence, when the exerciso and anguish of his sout was as great as wos possible for human nature to bear, without any waywopening to address the people. At length these words came before him; "Verily there is a reward for the Eighteous-Verily there is a God that judgoth in the carth.". With these words he arose, and having delivered them, some other pertinent matter presented, and so on from less to mote, umtil his understanding became opened, gnd his heart enlarged, in a mather wonderful to timself, to treat on subjects, suiting their condition, such as the excellent rewards for the righteous - The just judgments of God awaitingh fie wieked; the necessity of repentance tind amendment of life-the universatity of the Sove of ceod to the chitdren of men. This had such a powerfil effect on the minds of these poor wicked wretches, that they were exceedingly broken into tenderness, weeping to such a degree that the floor was: Wet with their tears? and be no less astonielod at the unbounded coodness, power and lovg of an Alpighly Creator, fin thus interforing fort the saving of both his natural and
 Lorcis toing and warvelous in his eyesp Under on awful sense of the fayouth bis hent theeame flled- winh such thankfil acknowledgments as were bey ond tho power of language to convey.

After the meeting ended, the poor cregtores wert very loving and affectionate, willing to show fim all the kind. ness in their power. The next day they fited put one of their yessels, and carried him whither he wished to go. From that time he became, and continues to be, an eutirely changed man. From being an infidel, he has become a sincere believer in the efficacy and power of the unchangeable Pruth, as it is in Jesus Christ, the Saviour of the world, He has since settled in the south of France. The Friend from whose lips this uarrative whs taken is still livingi 1844.

## MOON'S PHASES.

|  | Plulaulelphias. |  |  |  | Boston. |  |  |  | Cincinnafi. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | D. | ${ }^{\text {H. }}$. | s. | M. | $\begin{gathered} \hline \mathrm{D} . \\ 1 \end{gathered}$ | $\mathrm{H}_{6}$ | $\begin{aligned} & M_{1} \\ & 15 \end{aligned}$ | M. | n. | H. | $\begin{aligned} & \mathrm{M} . \\ & 22 \end{aligned}$ | M. |
| New Moon, First Quarter, | $\stackrel{1}{8}$ | 6 | 30 | M. | 8 | 6 | 47 | M. | 8 | 5 | 54 | M. |
| Full Moon, | 15 | 4 | 55 | M . | 15 | 5 | 12 | M. | 15 | 4 | 19 | M. |
| Last Quarter, | 23 | 3 | 13 | M. | 23 | 3 | 30 |  | 23 | 2 | 47 |  |
| New Moon, | 30 | 6 | 41 | A. | 30 | 6 | 58 | A. | 30 | 6 | 15 |  |


| 블 | REMARKS. $\left.\right\|_{\text {E }} ^{\text {E }}$ | Phila. Penna, N: Jersey, Ohio and Inliana. |  |  |  | Roston, N. Fingland, N: York Siate and Mrehigan. |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  | IIIgh water. Bost'n |  |  |
|  | ¢ scts 7 h .6 m .6 | 15 | 538 | sets | 210 | - | , | Sets | H. m | $\left\lvert\, \begin{array}{l\|} \mathrm{M} \cdot \\ 10 \end{array}\right.$ |  |
| , | \% S. 81.57 mm | 1 | 5 | 615 | 248 | - | 36 | 69 | 1152 | 11 | 34325 |
| 369 |  | 8 | 35 | 653 | 323 | 4 | 34 | 646 | 0.29 | 11 | 46 m |
| 4.7 | Fomal. S. |  | 34 | 739 | 42 | 5 | 32 | 731 | 18 | 11 | 4 |
| E | 24so. 11, 32, |  | 32 | 829 | 446 | 6 | 31 | 820 | 152 | 12 | 4 |
|  |  |  | 30 | 926 | 5 | 7 | 29 | 918 | 240 | 12 | 51520 |
| 73 | h sou | 7 | 29 | 1031 | 632 | 8 | 28 | 1021 | 338 | 12 | 8 |
| 8.4 | D in | 8 | $2 \overline{7}$ | 1137 | 7.42 | 10 | 25 | 1130 | 448 | 2 | 8 |
| 9 | An, sets 7 |  | 26 | no:n | 97 | 11 |  | morn | 613 | 15 | 62 |
| 10 |  | 10 | 24 | 047 | 1024 | 12 | 22 | 0.41 | 730 | 13 | 64716 |
| 11. 7 |  | 11 | 22 | 155 | 1138 | 13 | 20 | 151 | 844 | 13 | $710 x$ |
| 12 F | \% south 8h. 26 | 12 | 21 | ${ }^{5}$ | mo | 14 | 19 | 30 | 936 | 14 | 5 |
| 13.2 | fsets 7 h .4 m . | 15 | 19 | 47 | 030 | 15 | 17 | 45 | 10 | 14 | 9 |
|  |  | 14 | - 18 | 517 | 112 | 16 | 16 | 518 | 10 |  | $p$ |
| 15.4 | $h_{2}$ south 7 | 15 | 17 | Rises | 151 | 18 | 14 | Rises | 1134 |  |  |
| 5 | $2{ }^{2}$ ó D | 16 | 1 | 60 | 228 | 19 | 12 | 554 | norn |  | 9 |
| 17. 6 |  | 17 | 14 | 643 | 3. | 20 | 11 | 637 |  |  | 92322 |
| 8 | 24 | . 18 | 12 | 727 | 340 | 21 |  | 717 | 046 |  | 945 |
| 19 E |  | 9 | 11 | 814 | 416 | , |  | 86 | 122 |  | 10 |
| 20.2 | § south 8 h .5 m | - 21 |  | 96 | 455 |  |  | 85 | 2 |  | 10 |
| 21. | 3 ¢ in Aphe. Ar. S | S 22 |  | 959 | 5 | 525 |  | 951 | 2 |  |  |
|  | 4 Jinapo. [11 42 | 2 |  | 1055 | 622 | 26 |  | 1048 | 328 |  |  |
|  | 5 Arc. ri. 7 h. 26 | 24 |  | 1152 | 713 | 3.27 |  | 21146 | 419 |  | 11328 |
|  | 67 set | . 25 |  | 4 moril | 819 | 29 |  | 0 morn | 5 |  |  |
| 257 |  | 26 |  | 049 | 92 | $3{ }^{3}$ | 4 | 0 |  |  |  |
| 26 E | ¢ | 7 |  | 1147 | 1035 | 5 | 1.57 | 1 | 741 |  |  |
| , |  | 28 |  | 9 248 | 1136 | 638 | 2 | 2 |  |  |  |
| 28 | $3 \mathrm{~h}_{2}$ south 6h. | 29 | 458 | 3350 | ) 024 | 4.34 | 45 | 4350 |  |  |  |
|  | 42 | 0 | 0.57 | $7{ }^{4} 53$ | 1 |  | 55 | 454 | 410 |  |  |
|  | 5 (9) eclip. invis. | . | 256 | 6 Sets | 147 |  | 65 | S | \% |  |  |
| 31 | 612 south 11h. 29 |  |  | 532 |  |  | 75 | 50) 525 | 51134 |  | 0141 |

gion ; and by their lewdness, they teach vice, and are apt to infect the minds of men, and dispose them to lewd and dissolute practices."

MOON'S PHASES.



Pride, pleasure, and unrighteous gain, are baits that have caught many; all which, with many other things, we must deny, and turn from, if we will be followers of Christ in a righteous life: and by such denials we shall find the root of iniquity wither, and grace grow ; sinful motions will diminish, and heavenly desires increase; the small seed will become the tallest of herbs; and the lump come to be one in nature with the leaven.

## MOON'S PHASES.

|  | Philadelphia. |  |  |  | Boston. |  |  |  | Cincinnati. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Moon, | $\begin{gathered} \hline \mathbf{n} . \\ 3 \end{gathered}$ | $\begin{gathered} \mathrm{H} . \\ 2 \end{gathered}$ | $\begin{aligned} & \mathrm{N} . \\ & 24 \end{aligned}$ | M. | $\begin{aligned} & \hline \mathrm{D} . \\ & 3 \end{aligned}$ | $\begin{aligned} & \mathbf{H} . \\ & 2 \end{aligned}$ | $\begin{aligned} & \mathrm{M} \\ & 41 \end{aligned}$ | M. | $\begin{gathered} 18 \\ 3 \end{gathered}$ | n. $1$ | $\stackrel{\mathrm{M}}{48}$ | M. |
| First Quarter, | 10 | 5 | 40 | A. | 10 | 5 | 57 | A. | 10 | 5 |  | A. |
| Full Moon, | 17 | 8 | 17 | M. | 17 | 8 | 34 | M. | 17 | 7 | 41 | M. |
| Last Quarter, | 24 | 1 | 26 | A. | 24 | 1 | 43 | A. | 24 | 0 | 50 |  |


any good; or Christ's righteousness will profit us nothing. It was after this manner that he was made, to the primitive Christians, righteousness, sanctification, justification and redemption; and if ever you will have the comfort, kernel and marrow of the Christian religion, thus you must come to learn and obtain it.

MOON'S PHASES.

|  | Philatelphia. |  |  |  | Borton. |  |  |  | Cincinnati. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Moon, | $\begin{aligned} & \hline \mathrm{D} \\ & 1 \end{aligned}$ |  | M 34 | A. | $\begin{gathered} \hline \mathrm{D} . \\ 1 \end{gathered}$ | H. |  | A. | 18. | H. |  | A. |
| First Quarter, | 9 | 0 | 23 | M. | 9 | 0 | 40 | M. | 8 | 11 | 47 | A. |
| Fuil Moon, | 15 | 5 | 13 | A. | 15 | 5 | 30 | A. | 15 | 4 | 37 | A. |
| Last Quaiter, | 23 | 7 | 25 | M. | 23 | 7 | 42 | M. | 23 | 6 | 49 | M. |



Archbishor Tiluotson, on the subject of plays, says, "They are intolerable, and not fit to be permitted in a civilized, much less a Christian nation. They do most notoriously minister to vice and infidelity. By their profaneness, they are apt to instil bad principles into the minds of men, and to lessen that awe and reverence which all men ought to have of the Almighty and reli-

## MOON'S PHASES.

|  | Philadelphia. |  | Boston. |  |  | Cincinnati. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Moon, | D. | $\begin{array}{lll} \mathrm{n}_{\cdot} & \mathrm{M} . \\ 8 & \mathrm{~A} . \end{array}$ | ${ }_{4}$ | $\begin{array}{cc} \mathrm{H}_{6} & \mathrm{M} \\ 8 . & 24 \end{array}$ | A. | D. | $\begin{aligned} & \mathrm{H}_{7} \end{aligned}$ | $\frac{x_{i}}{31}$ | A. |
| First Quarter, | 12 | $10 \quad 42 \mathrm{~A}$. | 12 | $10 \quad 59$ | A. | 12 | 10 | 6 | A. |
| Full Moon, | 19 | $6 \quad 17$ A. | 19 | 634 | A. | 19 |  |  |  |
| Last Quarter, | 26 | 926 M . | 26 | 943 | M. | 26 |  |  |  |


|  |  | Paila. Ponna. N. Jersey, OMio and Tadiang. |  |  |  | Boaton, N. England, N: York State and Nichigan. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | sun 1 |  |  |  | sun |  |  |  | $\overline{9(9)}$ |
|  |  | cs | sets\% | risea. | Pl | Ises | ets. | 5. risen. | Bost'n | mt |
|  |  | 438 |  |  | $\mid 1155$ |  |  |  | $91$ | $2$ |
| $22$ |  | 37 | 18 | 254 | 042 | 30 | 25 | 25.247 | 948 | 22214 |
|  | \% rises | 37 | 18 | 336 | 122 | 30 | 26 | 2 326 | 1028 | 2222228 |
|  | gre. | 37 | 19 | Sets | 158 | 29 | 27 | $7{ }^{2}$ Sets | 11 | 222 |
|  |  | 37 | 2 | 80 | 237 | 29 | 27 | 78 | 114 | 22236 |
|  |  | 36 | 20 | 839 | 3. | 29 |  | 84 | 01 | 22242 |
|  |  | 36 | 21 | 92 | 35 |  |  | 992 | 057 |  |
|  | 2 -rises 2 h . 14 m | 36 | 21 | 9 | 41 | 28 |  | 9 | 122 | 1 |
|  |  | S6 | 22 | 1028 | 45 |  |  | 30 102 | 1 | 12 |
| 10 |  | 36 | 23 | 1057 | 523 |  |  | 0105 | 25 | 12 |
| 11 |  | 36 | 2 S | 1126 | 68 | 28 |  | 11125 | 31 | 12 |
| 125 |  | 35 | 24 | 1155 | 658 | 28 |  | 11158 | 4. | 028 |
| 13 |  | 35 | 24 | porn | 82 | 27 |  | 22 morn | 5 | 028 |
| 14 |  | 35 | 25 | 026 | 916 | 27 | 32 | 22022 | 622 | 1. 23 |
| 15. |  | 35 | 25 | 058 | 1035 | , |  | 055 | 74 | 02 |
|  |  |  | 25 | 135 | 11.46 |  |  | 139 | 85 | 02 |
| 17 | Ant. S, 10h |  |  | 219 |  | 28 |  | 331211 | 95 | 12 |
| 18 |  | 36 | 26 | 310 | 04 | 28 |  | 3432 | 104 |  |
|  |  | 36 | 26 | Ris | 137 | 28 |  | 34. Rises | 11 |  |
| 206 |  | 36 | 26 | 812 | 224 | 28 |  | 351 |  |  |
| 217 | 7 (9) en. ${ }^{\text {cos }}$ | 36 | 27 | 959 |  | 28 |  | $5{ }^{9}$ | 01 | 123 |
| E | 12 d [com. |  | 27 | 939 | 352 | 29 |  | 35.940 | 05 | 223 |
|  |  |  | 27 | 1015 | 434 | 29 |  | 351015 | 140 | 22327 |
|  |  | 37 | 27 | 1048 | 516 | 29 |  | 351047 | 222 |  |
| 25. |  | 38 | 27 | 1120 | 60 | 30 |  | 351117 |  |  |
| 265 |  | 38 | 27 | 11 | 652 | 30 |  | 3511 | 35 | 2 |
| 276 |  |  |  |  | 756 | , |  | 35 mor, | 4. | 3 |
|  | 724 rises 1 h .6 m . |  |  | 023 | 9 | 31 |  | 35017 | 612 | -323 17 |
|  |  | 89 | 27 | 0 | 10.20 | 31 |  | 35048 | 72 | 3231418 |
|  | perihali | - 39 |  |  | 1124 |  |  | 35125 |  |  |

we lie, and do not the truth." That is, if we go on in a sinful way, are captivated by our carnal affections, and are not converted to God, we walk in darkness, and cannot possibly, in that state, have any fellowship with God. Christ clothes them with his righteousness, that receive his grace in their hearts, and deny themselves, and take up his cross daily, and follow him. Christ's

## MOON'S PHASES.

|  | Phladelphia. |  |  |  | Boston. |  |  |  | Cincinnall. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Moon, | $\frac{3}{4}$ | 11 | $\frac{x}{29}$ | NT. | $\overline{D_{0}}$ | H. | ${ }^{\text {M }}$ ¢ ${ }_{\text {c }}$ |  | w. | H. |  |  |
| First Quarter, | 12 | 9 | 21 | MK. | 12 | 11 | ${ }^{46}$ |  | 12 | 10 | 53 | M. |
| Full Moon, | 19 | 1 | 2 | M. | 19 | 1 |  |  | 12 | 8 | ${ }^{45}$ |  |
| Last Quarter, | 25 | 10 | 19 | A. | 25 | 10 |  |  | ${ }_{25}^{19}$ | 9 | - 46 |  |


righteousness makes men inwardly holy; of holy minds, wills and practices. It is not the less Christ's, because we have it ; for it is ours, not by nature, but by faith and adoption. It is the gift -of God. But still, though not ours, as of or from ourselves, (for in that sense it is Christ's, for it is of and from him, ) yet it is ours, and must be ours in possession, efficacy and enjoyment, to do us

MOON'S PHASES.



Permanent and unbroken rest is not to be expected on the road, but at the end of the journey of life.

Men often submit to improprieties, for want of firmness to with. stand and expose them ; and so pass for parties, to what they secretly disapprove.

The desire to be thought humble, is a sure evidence of the want of humility.

## FIFTH MONTH.

## MOON'S PHASES.




Christ's Righteousness.-Have a.care how you presume to rely upon such a notion, as that you are in Christ, whilst in your old fallen nature. For what communion hath light with darkness, or Christ with Belial? Hear what the beloved disciple tells you ; "If we say we have fellowship with God, and walk in darkness,

## SECOND MONTH.

MOONIS PMASES.

|  | Philadelphia. | Borton. | Cincinnat. |
| :---: | :---: | :---: | :---: |
| New Moon. | $\mathrm{D.}_{.}$ $\mathrm{H}_{-}$ $\mathrm{M}_{-}$  <br> 6 1 34 A. | D. II. M.  <br> 6 1 51 A. | $\begin{array}{cccc} \hline \mathrm{D}, & \mathrm{H} & \mathrm{M} \\ 6 & 0 & 58 & \mathrm{~A} . \end{array}$ |
| First Quarter, | $13,11 \quad 59 \quad \mathrm{~A} \text {. }$ | $\begin{array}{llll} 14 & 0 & 16 & \mathrm{M} . \end{array}$ | $\begin{array}{llll}6 & 11 & 23 & \text { A. }\end{array}$ |
| Full Moon, | $22 \quad 1 \quad 45 \mathrm{M}$. | 22.29 .10 | $6 \quad 189$. |



| Phila. Peana. N. Jersey, Ohio and Incliana. |  |  |  | Boston, N. |  |  |  | O |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Sun | Moon | [118 | sin | stin |  | 11 mb |  |  |  |
|  | set | rises. | Phila. | rigea | pets | rises. | Wast'n |  |  |  |
|  |  |  |  | \#. $\times 1$ | \% $\times$ |  | W | M. |  |  |
| 14 | 14 | 211 | 853 | 719 |  | 215 | 559 | 141 |  |  |
| 12 | 16 | 314 | 1028 | 17 | 11 | 320 | 734 | 14 | 164 |  |
| 11 | 17 | 415 | 1147 | 16 | 12 | 420 | 853 | 14 | 1624 |  |
| 10 | 18 |  | 046 | 15 | 13 | 512 | 952 | 14 | 5 |  |
| 9 | 15 | $5 \quad 54$ | 134 | 14 | 15 | 5.57 | 1040 | 14 | 15 |  |
|  | 20 | Sets | 216 | 13 | 16 | Sets | 1128 | 14 | 15 |  |
|  | 22 | 651 | 254 | 12 | 17 | 650 | 00 | 14 | 151 |  |
|  | 23 | 81 | 330 | 10 | 10 | 80 | 036 | 14 | 1452 |  |
|  | 24 | 97 | 405 |  | 20 | 96 | 18 | 15 | 1433 |  |
|  | 26 | 1011 | 441 |  | 21 | 1012 | 147 | 15 | 1413 |  |
|  | 27 | 1111 | 518 | 7 | 22 | 1114 | 224 | 151 | 1358 |  |
| 1 | 28 | morn | 60 | 5 | 24 | morn | 36 | 15 | 13 |  |
| 0 | 29 | 011 | 651 |  | 25 | 014 | 357 | 15 | 1318 |  |
| 59 | 30 | 17 | 756 |  | 26 | 112 | 52 | 15 | 1253 |  |
| 57 | 32 | 21 | 910 |  | 27 | 26 | 617 | 14 | 1233 |  |
| 56 | 33 | 252 | 1026 | 0 | 29 | 257 | 731 | 14 | 12 |  |
| 55 | 34 | 337 | 1131 | 658 | 30 | 342 | 837 | 14 | 1151 |  |
| 55 | 35 | 417 | norn | 57 | 31 | 422 | 927 | 14 | 1130 |  |
| 52 | 36 | 456 | 021 | 55 | 35 | 459 | 10 | 14 | 11 |  |
| 51 | 37 | 529 | 13 | 54 | 84 | 533 | 1046 | 14 | 1047 |  |
| 49 | 39 | Rises | 140 | 53 | 35 | Rises | 1121 | 14 | 1025 |  |
| 48 | 40 | 629 | 215 | 51 | 36 | 626 | 1155 | 14 | 10 |  |
| 46 | 41 | 734 | 249 | 49 | 38 | 733 | morn | 14 | 941 |  |
| 45 | 42 | 839 | 325 | 48 | 39 | 841 | 029 | 15 | 919 |  |
| 44 | 43 | 946 | 357 | 47 | 40 | 948 | 13 | 15 | 957 |  |
| 42 | 44 | 1055 | 436 | 45 | 41 | 1058 | 142 | 13 | 8 |  |
| 41 | 45 | morn | 518 | 44 | 42 | morn | 224 | 18 | 812 |  |
| 39 | 46 | 01 | 610 | 42 | 43 | 0 | 31 |  | 74 |  |

Sibear not at all.

## "Fly every onth."

"How then shall we be believed ?"
"By our word, and a life which makes our words worthy of credit." These are the words of Gregory Nazaienzen, a Christian writer of the fourth century.

Cleanliness becometh a holy people,-John Woolman.

## MOON'S PHASES.



|  | PNo |  | ndiam | Jersey, ппа. | $\begin{aligned} & \text { Bos } \\ & \text { Yor } \end{aligned}$ |  | and Mi | $\begin{gathered} 6, N \\ \hline \text { gam. } \end{gathered}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Sun | Moon | $\left\lvert\, \begin{aligned} & \text { High } \\ & \text { water } \end{aligned}\right.$ | Sun |  | Moon | $\begin{aligned} & \text { Hient } \\ & \text { what } \end{aligned}$ |  | Seclit |  |
|  | rimes | sets. | rises. | whira. | rises | sels. | tines. | Bost'n |  | 304 |  |
|  | $\begin{aligned} & 18 \\ & 6.37 \end{aligned}$ | 11.48 | $14$ | $\left\|\begin{array}{rr} x \\ 7 & 15 \\ \hline \end{array}\right\|$ | w. M. <br> 639 <br> 8. | 546 | $\sqrt{4 .}$ | $\left\lvert\, \begin{aligned} & 8 . \\ & 421 \end{aligned}\right.$ |  | $29$ | $t$ |
| 2 E ¢ ${ }^{\text {c }}$ r. 5 h. 48 m . | - 36 | 49 | 27 | 842 | 38 | 47 | 212 | 548 |  | 273 |  |
| 32 in perige. | 35 | 50 | 32 | 1022 | 37 | 48 | 36 | 723 |  | 2640 |  |
| 4 3 4 sets 7 h .54 m . | 35 | 51 | 347 | 1134 | 35 | 49 | 351 | 831 |  | 51 |  |
| 5 4 $\mathrm{h}_{2}$ ¢ D | 31 | 52 | 429 | 030 | 38 | 50 | 432 | 936 |  | 2554 |  |
| 6.5 | 30 | 53 | 57 | 115 | 32 | 51 | 59 | 1021 |  | 1531 |  |
| 7 6 \% rises 2 h .21 m | 28 | 54 | Sets | 154 | 30 | 52 | Sets | 11.0 |  | 157 |  |
| 877 * set 7 h .38 | 27 | 55 | 647 | 231 | 28 | 54 | 646 | 1137 |  | 1444 |  |
| 9 E 22 d | 25 | 56 | 752 | 3 4 <br> 3  | 26 | 55 | 754 | 06 |  | 420 |  |
| 10 2 $q$ in aphelion. | 24 | 57 | 856 | 339 | 25 | 56 | 0 | 1 |  |  |  |
| 11.3 Reg, S. 10h. 32 | 22 | 58 | 957 | 413 | 23 | 57 | 10 | 119 156 |  |  | 5 |
| 12.4 ¢ rises 5 h. 48 | 21 | 59 | 1054 | 450 501 | 22 | 58 | 1058 | 156 237 |  | 0310 <br> 0 |  |
| 13.5 | 19 | 0 | 1151 | 531 | 20 | 59 | 1156 | 237 |  | 0 9 9 298 |  |
| 14.6 | 17 | 2 | morn | 618 | 19 | 0 | morn | 324. |  | 9 922 |  |
| 15.7 D in apoge | 16 | 3 | 048 | 710 | 17 | $\stackrel{1}{2}$ | 048 | 416 528 |  | 159 +35 |  |
| 16 E | 14 | 4 | 129 | 822 | 15 | 2 | 134 | 528 |  | 9135 |  |
| 172 | 12 | 5 | 213 | 3.937 | 12 | 4 | 217 | 643 |  | 8116 | 15 |
| 18 3 \% rises 2 h .9 m . | 11 | 6 | 251 | 11046 | 11 | 5 | 255 | 752 |  | 8048 | 27 |
| 19 4 Proc. S. 7h. 36 | 9 | 7 | 326 | 1145 | 9 |  | 329 | 851 |  | 8024 |  |
| 20 5) ${ }^{\text {(1)nt. } \Upsilon \text { spring }}$ | - 8 | 8 | 359 | 9 morn |  | 7 | 40 | 958 |  | 8 N. | ${ }^{21}$ |
| 21.6 [comm. | - 6 | 9 | 430 | - 032 | 6 | 8 | 429 | 1018 |  | 71023 |  |
| 22.7 ¢ in sup. $\delta$ (9) |  | 10 | 50 | 0112 |  |  | 5.0 | 1055 |  | 7047 | 17 |
| 23 E | 3 | 11 | Rises | 149 |  | 10 | Rise | 1131 |  | 7 111 <br> 6134  |  |
| 24.2 | 61 | 12 | 7.34 | 225 |  | 12 | 73.5 | morn |  | 6111 6158 | 5 |
| 25 3Reg. S, 9h. 40 m | 519 | 13 | 843 | 3 | 559 | 13 | 846 | 08 |  | 6 6 6 2 |  |
| 264 | 58 | 13 | 951 | $1-341$ | 557 | 14 | 955 | 047 |  | 6221 |  |
| 275 | 57 | 14 | 1058 | 8422 | 56 | 15 | 11.3 | 128 |  | 5245 | 7 |
| 28.5 in perigee. | 55 | 15 | morn | - 5 | 54 | 16 | norn | 213 |  | 528 |  |
| 297 | 53 | 16 | 0 | $0 \quad 6 \quad 1$ | 52 | 17 | 0 1 | 37 |  | 53.32 |  |
| 30.1 | 52 | 17 | 057 | 776 | 51 | 18 | 13 | 412 |  | 4355 |  |
| 31.24 sets 6 h .40 m | 50 | 18 | 145 | 5 828 | - 49 | 19 | 149 | 53 |  | 4418 |  |

8. Thê benevolence of an humble mind may be compared to a rivulet in a meadow, which, though it glides along quietly and unseen, refreshes and fertilizes the soil, leaving it to display the benefit received, by its increased verdure and fruitfulness.

## Times of holding the Quartwhix Meftings of Fuipnds of Philadelphia Yearly Meeting.

Philadelphia Quarterly Meeting is held at the mecting-house on Mulberry Streel, Philadelphia, on the first Second-day in the 2nd, 5th, 8th, and 11 th months, at 10 oclock.

Abington Quarterly Meeting is held at Germantown, on the Fifth-day following the first Second-day in the 2nd, 5th, 8 th, and 11th months, at 10 o'clock.

Bucks Quarterly Meeting is held the last Fifth-day in the 2nd, 5 th, 8th, and 11th months;--in the 2nd month at Buckingham; in the 5th and 11th at Falsington, and in the 8th at Middletown.

Concord Quarterly Meeting is held at Concord, on the Thirdday following the third Second-day in the 2nd; 5th, 8th, and 11th months, at 11, A. M.

Cain Quarterly Meeting is held at Fast Caln, 3 miles west of Downingtown, on the Sixth-day following the second Secondday in the 2nd; 5th, 8th, and 11th months, at 11, A. M.
Western Quarterly Mfeeting is held at London Grove, old house, on the Sixth-day after the third Second-day in the 2nd, 5 th, 8th, and 11th months, at 11, A. M.

Burlington Quarterly Meeting is held at Burlington, on the Third-day after the last Second-day in the 2nd, 5th, 8th, and 11th months, at $10, \mathrm{~A} . \mathrm{M}$.

Haddonfield Quarterly Meeting is field at Haddonfield, on the Fith-day following the second Second-day in the 3rd-at Evesham, in the 6th-at Upper Bvesham, in the 9th-and at Chester, in the 12th month, at 10 oclock.

Salem Quarterly Meeting is held on the Fifth-day following the second Second-day in the 2nd, 5th, 8th, and 11th months-at Salem in the 5th and 11th months-at Woodbury in the 2nd and Bth months; at 10 oclock, in the 5th and 8th months; at 11 o'clock, in the 2nd and 11th months.

Shrewshury and Rahway Quarterly Meeting is held the Fifthday after the second First-day in the 2nd, 5ih, 8th, and 11th months-at Plainfield, in the 2nd and 8th, and at Shrewsbury in the 5th and 11th months-all at 11, A. M., except that at Plainfield, in the 8 th month, which is at $10, \mathrm{~A} . \mathrm{M}$.

## _ VIRGINFA YEARLY MEETING.

The number of members of the religious Society of Friends in Virginia, having been very much diminished by the emigration of many to the free States, their. Yearly Meeting has been discontinued, and the members attached to Baltimore Yearly Meeting. Virginia Yearly Meeting was constituted in 1702 , and has existed 142 years.

## MOON'S PIIASES.

|  | Philapleppia. | Botion. |  |  | Cincinnati. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Last Quarter, |  | $\frac{b_{1}}{1}$ | $\begin{array}{ll} \hline \mathrm{H}_{\cdot} & \mathrm{M}_{\mathbf{\prime}} \\ 10 & 37 \end{array}$ | m. | ${ }^{1}$ | $\begin{aligned} & \text { य. }_{9} \end{aligned}$ |  |  |
| New Moon, | $8 \quad 2 \quad 12 \mathrm{~m}$ | 8 | 229 | M. | - | 1 | 36 | x. |
| First Quarter, | $15.3-50 \mathrm{~m}$. | 15 | 37 | M. | 15 |  | 14 | m. |
| Fall Moon, | 28.9810 m. | 23. |  | m. | 23 |  |  |  |
| Last Quarter, | 55 | 30 | 9.12 | 4. | 30 | 8 | 19 |  |



|  |  |  |  |  |  |  |  | , | ugan: |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | REMARKS. | nem | Sun mete. | Moon risen. | $\left.\begin{array}{\|c} \text { High } \\ \text { wacer, } \\ \text { Philia } \end{array} \right\rvert\,$ | Sun <br> rimen |  | $\left\{\begin{array}{l} \text { Moon } \\ \text { risen. } \end{array}\right.$ | $\begin{aligned} & \text { IIIgh } \\ & \text { water, } \\ & \text { Bost'n } \end{aligned}$ |  | $\begin{aligned} & \text { Sung, } \\ & \text { decli, } \\ & \text { South. } \\ & \text { pl } \end{aligned}$ |
| 14 | \% in 86 | 727 | 441 | morn | ${ }^{\text {a. }}$ ¢ 50 | \#. M | $\|433\|$ | $\begin{aligned} & \mathbf{x}_{4} \\ & \text { mory } \end{aligned}$ | $\begin{aligned} & 4.9 \\ & 356 \end{aligned}$ |  | $2259$ |
| 25 | \% stationary. | 27 | 42 | 058 | 754 | 35 | 34 | 059 | 50 | 5 | 225426 |
| 36 | ¢ r. 4 h .58 m . | 27 | 43 |  | 916 | 35 | 35 | 29 | 622 | 5 | 22.48 m |
| 47 | § \% D. 24s'ts10 | 27 | 44 | 317 | 1044 | 35 | 36 | 321 | 750 | 5 | 22.4124 |
| 5 E | ¢ 6 D [h.49m | 27 | 45 | 42 | 1157 | 35 | 37 | 430 | 9 | 6 | 2235 t |
| 62 | \% in perihelion | 27 | 46 | 532 | 057 | 35 | 38 | 536 | 103 | 6 | 222824 |
| 73 | D in Perigee. | 27 | 47 | 631 | 147 | 35 | 39 | 634 | 1053 | 7 | 22.20 ks |
| 8 | Aldebaren s. 9 | 27 | 47 | Sets | 233 | 35 | 40 | Sets | 1139 | 7 | 221224 |
| 95 | $\underline{\mathbf{2}}$ ¢ D D [8 m. | 27 | 48 | 657 | 315 | 34 | 41 | 651 | 021 | 8 | 223 mm |
| 10 | \% rises 3 h .9 m | 27 | 49 | 8 | 352 | 34 | 42 | 8 | 10 | 8 | 215423 |
| 117 | Siri. S. 11 h. 5 m . | 26 | 51 | 916 | 431 | 34 | 43 | 914 | 1:37 | 8 | 214536 |
| 12 E | 46 | 26 | 52 | 1021 | 58 | 33 | 44 | 1020 | 214 | 9 | 213521 |
| 13 |  | 26 | 52 | 1125 | 550 | 33 | 45 | 1126 | 255 | 9 | $2125 \%$ |
| 14.3 | Pro.s. | 26 | 53 | morn | 637 | 32 | 47 | morn | 343 | 10 | 211417 |
| 15 |  | 25 | 54 | 025 | 732 | 32 | 48 | 027 | 438 | 10 | 21329 |
| 16 | \% greut. r . | 25 | 55 | 125 | 842 | 32 | 49 | 128 | 548 | 10 | 20528 |
| 176 | $2 /$ sets 10 h | 24 | 57 | 223 | 958 | 31 | 50 | 2.27 | 74 | 11 | 30.4023 |
| 187 |  | 24 | 58 | 31 | 115 | 31 | 51 | 323 | 811 | 11 | 2028 II |
| 19 P | D | 23 | 59 | 41 | morn | 30 | 52 | 415 | 97 | 11 | 201517 |
| 202 |  | 23 | 50 | 45 | $0 \cdot 2$ | 29 | 53 | 53 | 954 | 12 | 20229 |
| 21 | h sets 5 h .36 m . | 22 | 2 | 541 | 048 | 29 | 54 | 546 | 1034 | 12 | 1949 क |
| 22 | \% rises 5 h .33 m . | 21 | 3 | 622 | 128 | 28 | 56 | 647 | 1110 | 12 | 193523 |
| 23 |  | 21 |  | 657 | 2.4 | 27 | 57 | 71 | 1145 | 12 | 1921 |
| 24.6 |  | 20 |  | Rises | 239 | 26 | 59 | Itises | morn | 13 | 19.717 |
| 257 | Ald. s. $7 \mathrm{hh}, 57 \mathrm{~m}$ | 19 | 6 | 737 | 311 | 255 | 50 | 734 | 017 | 13 | 1852 如 |
| 26 E |  | 18 | 8 | 840 | 343 | 25. | 51 | 839 | 049 | 13 | 183715 |
| 27.2 |  | 18 | 9 | 943 | 416 | 24 | 2 | 944 | 122 | 13 | 182126 |
| 28 | \% rises 2 h .56 m | 17 | 10 | 1050 | 452 | 23 | 4 | 1050 | 158 | 13 | 18.6 |
| 29 | h 6 (9) | 16 | 11 | 1156 | 534 | 22 | $5$ | 1158 | 240 | 13 | 174922 |
| 30 |  | 15 | 12 | morn | 623 | 21 |  | morn | 229 | 14 | 1733 m |
| 1 |  | 14 | 14 | 12 | 727 | 20 | 8 | 1 | 4331 |  | 171620 |

Official Qualifications.-It has been said, that no one can be a good officer without these five qualifications, viz: clean hands, ability, despatch, patience and impartiality. If no one were appointed to any office who had not these requisites, it is prolable that the number of applicants would be much reduced.

MOON'S PHASES,

|  | Phtadelphia. |  | Boston. |  |  |  | Cmeinnati. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ast Quart | $\begin{gathered} \mathrm{D}_{6} \\ 2 \end{gathered}$ | $\mathrm{H}_{\mathbf{1}} \quad \mathrm{M}$. | n. |  | ${ }_{2 i}$ |  |  | ${ }^{\prime \prime}$ | $\cdots$. |  |
| New Moon, | $\stackrel{2}{9}$ | $\begin{array}{cccc}9 & 7 & \text { A. } \\ 3 & 12 & \text { A. }\end{array}$ | $\stackrel{2}{2}$ | 9 8 |  |  | $\stackrel{2}{9}$ | 8 | 31 |  |
| First Quarter, | 16 | 1021 M . | 16 |  |  |  | 16 | $\stackrel{2}{9}$ | 36 |  |
| Full Mo | 24 | 228 A. | 24 |  |  |  |  |  |  |  |



He that covets can no more be a moral man, than he that steals; since he does so in his mind. Nor can he be one that robs his neighbour of his credit, or that craftily undermines him of his trade or office.

True religion and true humility, are known by uncommon faithfulness in executing common duties.

## JOHN LILBURNE.

The following account exhibits in a striking manner, the difference between the turbulence of the partisan, which marked the early and the principal part of the life of John Lilburne; and the calmness and meekness of his latter days, after he had adopted the peaceable principles of the gospel.

This singular man was born in the County of Durham, in the year 1618. He was a younger son, and being placed out as an apprentice to a clothier in London, when only 12 years of age, he must have acquired a very small stock of learning. The master was a Puritin, and the apprentice had been educated in the same religious sentiments. His deficiency in learning was supplied by a precocity of parts, und forwardness of disposition, which rendered his situation as an apprentice, uneasy to him, and he complained to the Chamberlain of the City, of his master's ill usage. Thus early did he manifest a disposition, impatient of controul, which he carried with him through the greatest part of his life. When his apprenticeship expired, instead of prosecuting his trade, he attached himself to the discontented party of that day, and in the year 1636, was sent to Holland by Dr. Bastwick, who was a prisoner by order of the Star Chamber, in the Gate-house, London. Lilburne's errand was to obtain the printing of some pieces in. Holland, unfayourable- both to the civil and ecclesiastical government of England. For the distribution of these and other similar publications, he was brought before the High Commission Court, and sentenced to be whipped at the cart's tail, from Fleet Prison to the old Patace Yard; there to stand two hours on the pillory; to remain in the Fleet Prison till he conformed to the rules of the court ; to pay a fine of £500 to the King, and to find security for his good behaviour.

He bore his punishment with so much fortitude and spirit, that he acquired the name of "Freeborn John," even from his enemies. He continued a prisoner in the Fleet till 1640, part of the time loaded with double irons on his arms and legs, and confined in one of the worst wards. Here he was suspected of setting the prison on fire, but probably without cause. The fear of him, how ever, produced some amelioration of his situation, by which meaus he found opportunity to publish a piece of his own, entitled "The Christian Man's Trial."
$1844:$
BGHTH MONTH,
MOON'S PHASES.


|  | Paila. Penna. N. Jersey. OMio and Intiana. |  |  |  | Baston, N. Fhgland, N: York State and MFichigan |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| E\| Remarks. | Sun |  |  | $\begin{aligned} & \text { Ingun } \\ & \text { whtor } \end{aligned}$ | sun | Sun | un Noon |  |  |  |
|  |  |  |  |  | rises | mets. | ts. rimes. |  |  | ${ }^{\text {c }}$ |
| 15 |  |  | 8 | 346 |  |  |  |  |  |  |
| $2^{6}$ | 58 |  | 96 | 419 | 58 |  | ${ }_{9}{ }^{5}$ |  |  |  |
| $3{ }^{7} 226$ | 5 |  | 936 | 454 | 54 |  | 931 | ${ }_{1} 127$ |  | 172314 |
|  |  |  | 106 | 532 | 55 |  | 5100 | 235 |  | 17726 |
|  |  |  | 1040 | ${ }_{7} 615$ | 56 |  | 41033 | 318 |  | 16518 |
| $6{ }_{6}$ 3 ${ }^{\text {a }}$ |  |  | 1116 | 76 | 57 |  | 3119 | 49 |  | 163420 |
| Din apogee |  |  | 1158 | 914 | 58 |  | 21150 | 517 |  | 1617 II |
|  |  |  | mor | 929 | 59 |  | 1 morn | 632 |  | 16014 |
|  |  | 55 | 046 | 1044 |  |  | 038 |  |  | 1543 |
| 10 |  | 54 | 146 | 1147 |  | 59 | 59.131 | 850 |  | 1525 \% |
| 111 |  | 53 | 237 | 037 | 3 |  | 57230 | 941 |  | 15720 |
|  |  | 51 | 337 | 118 |  |  | 5631 | 1021 |  | 14.49 |
| 13 | 10 | 50 | Sets | 155 |  |  | 55 Sets | 058 |  |  |
| 14.4 Ostationa | 11 | 49 | 659 | 28 |  |  | 557 |  |  | 1412129 |
| 15 | 12 | 48 | 729 | 241 |  | 52 | 52728 | 114 |  | ${ }^{14125429}$ |
| 16 | 13 | 47 | 759 | 316 |  | 51 | 1756 | 019 |  | ${ }^{133526}$ |
| 17 | 14 | 46 | 830 | 352 | 10 | 50 | 508 | 055 |  | 1316 |
| 18.5 § great. h. | 15 | 45 | 95 | 431 | 11 | 49 | 9859 | 135 |  | 12.5614 |
| 19 | 17 | 43 | 946 | 520 | 12. | 48 | 8.939 | 223 |  | 1237 m |
| 20 | 18 | 42 | 1032 | 619 | 14 |  | 61024 | 322 |  | 121722 |
| 225 | 19 | 411 | 1126 | 736 | 15 |  | 51118 | 439 |  | 1157 |
| 236 | 21 |  |  | ${ }^{9} 88$ | 17 | 43 | 3 morn | 611 | 311 | 113720 |
| 24 | 25 | 37 | 132 | 1141 | 18 | 42 | ${ }^{018}$ | 737 | 21 | 1116 |
| \% $\delta$ | 24 | 36 | 241 | 031 | 21 | 49 | ${ }^{1} 125$ | 84 |  |  |
| 26 | 25 | 35 | 351 | 113 | 22 | , | $8{ }^{3} 45$ |  |  | 035 |
| 27.3 in aphelion | 26 | 34 | 458 | 148 | 23 | 37 | $7{ }^{3} 454$ | 1056 |  | 14 |
| great. bri | 28 | 32 | Rise | 213 | 25 | 35 | 5 (lises'1 | 1116 |  | 932 |
|  | 29 | 31 | 76 | 247 | 26 | 34 | 4741 | 1150 | 1 | 91027 |
| 31 | 3 | 30 | 737 | 330 | 27 | 33 | 3733 | 033 |  | 849 |
|  | 31 | 29 | 8 | 353 | 28 | 32 |  |  |  | 8 |

Complacency,-Never assent, merely to please others ; for that is, besides flattery, ofentimes untruth, and discovers a mind to be servile and base: nor contradict to vex others, for that shows an ill temper, and provokes, but profits nobody.

Love silence even in the mind.-W, Penn.

MOON'S PHASES.

| , | Philatlelphia. |  |  |  | Buaton, |  |  |  | Cincinnati. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Last Quarter, | 1. 4 | $\mathrm{H}_{1}$ | $\underline{42}$ | A. | D. $4$ | $\begin{aligned} & \mathrm{H} . \\ & 5 \end{aligned}$ | $\begin{gathered} M_{0} \\ 9 \end{gathered}$ | A. | D. |  |  |  |
| New Moon, | 12 | 8 | 15 | M. | 12 | 8 | 32 | M. | 12 | 7 | 39 | M, |
| Finst Quarter, | 19 | 2 | 51 | M. | 19 | 3 | 8 | M. | 19 | 2 | 15 | M. |
| Full Mioon, | 26 | 8 | 12 | A. | 26 | 8 | 29 | A. | 26 | 11 |  |  |


|  |  | Mita, | Pana io and |  | Jersey, na. | Borton | state. | $\begin{aligned} & \text { Englaw } \\ & \text { antomich } \end{aligned}$ | $\begin{aligned} & \text { cigan. } \\ & \hline \end{aligned}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Mooll | Hieh water |  |  |  | High water. | O | $\begin{array}{\|c\|c\|} \hline \text { Sum? } \\ \text { decli. } \end{array}$ |
|  |  | rises. |  | rimes |  | rise |  | rime | $\frac{\text { Bost'n }}{\text { n }}$ / |  |  |
|  | ria. 2h. 20 m . | $326$ | 28 | 838 | 424 | $530$ | 30 | 832 | ${ }^{1} 22^{\text {m }}$ |  | $8 \times 6$. |
| 22 | \% great. clon. ${ }^{\text {a }}$ | 34 | 26 | 914 | 51 | 32 | 28 | 97 | 2 | 1 | 743.16 |
| 3.3 | \% rises 4 h . 42 m | 35 | 25 | 9.54 | 542 | 33 | 27 | 946 | 245 | 1 | 72128 |
| 44 | Din apogee | 36 | 24 | 1039 | 630 | 34 |  | 1031 | 333 | 1 | 659 [ |
| 55 | 2 rises 7 h .7 m | 37 | 23 | 1130 | 745 | 35 |  | 121 | 448 | 2 | 63722 |
| 66 | hs'th 9 h .10 m . | 39 | 21 | norn | 842 | 37 |  | morn | 545 | 2 | 614 क |
| 7.7 | Ald. r. 10h. 33. | 40 | 20 | 024 | 10 | 38 | 22 | 016 | 7.5 | 2 | 6 |
| 8 F | ¢ 6 D | 41 | 19 | 124 | 11.9 | 40 | 20 | 117 | 812 | 3 | 52928 |
| 9 | Atair m. 8h. 31 | 43 | 17 | 226 | 06 | 41 | 19 | 220 |  | 3 |  |
| 10 | Ari. r. 7 h .47 m . | 44 | 16 | 329 | 051 | 43 | 17 | 325 | 954 | 3 | 44424 |
| 11 | 86 | 45 | 15 | 435 | 130 | 44 | 16 | 432 | 1034 | 4 | 421 m2 |
| 125 | \% rises 4h. 35 m | 46 | 14 | Sets | 29 | 45 | 15 | Sets | 1112 | 4 | 35821 |
| 136 | ¢ rises $2 \mathrm{~h}, 8 \mathrm{~m}$. | 48 | 12 | 633 | 232 | 47 | 13 | 629 | 1125 | 4 | 335 |
| 147 | ¢ 6 D | 49 | 11 | 77 | 259 | 48 | 12 | 7.2 | 0 | 5 |  |
| 15 F | \% stationary | 51 | 9 | 746 | 338 | 50 | 10 | 740 | 041 | 5 |  |
| 162 | Din perigee | 52 | 8 | 830 | 422 | 51 | 9 | 822 | 125 | 5 | 22619 |
| 173 | 2 'ises $6 \mathrm{~h}, 18 \mathrm{~m}$ | 53 | 7 | 923 | 511 | 53 | 7 | 914 | 214 | 6 | ${ }^{2}{ }^{2} 89$ t 17 |
| 184 | Lyra s. 6 h .48 m | 54 |  | 10.22 | 611 | 54 |  | 1014 | 314 | 6 |  |
| 195 | 5 \% rises 41.3 m . | 56 | 4 | 1127 | 728 | 55 |  | 1119 | 431 | 6 | 116 |
| 206 | 2 so. 8 h .13 m . | 57 | 3 | morn | 852 | 57 |  | morn | 555 | 7 | 05315 |
| 217 | ¢ in ap. $2 \downarrow$ ¢ © | 58 | 2 | 032 | 1013 | 58 |  | 025 | 716 | 7 | 029 0 69 |
| 22 F | () enters $\sim$ | 59 | 1 | 139 | 1119 | 59 |  | 133 | 822 |  |  |
| 232 | rises 2 h .7 m . | 615 | 559 | 246 | 08 | 1 | 559 | 242 | 911 |  | 01726 |
| 243 | Alinth s. Oh. 41 |  | 58 | 351 | 047 | 2 | 58 | 348 | 950 | 8 | $041 \times$ |
| 254 | $2 \%$ \% | 3 | 57 | 454 | 123 | 4 | 56 | 453 | 1026 | 9 | 14.48 |
| 265 | 52 ris. 5 h . 40 m . | 5 | 55 | Rises | 152 | 5 | 55 | Rises | 1055 | 9 | 127 ¢ 18 |
| 276 |  | 6 | 54 | 66 | 221 |  | 58 | 62 | 1124 | 10 | 151 <br> 214 |
| 287 | $\underline{Y}$ in infer 6 \% | 7 | 53 | 638 | 254 | 8 | 52 | 632 7 | 1157 030 |  | 2148 23812 |
| 29 F | Fom. s. 9h. 54 | 9 | 51 | 712 | 327 | 10 | 50 |  | 030 |  | 2 <br> 2 <br> 3 <br> 3 <br> 124 |
| 3012 | $2 / \mathrm{h}$ south 7h. 33. | 10 | 50 | 751 | 4 | 1) 11 | 149 | 7 | 14 | 410 | $3 \quad 124$ |

Temper.-Nothing does reason more right than the coolness of those that offer it ; for truth often suffers more by the heat of its defenders, than from the argument of its opposers.
Jostice.-Believe nothing against another, but upon good authority ; nor report what may hurt another, unless it be a greater hurt to others to conceal it.

MOON'S PHASES.

|  | Philadeiphia. |  |  |  | Boston. |  |  |  | Cinchnnati. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\mathrm{n}_{7}$ | $\mathrm{N},$ | M. 28 |  | $\mathrm{D}_{-}$ |  |  |  |  |  |  |  |
| New Moon, | 15 |  |  | A. | $15$ | $3$ | $45$ | A. | $7$ | $3$ | $9$ |  |
| First Quarter, | 23 |  |  | A. | 15 | 7 | 42 | A. | 15 | 6 | 49 | A |
| Fill Moon, | 30 |  |  | M. | 16 23 30 | 10 | 40 | M. | 23 | 9 | 47 | M. |
|  |  |  | 16 | M. | 30 |  |  | M. | 30 |  |  |  |



Christ is a path,-if any be misled;
He is a robe,-if any naked be;
If any chance to hunger,--he is bread;
If any be a bondman,-whe is free;
If any be but weak,-how strong is he?


To dead men, life he is; to sick men healih;
To blind men sight; and to the needy wealth;
A pleasure without loss; a treasure without stealth.
Nothing forms so truly great and dignified a character as the meekness and gentleness of Christ.-W. Penn.

M(ION'S PHASES.


|  |  | PAila. Pamna. N. Jersey, Ohio and Indiana. |  |  |  | Boston, N: Eurgland, N: Yort State \& Srichigan. |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | C. REMARKS |  |  | Moo sets. | ligh whiter Phila | Sun | Sun | Moon | $\begin{aligned} & \text { High } \\ & \text { Water } \\ & \text { Bost'ry } \end{aligned}$ |  | O Sunk. D |
|  |  |  |  |  | 028 |  | $\mid 454$ | ท. |  |  | $12$ |
| 2 | 6 Spica r, 10h | 59 |  |  | 111 |  | 56 | 55 | 01 |  |  |
| 3 | Ald. S. 7 h . | 58 |  | Rises | 142 |  | 57 | Rise | 1046 |  |  |
|  | 5 sets | 57 |  | 65 | 213 |  | 58 | 60 | 1116 |  | 16 |
|  | 2 ) | 56 |  | 714 | 249 |  | 59 | 712 | 1152 |  | 15 |
|  | 8 Arct. r. 9h | 55 |  | 825 | 325 |  | 50 | 824 | 028 |  | 141544 |
|  | 4 | 54 | 6 | 934 | 41 | 658 |  | 93 |  |  |  |
|  |  | 52 |  | 1045 | 489 | 57 |  | 104 | 14 |  | 15616 |
| 9 | 6 Pol.s. 10 | 51 |  | 11 | 52 | 56 |  | Orn | 22 |  | 14 |
| 10 | 7 \% | 50 | 10 | morn | 61 | 55 |  | 0 | 31 |  |  |
| 11 | G | 49 | 11 |  | 717 | 53 |  | 114 | 4 |  |  |
| 12 | 2 Ly | 48 | 12 | 215 | 836 | 52 |  | 22 | 54 |  |  |
| 13 | 3 sir . | 46 | 14 | 316 | 1018 | 51 | 9 | 32 | 721 |  |  |
| 14 | 4 | 45 | 15 |  | 1136 | 49 | 11 | 416 | 839 |  |  |
| 15 | 5 ¢ sets 8h. 11 | 44 | 16 | 455 | 032 | 48 | 12 | 50 | 935 |  |  |
|  |  | 43 | 17 | 535 | 116 | 47 | 13 | 539 | 1019 |  |  |
| 17 | 78 sets | 42 | 18 | Sets | 154 | 45 | 15 | Sets | 1037 |  |  |
|  | G | 41 | 19 | 619 | 228 | 44 | 16 | 617 | 1131 |  |  |
|  |  | 39 | 21 | 721 | 31 | 42 | 18 | 720 |  |  | 411 |
| 20 | Proc, s. 9h | 38 | 22 | 821 | 332 | 41 | 19 | 823 | 035 |  | 14113 |
| 21 | O | 36 | 24 | 921 | 43 | 40 | 20 | 92 |  |  | 41 |
|  | 5 5 | 35 | 25 | 1020 | 418 | 38 | 22 | 102 | 121 |  |  |
| 23 | 6 | 34 | 26 | 1118 | 447 | 37 | 25 | 112 | 150 |  | 14958 |
| 1 | 7 D in Apogee | 33 | 27 | morn | 528 | 36 | 24 | nor | 231 |  | 4936 |
| 25 | ¢ sets 8 h .33 r | 31 | 29 | 016 | 619 | 34 | 26 | 023 | 322 |  | 13913 |
| 26 | $2{ }^{2}$, res 4 . 4 m | 30 | 30 | 112 | 718 | 35 | 2 | 118 | 421 |  | 3851 |
| $27$ | ${ }_{6}$ rises 41 | 29 | 31 |  | 3837 | 31 | 29 | 210 | 540 |  | S 828 |
| $28$ | $4{ }_{5}{ }^{\text {s }}$ sets 9 h . | 28 | 3 | 252 | 959 | 30 | 30 | 259 |  |  | 1 |
| 29 | 5216 (9) |  | 34 |  |  |  | 30 | 34 | 811 |  | $3)$ |

A true simplicity; a tranquility of the mind, which is the fruit of resignation to the will of God; a patience with regard to the defects of our neighbour, which the presence of God inspires us with; a willingness to confess our faults, and be reprehended for them; also to submit ourselves to the advice of experienced persons: these are virtues useful and necessary to our satisfaction.

They always pray, whose hearts always feel true love and desire.

MOON'S PHASES.



Christian's Choice.-I am frail, and the world is fading; but my soul is immortal, and God is eternal. If I pitch upon the creatures, either they may take wings like an eagle that fleeth towards heaven, or my soul may take its way with the rich fool, and go to hell ; but if I choose God for my portion, then mercy and goodness

## AMERICAN ALMANAC

REPOSITORY

## USEFUK KNOWKEDGE,

FOR THE YEAR

1844. 

> BOSTON: PUBLISHED BYDAVID H. WILLIAMS.  1843.

# AMERICAN ALMANAC 

AND

REPOSITORY

OF

## USEFUK KNOWKEDGE,

F0R THE YEAR

## 1844.

> BOSTON:
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> 1843.

The sign + is prefixed to the latitude, or declination, of the Sun, or other heavenly body, when north, and the sign - when south; but the former prefixed to the hourly motion of the Moon in latitude, indicates that she is approaching, and the latter that she is receding from, the north pole of the ecliptic.

The letters M. $A ., m$. $a_{\text {, }}$ denote Morning and Afternoon.

## CHRONOLOGICAL CYCLES.



## SIGNS OF THE ZODIAC.

| Spring signs. | $\left\{\begin{array}{l}\text { 1. } \\ \text { 2. } \\ \text { 2. } \\ \text { 3. } \\ \text { 3. } \\ \square\end{array}\right.$ Taurus. Gemini. | Autumn signs. | $\left\{\begin{array}{l} \text { 7. } \bumpeq \text { Libra. } \\ \text { 8. } \mathrm{m} \\ \text { S. Scorpio. } \\ \text { S. Sagittarius. } . \end{array}\right.$ |
| :---: | :---: | :---: | :---: |
| Summer signs. | $\left\{\begin{array}{l} \text { 4. } \frac{\sigma}{\text { Cancer. }} \\ \text { 5. } R \text { Leo. } \\ \text { 6. Iip Virgo. } \end{array}\right.$ | Winter signs. | $\left\{\begin{array}{l} \text { 10. Vf Capricornus. } \\ \text { 11. }=\text { Aquarius. } \\ \text { 12. } \dot{\text { Pisces. }} \end{array}\right.$ |

## BEGINNING AND LENGTH OF THE SEASONS.



| $\begin{aligned} & \text { Day of } \\ & \text { Mon } \\ & \text { Month. } \end{aligned}$ | Star's <br> Name. |  |  | At the time of Conjunction. |  |  | Eimiting Parallels between which the ocemh is visible |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Appmremt <br> R. A. of <br> Nown and <br> Stir. | Apparent Dectination of Star. | Sinr <br> N. or S. uf Moon. |  |
|  |  |  | $\begin{array}{\|ccc\|} \hline \text { h. } & \text { m. }_{+} & \text {s } \\ 5 & 27 & 43 \end{array}$ | h. m. 8 . 2830.15 | $11447.7 \mathrm{~N} \text {. }$ |  | 88 N .1 S |
| 24 |  |  | 2 M. | 23951.431 |  |  |  |
|  | $n$ \% | 5 | 44743 | $5 \quad 984.12$ | 215552 |  |  |
|  | G |  | 12219 | $2{ }^{16} 16 \quad 2.86$ | $\begin{array}{llllllllllllllll}5 & 36 & 55.2 \mathrm{~S}\end{array}$ | 1459 | 5423 |
|  | m $\begin{aligned} \\ \end{aligned}$ | 6 | 62036 A .2 | 232829.97 | 23749.4 N . | 1430 | 24 |
| 2 |  |  | $5 \quad 345 \mathrm{M}$. | $453 \quad 50.02$ | 212147.5 N. | 2838 | N. 12 |
|  |  | 3.4 | 91911 A. | $525 \quad 23,662$ | 21.238 .0 | 4629 | $90 \quad 31$ |
|  |  |  | $930 \quad 5$ | 61945.92 | 301815.7 | 3830 | 90 |
|  |  |  | 7222 M . | 73031.30 | 18191.8 | 10 | $15 \quad 19$ |
|  | 29 б๐ | 6 | 63947 | 81953.26 | 14.4316 .1 | 24.42 | 36 |
|  | $\times$ 水 |  | 1382 | 5920.341 | $11178 \quad 21.5$ | 5235 | 90.19 N |
|  |  | 6 | 52917 | 10.47 42.67 | 13859.9 | 35.44 | 80.48. |
|  | $d \stackrel{ }{7}$ |  | 617 14 A. | 19834.00 | $19 \quad 13 \quad 15.8 \mathrm{~S}$. | 611 | $31 \quad 32$ |
|  |  | 5 | 72751 | $21 \quad 9.46$ | 1115936.2 | 329 | 34 |
|  | 16 H | 6 | 74510 | 23 28 30.25 | 11449.9 N . | 1258 | 5 N . |
|  | $m$ H | 6 | 05252 M . | 3529.72 | 23753.9 | 1919 | 5819 S . |
| 26 | $\pi \sim$ | 5 | 8 3149 A . | 24040.94 | $16 \quad 494.2$ | 5124 | $90 \quad 26 \mathrm{~N}$ |
|  | ${ }^{2} \mathrm{P}$ |  | 11409 | $247 \quad 7.6817$ | 17.4211 .2 | 18 55 | 59 B S. |
| 30 |  | 3.4 | 42658 M. | 58824.44 | $\begin{array}{llll}21 & 2 & 32.9\end{array}$ |  | $90 \quad 21 \mathrm{~N}$. |
|  |  | 5 | 4.4723 | $6 \quad 1946.75$ | 20 18 14.6 | 25 22 | 74 |
| v. 1 |  |  | 112152 A. | 74811.59 | 16120.1 N | 4652 N. |  |
| 2 | $\mathrm{A}^{2} \sigma$ |  | 115954 | 89825.90 | 124033.2 | 5638 | $00 \quad 27$ |
|  | $k^{2}$ の |  | 54225 M | 500.641 | 122714.4 |  | $56 \quad 16 \mathrm{~S} .$ |
|  |  | 4.5 | $7 \quad 538$ | 112223.51 | 2851.3 S. | 4328 |  |
|  |  | 6 | 8 33.35 A | 231559.28 | 02442.9 N . | 42 | 0 |
|  |  | 6 | 43.42 | 1919.15 | $\begin{array}{lllllllll}0 & 16 & 3.6\end{array}$ | 52 | 90 |
|  | 16 |  | 12156 M . | 2829.98 | 114 48.A | 4837 | $99 \quad 16$ |
|  | $x$ | 5 | 25219 | 24041.14 | 16494.8 | 5220 | $90 \quad 28$ |
|  |  | 6 | 6.183 | $47 \quad 7.5917$ | 174211.9 | 1941 | $60 \quad 7 \mathrm{~S}$. |
|  |  |  | 18.53 | 43.351 | 17244.8 | 3938 | $90 \quad 14 \mathrm{~N}$. |
|  |  | 5,6 | 9009 A . | 4812.88 | 20.1137 .7 | 5111 | 9034 |
|  |  |  | $\begin{array}{lllll}6 & 34 & 4\end{array}$ | 53.52 .22 | 212148.1 | 18.41 | $60 \quad 3 \mathrm{~N}$. |
|  | $1058$ |  | $8.50 \quad 36$ | 5842.08 | $\begin{array}{llll}21 & 29 & 40.6\end{array}$ | 12.3 | 513 S . |
|  |  |  | $\begin{array}{lllll}6 & 6 & 9 & \mathrm{M} .\end{array}$ | 51821.77 | 214755.0 | 632 |  |
| ec. 1 | C Sextans |  | 111158 A . | 95841.29 | $\begin{array}{llll}6 & 21 & 58.9 \mathrm{~N}\end{array}$ |  | 18 |
|  |  |  | 114554 | 10.47 44.44 | 13341.7 | 2542 | 6613 |
|  |  |  | 34151 M . | $55 \quad 40.96$ | $\begin{array}{lll}0 & 50 & 1.2\end{array}$ | 22.5 | $61 \quad 17$ |
|  | G |  | 81640 A. | 22161.88 | $\begin{array}{llllll}5 & 36 & 55.9 & \mathrm{~S}\end{array}$ | 2953 | -1 10 |
|  |  | 4.5 | 50.4749 M . | 45352.52 | 21.2147 .9 N. | $\begin{array}{rrr}19 & 1 \\ 86 & 10\end{array}$ | 20 |
|  |  |  | 150218. | 52825.47 | 21 21831.9 | 3610 | 9080 |
|  | 16 II |  | 344654 | 61845.70 | 20.3457 .8 | 1246 | 598 S . |
|  | 1 П |  | 5.51624 | 19 48,01 |  | 2758 | 710 |
|  | 29 |  | 8322.42 M . | 819 59,92 | 14.4385 | 157 | 41. |
|  | $\times$ ¢ |  | 511158 A. | 5922.79 | $\begin{array}{llll}11 & 17 & 9.1\end{array}$ | 4429 | 11 N . |
|  | Sextans |  |  | 95842.19 | 62147.7 | 2838 |  |
|  |  |  | $6 \begin{array}{llll}6 & 5 & 56 & 16\end{array}$ | 104744.99 |  | 3228 | 80 |
|  | e $\Omega$ |  | 5111913 A. 11 | 112225.18 | 2981.9 S . | 48.41 | N. 10 N . |

Naar Approaches to the Stars, and their Occultations by the Planets, for the year 1844.


## DARKNESS OF THE NIGHTS DURING THE YEAR 1844.

 For Boston, New York, Philadelphia, Washington, ģc.The number of hours at the top of the page denotes the average time for the month from the end of evening twilight to the beginning of monning twilight.
The dots in the table denote the hours of entire darkness, when there is neither sun, moon, nor twilight, and their disposition denotes the hours before or after midnight.

|  | January <br> 12 h. | Feb'y $11 \mathrm{~h} .$ | March 9 h . | April | May | Jun. | July | Aug. <br> 7 h . | Sept. 8 h. | Oct. $9 \mathrm{~h} .$ | Nov. 11 h. | Dec. 12 h. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  |  |  | - |  |  |  |  | . | ..." | ...". |
| 2 |  |  |  | - |  |  |  |  | . | . | ..... D | ..... D |
| 3 |  | - |  |  |  |  |  |  | . | ...D | ...... | .....* |
| 4 |  |  | $\bullet$ | - | - |  |  |  | ...D | *******) | ...... | .* |
| 5 | $\bigcirc$ | - |  | * |  | . | - | ..D | ...' | ...." | ...* | ...* |
| 6 |  | * |  | ... | ... | - | .. D | ... | ...* | ...." | ...." | .... |
| 7 |  | ... |  | ... | ...* | ... | ... | ... | $\ldots$ | ....." | ..." |  |
| 8 | -* | .... | * | $\ldots$ | $\ldots{ }^{\text {- }}$ | .. | ... | ...* | ...." | .. |  |  |
| 9 | ... | ..... | * | - D | .... | .... | $\ldots$ | ...* | ....... |  | ..... |  |
| 10 |  | ...... D | ...D | ...." | -* | - | ...' | ..." | ......" |  | ......... |  |
| 11 | ...... | ....." | ... | .." | ...." | ..* | ." | ..." |  |  | ........ | ........... |
| 12 | ..... D | ... | ..* | ....". | ... | ..." | - | ...." | ... | ..... | .... | ......... |
| 13 | ......" | - | ...." | . | ...." | .* | ... |  |  |  | ... | ........ |
| 14 | ......." |  | ..." | * | ...... |  | c. | ...... | ....... |  | . .... | , |
| 15 | ..."* |  | ....... | ...... | ... |  | ..... | ..." | ....... | ... |  | . ...... |
| 16 | ........ |  |  |  | c. | ..." | +.." | ...... | ....... | ... | G | ¢ ${ }^{*} \cdot$ |
| 17 | . | . |  |  | ...... | ..." | ..." | ...... | ..... |  |  | - .... |
| 18 |  |  |  |  | ..... | ...* | ..... | ..... | - ..... |  |  | - ... |
| 19 |  |  |  | , | .... | ..." | ...* |  | ¢ . $\cdot \cdots$ | ¢ |  | . |
| 20 |  |  |  | ...". | -... | ." | ..." | ©... | - |  |  | * |
| 21 |  |  |  | . | - .... |  | .... | ... |  |  |  | - |
| 22 |  |  |  |  |  | ¢ | ¢.** | .. |  |  |  |  |
| 23 |  | . .... | - ..." | - |  | - | . |  |  | $\frac{7}{8}$ |  |  |
| 24 |  |  |  |  |  | . |  |  | 唇 |  | $\bullet$ | $\bigcirc$ |
| 25 |  |  |  |  | ¢ |  |  |  | 莍 |  |  |  |
| 26 | 3 ¢ ${ }^{\text {c. }}$ |  | $\cdots$ |  |  |  |  |  | E |  |  |  |
| 27 |  |  | $\cdots$ |  | $\cdots$ | . |  | - |  |  |  | * |
| 23 |  |  | * - |  |  |  | - |  |  |  |  | .. |
| 29 |  |  | - |  |  | - |  |  |  |  | -* | ... |
| 30 |  |  |  |  |  |  |  |  |  |  | .... | ....* |
| 31 |  | $\cdot$ |  |  | $\bigcirc$ |  |  |  |  |  | $\ldots$ |  |

DARKNESS OF THE NIGHTS DURING THE YEAR 1844.
For Charleston, New Orleans, \&ic.

|  | January 11 h . | $\begin{aligned} & \text { Feb'y. } \\ & 10 \mathrm{~h} . \end{aligned}$ | March 9 h . | April 8 h . | May <br> 7 h. | June <br> 7 h. | July <br> 7 h . | Aug. <br> 8 h. | Sept. <br> 9 h . | Oct. 10 h . | Nov. 11 h. | Dec. 11 h . |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | * |  |  |  | $\bigcirc$ |  |  | . | . | . | *** | -** |
| 2 | - |  |  | - |  | . |  | - | * | ... | ..... D | ..... D |
| 3 |  | - |  |  |  | . |  | . | -." | .... D | ...... | ..... |
| 4 |  |  | - |  |  | * | . | . | $\ldots \mathrm{D}$ | .... | ...... | .....* |
| 5 | - |  |  | * | . | ... |  | ...D | ..." | ..... | ..* | ... |
| 6 |  |  |  | .. | ... | $\ldots$... | ...) | ... | $\ldots$ | ....* | .... | .......' |
| 7 |  | ... |  | ... | ... | .... | $\ldots$ | ... | ...." | ... | ... |  |
| 8 | . | $\ldots$ | ... | .. | $\cdots \cdot{ }^{\text {- }}$ | $\ldots$ | ... | ...* | ...." | ... | ......... |  |
| 9 | ... | ..... | ..... | $\ldots \cdot \cdot$ D | ...** | .... | $\cdots$ | ...." |  |  | . |  |
| 10 |  | ..... D | $\cdots \cdot \cdot{ }^{\text {d }}$ |  | * | .." | ... | ...'* |  |  |  |  |
| 11 | ..... | .....* | ....." | ... | ..* | ...." | ..." |  |  |  |  |  |
| 12 | ...... ${ }^{\text {D }}$ | ....." | ....'. | - | ... | ..." |  |  |  |  |  | ........ |
| 13 | ...... | ........ | - |  | .. |  |  | . |  |  | ......... |  |
| 14 | .......' | ... |  |  |  |  | - | . | ... | ........ | ........ |  |
| 15 | ......... | ... |  |  | ....'* | - | .'* | ......" | .,....' | ...... | ......" |  |
| 16 | ......... | ... |  |  |  | $\cdots$ | $\cdots$ | ...... | ....... | ..... | ¢.*... | © |
| 17 | ... |  |  |  | ... |  | . | ...... | ..... | .... | ..... |  |
| 18 | ......... | ..."..... |  |  | .... |  |  | ....." | ..... | © $\cdot \cdots$ | ".. |  |
| 19 |  | ........ | ...... | ...... | ... | ..... | .- | ..... | ¢.... | ... | -* |  |
| 20 | ... |  | ....... | ...." | $\cdots$ | $\ldots$ | ... | ¢, $\cdot \cdots$ | - ... | ... |  |  |
| 21 |  | .. | ...... | ...". | ..." | .-." | .... | ... | ... | . |  |  |
| 22 | ........ |  | ...". | ..." | ... | , $\times$ | ¢ $\cdot \cdots$ | ... | . |  |  |  |
| 23 |  |  | .... | .... | ... | ¢. | ... | . |  |  |  |  |
| 24 | *..... |  |  | .... | ... | ... | ... |  | 3 | - | - | $\bigcirc$ |
| 25 |  |  | .... | © ${ }^{-}$ | © ${ }^{*}$ | . | . |  | to |  |  |  |
| 26 | ..... | C... | © $\cdots$ | * | - | - |  |  |  |  |  |  |
| 27 | C.... | * | $\cdots$ | * | . |  |  |  |  |  |  |  |
| 28 | ... | . | - |  |  |  | - |  |  |  | * | * |
| 20 | * | , |  |  |  | - |  |  |  |  |  | .. |
| 30 |  |  |  |  |  |  |  |  |  |  | ... | ..." |
| 31 |  |  |  |  | - |  |  |  |  |  |  |  |

## Twilight begins and ends. Mean time.

| Boston, | 1st diny |  | 7hi day. |  | 18ih diy. |  | 196\% day. |  | 2rih day. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Begins. h. m. | $\begin{aligned} & \text { Bhis. } \\ & \mathrm{h} \mathrm{~min} . \end{aligned}$ | Begins. l. m . | $\begin{aligned} & \text { Binds. } \\ & \mathrm{h} . \mathrm{m} . \end{aligned}$ | Begins. <br> h. in. | Ends. h. m. | $\begin{aligned} & \text { Begms. } \\ & \text { h. m. } \end{aligned}$ | buls: | Begins: h. m. | $\begin{aligned} & \text { Fnds. } \\ & \mathrm{h} . \mathrm{m} \text {. } \end{aligned}$ |
|  | 17 m . | 312. | 355 m . | 9 a . | 343 m . | 815 a . | 331 m . | 927 a | 319 m . | 37 a |
| N. York, | 111 | 757 | 359 | 85 | 348 | 314 | 337 | 9 22 | 326 | 830 |
| Wash. | 115 | 759 | 1.4 | 31 | 363 | 89 | 343 | 817 | 333 | 825 |
| Charles. | 125 | 743 | 416 | 749 | 47 | 755 | 359 |  | 351 | 35 |
| N. Orl's. | 429 | 739 | 421 | 744 | 113 | 749 | 45 | 753 | 358 | 58 |

PERIGEE AND AFOGEE OF THE MOON.
Perigee, 4th day, 6h. M.
Apogee, 19th day, 1h. A.

|  | Sun's upper limb rises and sets, (corr. for refract.) M. T. |  |  |  |  |  |  |  |  |  | High Water, M. Time. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \dot{8} \\ & \stackrel{5}{9} \\ & \frac{1}{8} \end{aligned}$ |  | $\begin{aligned} & \text { New York, } \\ & \text { \&e. } \end{aligned}$ |  |  |  | $\begin{aligned} & \frac{5}{5} \\ & \frac{8}{8} \\ & \frac{8}{5} \\ & \frac{8}{3} \end{aligned}$ |  | $\begin{aligned} & \text { N. Orleans, } \\ & \text { de. } \end{aligned}$ |  |  | $\begin{gathered} \text { New York, } \\ \text { de. } \end{gathered}$ | $\begin{gathered} \frac{\dot{3}}{\frac{8}{8}} \\ \frac{5}{5} \\ \frac{5}{8} \end{gathered}$ |
|  | rises. <br> 1. m . | $\begin{aligned} & \text { sets. } \\ & \text { h. in } \end{aligned}$ | $\begin{aligned} & \text { rises. } \\ & \text { h. m. } \end{aligned}$ | sels. | rises. <br> h. II | $\begin{aligned} & \text { sets. } \\ & \mathrm{h} . \mathrm{m} . \end{aligned}$ | rises. <br> h. m | se/s. | $\begin{aligned} & \text { rises. } \\ & \text { h. m. } \end{aligned}$ | sets. | h. m. | h. m. | h. m. |
| 1 M. | 543 | 626 | 5 | 624 | 546 | 622 | 549 | 620 | 5 50 | 619 | $1025 a$ | 859 | $6.25 a$ |
| 2 Tu. | 42 | 27 | 43 | 25 | 45 | $\underline{23}$ | 48 | 21 | 49 | 20 | 116 | 846 | 76 |
| 3 W | 40 | 28 | 41 | 26 | 43 | 24 | 46 | 21 | 47 | 20 | 11.47 | 927 | 747 |
| 4 Th . | 38. | 29 | 39 | 97 | 41 | 24 | 45 | 22 | 46 | 21 | $\cdots$ | 10.10 | 830 |
| 5 F . | 36 | 30 | 37 | 28 | 40 | 25 | 44 | 23 | 45 | 21 | 030 m | 1052 | 912 |
| 6 S . | 34 | 31 | 35 | 29 | 38 | 26 | 42 | 23 | 44 | 22 | 119 | 1137 | 9.57 |
| 7 Su. | 532 | 632 | 533 | 630 | 586 | 697 | 541 | 624 | 543 | 6 20 | 157 m | * • * | 10 42a |
| 8 M . | 31 | 33 | 32 | 31 | 35 | 25 | 39 | 25 | 41 | 23 | 242 | 022 m | 1131 |
| 9 Tu. | 20 | 34 | 30 | 32 | 33 | 29 | 38 | 25 | 40 | 23 | 334 | 114 | . . . |
| 10 W . | 27 | 35 | 23 | 33 | 31 | 30 | 37 | 96 | 39 | 94 | 432 | 212 | 032 m |
| 11 Th. | 26 | 36 | 27 | 34 | 30 | 31 | 35 | 27 | 38 | 24 | 546 | 326 | 146 |
| 12 F | 94 | 37 | 25 | 35 | 98 | 32 | 34 | 27 | 37 | 25 | 711 | 451 | 311 |
| 13 S . | 93 | 38 | 94 | 36 | 27 | 33 | 33 | 28 | 36 | 95 | S 29 | $6 \quad 9$ | 499 |
| $14 S u$, | 521 | 639 | 5 | 637 | 596 | 634 | 532 | 6 2n | 535 | 696 | 931 m | 711 m | 531 m |
| 15 M . | 19 | 40 | 21 | 39 | 24 | 85 | 31 | 30 | 31 | 27 | 1017 | 757 | 617 |
| 16 T . | 18 | 41 | 20 | 39 | 23 | 36 | 30 | 30 | 33 | 27 | 1057 | 837 | 657 |
| 17 W . | 16 | 42 | 18 | 40 | 22 | 37 | 29 | 31 | 32 | 98 | 1130 | 910 | 730 |
| 18 Th. | 14 | 43 | 16 | 41 | 20 | 33 | 28 | 32 | 31 | 29 | 0 5a | 9.45 | 85 |
| 19 F . | 13 | 4 | 15 | 42 | 19 | 39 | 27 | 32 | 30 | 99 | 035 | 10.15 | 835 |
| 20 S . | 11 | 45 | 13 | 43 | 17 | 40 | 25 | 33 | 29 | 30 | 16 | 1046 | 96 |
| $215 u$. | 510 | 647 | 512 | 645 | 5.16 | 641 | 524 | 6.34 | 593 | (0 30 | 138 a | 11 cm | 938 m |
| 22 M . | 8 | 48 | 10 | 46 | 14 | 42 | 23 | 35 | 27 | 31 | 211 | 1151 | 10.11 |
| 23 Tu | 6 | 49 | 9 | 47 | 13 | - 43 | 22 | 35 | 96 | 31 | 245 | 0 25a | 1045 |
| 24 W . | 5 | 50 | 8 | 48 | 12 | 44 | 21 | 36 | 25 | 32 | 397 | 17 | 11.97 |
| 25 Th . | 3 | 52 | 6 | 49 | 10 | 45 | 20 | 37 | 24 | 33 | 416 | 150 | 0 10a |
| 26 F | 9 | 53 | 5 | 50 | 9 | 46 | 19 | 37 | 23 | 33 | 520 | 30 | 120 |
| 27 S . | 1 | 51 | 4 | 51 | 8 | 47 | 18 | 58 | 22 | 34 | 639 | 419 | 239 |
| 28 Su. | 459 | 655 | 59 | 652 | 56 | 649 | 516 | 639 | 520 | 635 | 750 a | 5309 | 350 a |
| 29 M . | 58 | 57 | 1 | 53 | 5 | 49 | 15 | 39 | 19 | 35 | 856 | 636 | 456 |
| 30 Tu . | 56 | 53 | 0 | 54 | 3 | 50 | 14 | 40 | 18 | 36 | 947 | 727 | 5.47 |


| Boston, | 181 day. |  | 7i) day. |  | I8th day. |  | 19his disy. |  | 25iliany: |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Begins. h. m. | Binds. h. m. | Begins. <br> h. 111. | Bnds. h. m. | Begins. h. m. | Binds. h. m. | Begins h. m. | Ends. h. m. | Begins: h. m. | $\begin{aligned} & \text { Emds. } \\ & \mathrm{h} . \mathrm{m} . \end{aligned}$ |
|  | $4 \mathrm{23m}$ | $717 a$ | 430 m | $76 a$ | 437 m | 6 55a | 441 m | 6 46a | $4 \mathrm{f0m}$ | 638 a |
| N. York, | 425 | 715 | 432 | 74 | 438 | 651 | 144 | 6.46 | 4.50 | 638 |
| Wash'ton, | 427 | 713 | 433 | 73 | 438 | 654 | 144 | 6.46 | 450 | 633 |
| Cha'stor, | 432 | 78 | 436 | 70 | 440 | 6.52 | 145 | 645 | 4.49 | 639 |
| N. Ori's | 434 | 76 | 437 | 658 | 4.41 | 651 | 145 | 645 | 148 | 6.40 |


PHASE\% OF THE MOUN.
I.ast Quarter, 4th day, 11h. 21.0m M. | First Quarter, 18th day, 10h. $7.6 \mathrm{~m} . \mathrm{M}$.





MOON'S PHASES.

follow me whilst I live, and glory and eternity shall crown me when I die. I will therefore now resign that which I should soon lose, that so I may obtain that which I shall always enjoy.

Where charity keeps pace with gain, induslry is blessed; but to slave to get, and keep it sordidly, is a sin against providence, a vice in government, and an injury to their neighbours.

## FIFTH MONTH.



Whether we eat, or whether we drink, all is to be done to the glory of God ; so the most necessary actions, and the most urgent duties, if we forget him, may become means of dissipating the heart.

MOON'S PHASES,


I have often wondered at the unaccountableness of man in this, among other things ; that, though he loves changes so well, he should care so litte to hear or think of his last, great, and, if he pleases, his best, change.-Wm. Penn.

He is a Judas, that will get money by any thing.

MOON'3 PHASEs.


Reparation.-If thou hast done an injury to another, rather own it than defend it. One way thou gainest forgiveness; the other, thou doublest the wrong and reckoning.

The, preparation of the heart, as well as the answer of the tongue, is of the Lord; and to have it, our prayers must be powerful, and our worship grateful.

## The American Jewish

## Year Book

 5678September 17, 1917, to September 6, 1918

Edited by
SAMSON D. OPPENHEIM
for the
AMERICAN JEWISH COMMITTEE


PHILADELPHIA
The Jewish Públication Society of America

## MOVABLE FESTIVALS OF THE CHURCH, IN 1844.

Septuagesima Sunday, Quing. or Shrove do. Ash Wed. Lent begins, Mid Lent Sunday, Palm Easter Low
do
do
do

Feb. 4th
" 18th * 21st Mar. 17th " 31st Apr. 7th

Rogation Sunday, Ascen. Day, or Holy Th. Whitsunday or Pentecost, Trinity Sunday, Corpus Christi Day, Fête Dieu, Advent Sunday,

May 12th
" 16 th
" 26 th June 2d * 6th Dec. 1st

## JEWISH CALENDAR.

[The anniversaries marked with an asterisk (") are to be strictly observed.]
Year. Names of the Months.
5604 Thebet begins . . . . . . Dec. 24, 1843.


- ${ }^{\wedge}$,


MOSES JACOB EZEKIEL



## - Second day of New Moon.

+ Fast observed on following day.
How yoars underseored in red oceur on the date of conjunction S.C.T.


## NAUTICAL ALMANAC

## ASTRONOMICAL EPHEMERIS

FOR THE YEAR

## 1844.

PUBLISHED BY ORDER OF<br>THE LORDS COMMISSIONERS OF THE ADMIRALTY.

## 致のñon:

PRINTED BY WILLIAN CLOWES AND SONS, 14, CHARING-CROSS ;
AND SOLD BY
JOHN MURRAY, ALBEMARLE STREET,
1840.

## AT APPARENT NOON.

|  |  | THE SUN'S |  |  |  | Sidereal <br> Time <br> of the <br> Semidiam. <br> passing the <br> Meridian.* | Equation of <br> Time, to be added to Apparent Time. | $\begin{gathered} \text { Diff. } \\ \text { for } \\ 1 \text { hour. } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Apparent Right Asceusion. | Diff. for 1 hour. | Apparent <br> Declination. | $\begin{aligned} & \text { Diff. } \\ & \text { for } \\ & 1 \text { hour. } \end{aligned}$ |  |  |  |
| Frid. |  |  |  |  |  |  |  |  |
|  | 1 | 50 | 9337 | $25 \quad 21$ | $57 \times 20$ | 5 | $1232 \cdot 26$ | $0 \cdot 518$ |
| Sat. | 2 | 22 53 51 44 | 9316 | $\begin{array}{llll}7 & 2 & 28 & 6\end{array}$ | 57.42 | $1 \begin{array}{ll}1 & 5 \cdot 26\end{array}$ | $12 \times 19 \quad 83$ | $0 \cdot 539$ |
| Sun. | 3 | 225735 '02 | 9•296 | $63930{ }^{\circ}$ | $57 \cdot 67$ | $\begin{array}{ll}1 & 5\end{array} 19$ | $12 \quad 6 \cdot 89$ | $0 \cdot 559$ |
| Mon. | 4 | $\begin{array}{llll}23 & 1 & 18 & 13\end{array}$ | 9'278 | $\begin{array}{lllll}6 & 16 & 25 & 9\end{array}$ | 57:89 | $\begin{array}{ll}1 & 5\end{array} 12$ | 11153.48 | 0:577 |
| Tues. | 5 | 23 5 $500 \cdot 80$ | $9 \cdot 260$ | $\begin{array}{lllll}5 & 53 & 16 & 6\end{array}$ | 58.09 | 15 5.06 | $\begin{array}{llll}11 & 39 & 64\end{array}$ | $0 \cdot 595$ |
| Wed, | 6 | $238843 \% 4$ | $9 \cdot 244$ | $5{ }_{5}^{5} 30 \quad 2 \cdot 5$ | $58 \cdot 28$ | 1500 | $\begin{array}{lll}11 & 25 & 36\end{array}$ | 0.611 |
| Thur. | 7 | $\begin{array}{llll}23 & 12 & 24 & 89\end{array}$ | 9*228 | $\begin{array}{llll}5 & 6 & 43\end{array}$ | $58 \cdot 45$ | $4 \cdot 94$ | $1110 \quad 70$ | 0.627 |
| Frid. | 8 | $\begin{array}{lllll}23 & 16 & 6 & 35\end{array}$ | $9 \cdot 213$ | 443211 | $58 \cdot 60$ | 14.88 | $10 \begin{array}{ll}10 & 5 \\ 10 & 65\end{array}$ | 0.642 |
| Sat. | 9 | $\begin{array}{llllll}23 & 19 & 47 & 45\end{array}$ | 9-199 | $41954 \cdot 7$ | 58 '74 | $1 \quad 4 \cdot 83$ | $1040 \cdot 25$ | 0.656 |
| Sun. | 10 | 23 23 288 | 9•186 | $3 \begin{array}{llll}36 & 24.9\end{array}$ | $58: 87$ | $4 \cdot 78$ | $1024 \cdot 51$ | $0 \% 68$ |
| Mon. | 11 | $\begin{array}{llll}23 & 27 & 8 & 69\end{array}$ | 9.174 | $\begin{array}{llll}3 & 32 & 52\end{array}$ | $58 \cdot 97$ | 14.73 | $\begin{array}{lll}10 & 8 & 47\end{array}$ | 0.681 |
| Tues, | 12 | $\begin{array}{lllll}23 & 30 & 48 & 87\end{array}$ | 9•163 | $\begin{array}{llll}3 & 9 & 16 & 8\end{array}$ | $59 \cdot 07$ | 14.69 | 9 52 13 | 0.692 |
| Wed. | 13 | $23 \begin{array}{llll} & 34 & 28 & 77\end{array}$ | 9•152 | 24539.1 | 59.14 | 14.65 | $935 \cdot 59$ | $0 \cdot 702$ |
| Thur. | 14 | $\begin{array}{llll}23 & 38 & 8 & 42\end{array}$ | 9142 | $\begin{array}{lllll}2 & 21 & 59 & 7\end{array}$ | $59 \cdot 20$ | $14 \% 1$ | $9 \begin{array}{lll}9 & 18\end{array}$ | $0 \cdot 712$ |
| Frid. | 15 | $\begin{array}{lllllllll} & 23 & 41 & 47\end{array}$ | $9 \cdot 134$ | $\begin{array}{llllll}1 & 58 & 18 & 8\end{array}$ | $59 \cdot 5$ | 14.58 | $\begin{array}{lll}9 & 1 & \text { '58 }\end{array}$ | $0 \cdot 721$ |
| Sat. | 16 | 23450704 | 9•125 | 13436 '8 | $59 \cdot 28$ | $14 \cdot 55$ | $844 \cdot 28$ | $0 \cdot 730$ |
| Sun. | 17 | $23 \quad 49 \quad 6 \cdot 04$ | $9 \cdot 117$ | 11054.2 | $59 \cdot 29$ | 1 4 | $8 \quad 26$-77 | $0 \cdot 737$ |
| Mon. | 18 | 23 52 44 '86 | $9 \cdot 111$ | 0 47113 | $59 \cdot 28$ | 11 4 | $8 \quad 9 \cdot 09$ | $0 \cdot 743$ |
| Tues. | 19 | 23 56 $23 \quad 53$ | 9•105 | S. $02328 \cdot 5$ | $59-26$ | $1 \begin{array}{ll}1 & 4\end{array} 4$ | $7 \quad 51 \cdot 26$ | $0 \cdot 750$ |
| Wed. | 20 | 0 0 0 2.05 | 9'100 | N. $0 \quad 0 \quad 13$ '8 | $59 \cdot 23$ | $14 \cdot 45$ | $733 \cdot 27$ | $0 \cdot 755$ |
| Thur. | 21 | $\begin{array}{lllll}0 & 3 & 40 & 44\end{array}$ | $9 \cdot 095$ | $\begin{array}{lllll}0 & 23 & 55\end{array}$ | $59 \cdot 18$ | $14 \cdot 43$ | $\begin{array}{llll}7 & 15\end{array}$ | $0 \cdot 759$ |
| Frid. | 22 | 0-718 | 9'091 | 04735 '5 | $59 \cdot 11$ | $4 \cdot 42$ | $656 \cdot 94$ | $0 \cdot 764$ |
| Sat. | 23 | $\begin{array}{llll}0 & 10 & 56 & 90\end{array}$ | 9 '088 | 111141 | $59 \cdot 02$ | $1 \begin{array}{ll}1 & 4\end{array}$ | 638 \%1 | $0 \cdot 767$ |
| Sun. | 24 | 01435 \%00 | $9 \cdot 085$ | $134,50 \cdot 6$ | $58 \cdot 93$ | 14.40 | $6 \quad 20 \cdot 21$ | $0 \% 769$ |
| Mon. | 25 | $\begin{array}{lllll}0 & 18 & 13 & 05\end{array}$ | $9{ }^{\circ} 084$ | $1 \begin{array}{llll}1 & 58 & 24.8\end{array}$ | 58 '82 | 4 '39 | $\begin{array}{lll}6 & 1 & 76\end{array}$ | $0 \cdot 770$ |
| Tues. | 26 | $\begin{array}{llllll}0 & 21 & 51 & 06\end{array}$ | 9 -082 | $22156 \cdot 4$ | $58 \cdot 68$ | 1439 | $543 * 7$ | $0 \cdot 772$ |
| Wed. | 27 | $\begin{array}{lll}0 & 25 & 29\end{array}$ | $9 \cdot 032$ | $245 \quad 24 \cdot 8$ | 58.54 | $1 \begin{array}{ll}1 & 4 \\ 1\end{array}$ | $5 \quad 54 \cdot 74$ | 0.772 |
| Thur. | 28 | 0 29 7 <br> 0   | 9 -084 | $\begin{array}{llll}3 & 8 & 49 & 7\end{array}$ | $58 \cdot 39$ | $4 \cdot 40$ | $5 \quad 6 \cdot 22$ | 0.770 |
| Frid. | 29 | $\begin{array}{lllll}0 & 32 & 45\end{array}$ | 9 '085 | $\begin{array}{llll}3 & 32 & 11 & 1\end{array}$ | $58 \cdot 22$ | $4 \cdot 40$ | $447 \cdot 73$ | 0.769 |
| Sat. | 30 | 03623.07 | 9 '088 | $\begin{array}{lllll}3 & 55 & 28\end{array}$ | 58.03 | 4.41 | $429 \cdot 27$ | 0.767 |
| Sun. | 31 | $040 \quad 1 \cdot 17$ | 9 '092 | $\begin{array}{lllll}4 & 18 & 41 \cdot 1\end{array}$ | $57 \cdot 84$ | 14.42 | $\begin{array}{lll}4 & 10 \cdot 87\end{array}$ | $0 \cdot 763$ |
| Mon. | 32 | $\begin{array}{llllll}0 & 43 & 39 & 37\end{array}$ |  | N. $44149 \%$ |  | $1 \quad 4 \cdot 44$ | $352 \cdot 57$ |  |

[^0]| AT MEAN NOON. |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Day of the Month. | THE SUN'S |  |  | Equation of <br> Time, to be subtracted from Mean Time. | Sidereal Time. |
|  |  | Apparent Right Ascension. | Apparent <br> Declination. | Semidiam.* |  |  |
| Frid. | 1 |  | S. $7^{\circ} 25^{\prime} 33^{\prime \prime} 2$ | $16^{\prime}{ }^{\prime \prime}{ }^{\prime \prime} \cdot 1$ | ${ }_{12}{ }^{\mathrm{m}} 32 \times 37$ | $22377^{\mathrm{h}} 33^{\mathrm{m}} \cdot 03$ |
| Fria. | 2 | $\begin{array}{lllllllll}22 & 53 & 49 & 52\end{array}$ | S. 782404 | $\begin{array}{ll}16 & 9 \\ 16 & 8 \\ 16\end{array}$ | $\begin{array}{llll}12 & 19 & 9\end{array}$ | 224129.59 |
| Sun. | 3 | $\begin{array}{lllllll}22 & 57 & 33 & 14\end{array}$ | $63941 \%$ | $\begin{array}{lll}16 & 8 & 6\end{array}$ | 12700 | $22 \quad 45 \quad 26 \cdot 14$ |
| Mon. | 4 | $\begin{array}{llll}23 & 1 & 16 & 29\end{array}$ | $\begin{array}{lllll}6 & 1637\end{array}$ | $\begin{array}{ll}16 & 8 \cdot 4\end{array}$ | 11153.60 | $\begin{array}{lllll}22 & 49 & 22 & 69\end{array}$ |
| Tues. | 5 | 23 4 58  <br> 9    | $\begin{array}{llllll}5 & 53 & 27 & 8\end{array}$ | $16{ }^{16} 8 \cdot 1$ | 113975 | $\begin{array}{lllllll}22 & 53 & 19 & 25\end{array}$ |
| Wed. | 6 | $\begin{array}{llll}23 & 8 & 41 & 27\end{array}$ | $53013 \cdot 5$ | $16 \quad 7 \cdot 9$ | 112548 | $\begin{array}{llllllllll}22 & 57 & 15\end{array}$ |
| Thur. | 7 | $\begin{array}{llll}23 & 12 & 23 & 16\end{array}$ | $\begin{array}{lllll}5 & 6 & 54 & 7\end{array}$ | $16 \quad 7 \quad 6$ | $\begin{array}{lll}11 & 10 & \text { 81 }\end{array}$ | 23 1-112 35 |
| Frid. | 8 | $\begin{array}{llll}23 & 16 & 4 & 67\end{array}$ | $\begin{array}{lllllll}4 & 43 & 31 & 8 \\ 4\end{array}$ | 1678 | $10 \begin{array}{llll}10 & 5 & 76\end{array}$ | $\begin{array}{llll}23 & 5 & 8 & 90\end{array}$ |
| Sat. | 9 | $\begin{array}{llllll}23 & 19 & 45 & 82\end{array}$ | $4205 \cdot 1$ | $\begin{array}{ll}16 & 7 \cdot 1\end{array}$ | $10 \quad 40 \cdot 36$ | $\begin{array}{lll}23 & 9 & 5: 46\end{array}$ |
| Sun. | 10 | $\begin{array}{llll}23 & 23 & 26 & 63\end{array}$ | $\begin{array}{lllll}3 & 56 & 35\end{array}$ | 16 6 | $1024 \cdot 62$ | $\begin{array}{lll}23 & 13 & 2\end{array}$ |
| Mon. | 11 | $\begin{array}{llll}23 & 27 & 7 \cdot 14\end{array}$ | $\begin{array}{llll}3 & 33 & 2 \cdot 1\end{array}$ | $16 \quad 6 \cdot 5$ | $10 \quad 8 \cdot 58$ | $\begin{array}{lllll}23 & 16 & 58 \cdot 56\end{array}$ |
| Thes. | 12 | $23 \quad 30 \quad 47 \cdot 36$ | $\begin{array}{lll}3 & 9 & 26 \%\end{array}$ | $16 \quad 6 \cdot 3$ | $952 \cdot 24$ | $2312055 \cdot 11$ |
| Wed. | 13 | $\begin{array}{llll}23 & 34 & 27 & 30\end{array}$ | $24548 \cdot 6$ | $16 \quad 6 \quad 0$ | 935.64 | $\begin{array}{lllll}23 & 24 & 51 & 67\end{array}$ |
| Thur. | 14 | $\begin{array}{lll}23 & 38 \cdot 7 \cdot 00\end{array}$ | 222889 | $16 \quad 5 \cdot 7$ | $918 \cdot 78$ | $\begin{array}{lllll}23 & 28 & 48 & \cdot 22\end{array}$ |
| Frid. | 15 | $\begin{array}{llllllllllll}23 & 41 & 46\end{array}$ | 158979 | $\begin{array}{ll}16 & 5\end{array}$ | $9 \quad 1 \times 69$ | $\begin{array}{lllll}23 & 32 & 44\end{array} \cdot 77$ |
| Sat. | 16 | $\begin{array}{lllll}23 & 45 & 25 & 70\end{array}$ | $13445 \cdot 4$ | $\begin{array}{lll}16 & 5 \cdot 2\end{array}$ | $\begin{array}{llll}8 & 44.38 \\ 8 & 26\end{array}$ | $\begin{array}{lllll}23 & 36 & 41 & 39\end{array}$ |
| Sun, | 17 | $\begin{array}{llll}23 & 49 & 4 \cdot 75\end{array}$ | $111 \quad 2.6$ | $16 \quad 4 \cdot 9$ | 826.88 | $\begin{array}{llll}23 & 40 & 37 & 88\end{array}$ |
| Mon. | 18 | $\begin{array}{lllll}23 & 52 & 43\end{array}$ | 04719.4 | $16 \quad 4 \%$ | $\begin{array}{ll}8 & 9 \cdot 19\end{array}$ | $234434 \cdot 43$ |
| Tues. | 19 | $23 \quad 56 \quad 22$ *33 | S. $0 \quad 23 \quad 36 \cdot 3$ | $\begin{array}{ll}16 & 4\end{array} 3$ | 751.35 | $\begin{array}{llll}23 & 48 & 30 & \cdot 98\end{array}$ |
| Wed. | 20 | $\begin{array}{lll}0 & 0 & 0.90\end{array}$ | N. $\begin{array}{llll}0 & 0 & 6 \cdot 4\end{array}$ | $\begin{array}{ll}16 & 4 \cdot 1\end{array}$ | $733 \cdot 37$ | $\begin{array}{llll}23 & 52 & 27 & 53\end{array}$ |
| Thur. | 21 | $\begin{array}{lllll}0 & 3 & 39 & 34\end{array}$ | 0 23 3 48 | $\begin{array}{ll}16 & 3\end{array}$ | $715 \cdot 25$ | 2356124.09 |
| Frid. | 22 | $\begin{array}{llll}0 & 7 & 17.67\end{array}$ | $04728 \cdot 7$. | $\begin{array}{lll}16 & 3 & 5\end{array}$ | $657 \cdot 03$ |  |
| Sat. | 23 | 0 10 5 | 11178 | $16 \quad 3 \cdot 2$ | $\begin{array}{lll}6 & 38 \cdot 70 \\ 6 & 20\end{array}$ | $\begin{array}{lllll}0 & 4 & 17 & 19\end{array}$ |
| Sun. | 24 | $\begin{array}{lllll}0 & 14 & 34.04\end{array}$ | $13444 \cdot 4$ | $16 \quad 3 \cdot 0$ | $620 \cdot 29$ | $\begin{array}{lllll}0 & 8 & 13 & 74\end{array}$ |
| Mon. | 25 | $\begin{array}{lll}0 & 18 & 12 \cdot 13\end{array}$ | $\begin{array}{lllll}1 & 58 & 18\end{array} 9$ | $\begin{array}{ll}16 & 2\end{array}$ | $6 \quad 1 \cdot 84$ |  |
| Tues. | 26 | $\begin{array}{llll}0 & 21 & 50 \cdot 19\end{array}$ | $22150 \cdot 8$ | $\begin{array}{ll}16 & 2 \cdot 4 \\ 16 & 2 \cdot 2\end{array}$ | 5 43 3 <br> 5 2 4 | $\begin{array}{llll}0 & 16 & 6 & 85 \\ 0 & 9 & 3 & \\ 0\end{array}$ |
| Wed. | 27 | 0 $2528 \cdot 22$ | $\begin{array}{lllllllll}2 & 45 & 19\end{array}$ | $16 \quad 2 \cdot 2$ | $524 \cdot 81$ | $\begin{array}{lll}0 & 20 & 3\end{array}$ |
| Thur. | 28 | $\begin{array}{lll}0 & 29 & 6.25\end{array}$ |  |  | $\begin{array}{lll}5 & 6 & 29\end{array}$ | $\begin{array}{llll}0 & 23 & 59 & 96\end{array}$ |
| Frid. | 29 | $\begin{array}{llllllll}0 & 32 & 44 & 30\end{array}$ | $\begin{array}{llll}3 & 32 & 6 & 4 \\ 3 & 5 & \end{array}$ | $\begin{array}{ll}16 & 1 \\ 16 & 1.6\end{array}$ | 4 47  <br> 4   <br> 4 09 79 | $\begin{array}{lllll}0 & 27 & 56 & 51 \\ 0 & 31 & 53 \cdot 06\end{array}$ |
| Sat. | 30 | $\begin{array}{lllll}0 & 36 & 22 & 39\end{array}$ | $\begin{array}{llll}3 & 55 & 24.0 \\ 4 & 18 & 37 & \end{array}$ | $\begin{array}{ll}16 & 1 \\ 16 & 1 \cdot 3\end{array}$ | $\begin{array}{lll}4 & 29 \cdot 33 \\ 4 & 10 & 92\end{array}$ | $\begin{array}{lllll}0 & 31 & 53 & 06 \\ 0 & 35 & 49.61\end{array}$ |
| Sun. | 31 | $040 \quad 0 \cdot 54$ | $41837 \cdot 1$ | $16 \quad 16$ | $410{ }^{\circ} 92$ | 03549.61 |
| Mon. | 32 | $04338 \cdot 78$ | N. 44145 | $\begin{array}{ll}16 & 0\end{array}$ | $352 \cdot 62$ | $03946 \cdot 17$ |

[^1]MEAN TIME.

|  | THE SUN'S <br> Apparent |  | Logarithm of the Radins Vector of the Earth. | THE MOON'S |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Lougitude, | Latitude. |  | Semidiameter. |  | Horizontal Parallax. |  |
|  | Noon. | Noon. | Noon. | Noon. | Milnight. | Noon. | Michight. |
| 1 | $341^{\circ} 3^{\prime} \mathbf{2 0}^{\prime \prime} 0^{\prime \prime} 8$ | S. $0^{\prime \prime} \cdot 53$ | $9 \cdot 9963041$ | $\begin{array}{ccc}\prime \\ 15 & 32^{\prime \prime} \cdot 1\end{array}$ | ${ }^{15} 5{ }^{\prime} 38 \cdot 8$ | $57^{\prime} \quad 0^{\prime \prime} \cdot 4$ | $57^{\prime} 25^{\prime \prime} \cdot 1$ |
| 2 | $\begin{array}{lllll}342 & 3 & 27 & 3\end{array}$ | 0.62 | $9 \cdot 9964134$ | $1545 \cdot 5$ | $15 \quad 520$ | $57 \quad 49 \cdot 6$ | 5813 |
| 3 | $\begin{array}{llll}343 & 3 & 31 \cdot 7\end{array}$ | $0 \cdot 67$ | $9 \cdot 9965244$ | 1558 | $\begin{array}{ll}16 & 3\end{array}$ | $58 \quad 36 \cdot 3$ | $5857 \cdot 3$ |
| 4 | $344 \quad 3 \quad 34 \cdot 2$ | $0 \cdot 69$ | $9 \cdot 9966371$ | $\begin{array}{lll}16 & 9 \cdot 1\end{array}$ | $16 \quad 13 \%$ | $59 \quad 16 \cdot 4$ | 5932.9 |
| 5 | 345 3.34 .9 | $0 \cdot 69$ | $9 \cdot 9967513$ | $16 \quad 17 \cdot 3$ | 1620 | $59.46 \cdot 5$ | $59 \quad 57 \cdot 1$ |
| 6 | $\begin{array}{llllll}346 & 3 & 33 & 7\end{array}$ | 0.65 | 9 '9968671 | $1622 \cdot 1$ | $1623 \cdot 2$ | $60 \quad 4 \cdot 2$ | $608^{\circ} 0$ |
| 7 | 347 3 30  <br> 1    | $0 \cdot 59$ | 9'9969842 | $16 \quad 23 \cdot 3$ | $1622 \cdot 5$ | $60 \quad 8 \cdot 5$ | $60 \quad 5 \quad 6$ |
| 8 | $\begin{array}{llll}348 & 3 & 26 & 2\end{array}$ | $0 \cdot 50$ | 9.9971025 | $16 \quad 21{ }^{16}$ | $1618 \cdot 8$ | 5959.9 | $5951 \cdot 8$ |
| 9 | $\begin{array}{llll}349 & 3 & 19 & 8\end{array}$ | $0 \cdot 39$ | 9 -9972222 | $16 \quad 15 \%$ | $1612 \%$ | $5941 \cdot 4$ | $5929 \cdot 1$ |
| 10 | 350 | 0 26 | 9*9973429 | $\begin{array}{lll}16 & 8 & 9\end{array}$ | $\begin{array}{ll}16 & 4\end{array}$ | $5915 \cdot 6$ | $59 \quad 0 \cdot 8$ |
| 11 | $\begin{array}{llll}351 & 3 & 2 \cdot 0\end{array}$ | S. $0 \cdot 13$ | 9.9974644 | $\begin{array}{ll}16 & 0\end{array}$ | $15 \quad 56 \cdot 3$ | $58 \quad 45 \cdot 3$ | $5829 \cdot 4$ |
| 12 | $352 \quad 250 \%$ | N. $0 \cdot 01$ | 9.9975868 | $\begin{array}{llll}15 & 51 & 8\end{array}$ | $1547 \cdot 5$ | $5813 \%$ | $57 \quad 56 \cdot 9$ |
| 13 | $\begin{array}{llll}353 & 2 & 37 & \\ 35\end{array}$ | 0.14 | 9'9977096 | $1543 \cdot 1$ | $\begin{array}{lll}15 & 38 & 7\end{array}$ | $5740 \cdot 8$ | $5724 * 9$ |
| 14 | 354 2 <br> 355 2 | 0:26 | $9 \cdot 9978329$ | $1534 \cdot 4$ | $1530 \cdot 2$ | $57 \quad 8 \cdot 9$ | $56 \quad 53 \cdot 5$ |
| 15 | $\begin{array}{lll}355 & 2 & 6 \cdot 1\end{array}$ | $0 \cdot 37$ | $9 * 9979566$ | $1526 \%$ | $1522 \cdot 0$ | $5638 \cdot 3$ | $56 \quad 23 \cdot 3$ |
| 16 | 356 1 477 | $0 \cdot 45$ | 9'9980803 | $1518{ }^{\circ} 0$ | $1514 \cdot 1$ | 56 8 <br> 7  | 55544 |
| 17 | $\begin{array}{llll}357 & 1 & 27 \\ 358 & 1 & 4\end{array}$ | 0*50 | $9 \cdot 9982041$ | $15 \quad 10 \cdot 3$ | $15 \quad 6 \%$ | $55 \quad 40$ \% | 5527.0 |
| 18 | $\begin{array}{llll}358 & 1 & 5 \\ \end{array}$ | 0'52 | 9*9983278 | $\begin{array}{lll}15 & 3\end{array}$ | 14597 | $5514 \cdot 1$ | $55 \quad 1 \cdot 8$ |
| 19 | 359 0 $41 \times 1$ | $0 \cdot 52$ | $9 \cdot 9984513$ | $1456 \%$ | $1453 \cdot 7$ | $5450 \cdot 2$ | $5439 \cdot 7$ |
| 20 | $\begin{array}{llll}0 & 0 & 14\end{array}$ | 0*48 | 9.9985744 | 1451 '1 | 1448 '8 | $5430 \cdot 0$ | $5 \pm 21 \cdot 7$ |
| 21 | $05946 \cdot 6$ | $0 \cdot 41$ | $9 \cdot 9986974$ | $1446 \%$ | $1445 \cdot 3$ | $5414 \cdot 5$ | $54 \quad 8.9$ |
| 22 | $15916 \cdot 2$ | $0 \cdot 32$ | 99988202 | $1444{ }^{2}$ | $1443 \cdot 6$ | 54 4.9 | $54 \quad 2 \cdot 7$ |
| 23 | $25843 \cdot 4$ | $0 \cdot 21$ | 9.9989428 | $1443 \cdot 6$ | $1444{ }^{1} 1$ | $54 \quad 2 \cdot 5$ | $54 \quad 4 \%$ |
| 24 | $\begin{array}{llll}3 & 58 & 8 & 3\end{array}$ | N. 0 * 09 | 9 '9990652 | $1445 \cdot 3$ | $1447{ }^{\prime}$ | $\begin{array}{lll}54 & 8\end{array}$ | $5415 \cdot 3$ |
| 25 | $45731 \cdot 0$ | S. $0 \cdot 04$ | $9 \cdot 9991876$ | $1449 \%$ | $1452 \cdot 7$ | $5424 \cdot 4$ | $5436 \cdot 1$ |
| 26 | 5 56 51 4 <br> 6 -6   | 0.16 | 9 '9993101 | $1456 \%$ | $15 \quad 1 \cdot 1$ | $5450 \cdot 1$ | $55 \quad 6 \cdot 8$ |
| 27 | $\begin{array}{llll}6 & 56 & 9 \cdot 3\end{array}$ | $0 \cdot 29$ | $9 * 9994327$ | $15 \quad 6 \quad 3$ | $15 \quad 12 \cdot 1$ | $55 \quad 25 \cdot 9$ | 5547 '1 |
| 28 | $75524 \cdot 9$ | 0-39 | 9 '9995556 | $1518 \cdot 5$ | $15 \quad 25 \cdot 3$ | $5610 \cdot 5$ | $56 \quad 3.5 \cdot 7$ |
| 29 |  | 0-48 | $9 * 9996787$ | $1532 \cdot 6$ | $15 \quad 40 \cdot 1$ | $57 \quad 2 \cdot 3$ | 5799.9 |
| 30 | 9 53 49 | $0 \cdot 53$ | 9 '9998022 | $1547 \cdot 8$ | $15 \quad 55 \cdot 4$ | $5758 \cdot 0$ | $5826^{\circ} 0$ |
| 31 | $10 \quad 5257.9$ | 0'57 | $9 * 9999261$ | $\begin{array}{ll}16 & 2 \cdot 9\end{array}$ | $1610 \%$ | 5853 '5 | 5y $19{ }^{\circ} 5$ |
| 32 | 115245 | S. 0 \% 5 | 0\%0000505 | $16 \quad 16$ | $1622 \cdot 4$ | $5943 \cdot 6$ | $60 \quad 5: 0$ |

MEAN TIME.

|  |  | THE MOON'S |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Longitude, |  | Latitude. |  |  | Meridian <br> Passage. |
|  |  | Noon. | Midnight. | Noon. | Midnight. |  |  |
| Frid. | 1 | $117^{\circ} 40^{\prime} 36^{\prime \prime} \cdot 3$ | $124^{\circ} 188^{\prime} 8^{\prime \prime} 8 \cdot 4$ | S. $3^{\circ} \quad 6^{\prime} 56^{\prime \prime} \cdot 8$ | S. $3^{\circ} 33^{\prime}{ }^{\prime \prime} 1^{\prime \prime} \cdot 0$ | $12^{\text {d }} \cdot 1$ | $\begin{array}{cc} \mathrm{h} & \mathrm{~mm} \\ 9 & 38 \cdot 7 \end{array}$ |
| Sat. | 2 | $131 \quad 213.6$ | $1375249 * 3$ | $\begin{array}{llll}3 & 56 & 32 & 5\end{array}$ | $\begin{array}{llll}4 & 17 & 1.6\end{array}$ | $13 \cdot 1$ | $10 \quad 294$ |
| Sun. | 3 | $1444942 \cdot 7$ | $15152030 \cdot 3$ | $\begin{array}{lll}4 & 34 & 0\end{array}$ | 447 4'5 | $14 \cdot 1$ | 1119 |
| Mon. | 4 | 159 | 16613 94*7 | 455496 | 45958 | $15 \cdot 1$ | $1210 \cdot 5$ |
| Tues. | 5 | $\begin{array}{llll}173 & 29 & 57 & 8\end{array}$ | 180 | 459178 | $453.42 \cdot 4$ | $16 \cdot 1$ | $\begin{array}{ll}13 & 2 \cdot 1\end{array}$ |
| Wed. | 6 | $188 \quad 10 \quad 34 \cdot 3$ | $1953236 \cdot 4$ | $44314 \cdot 0$ | 428009 | $17 \cdot 1$ | $13 \quad 55 \cdot 2$ |
| Thur. | 7 | $2025428 \cdot 7$ | 210151516 | $\begin{array}{llll}4 & 8 & 19 & 7\end{array}$ | $\begin{array}{llll}3 & 44 & 32\end{array} 8$ | $18 \cdot 1$ | 1450 \% |
| Frid. | 8 | 217 <br> 1 | $2245033 * 9$ | $\begin{array}{llll}3 & 17 & 7 \cdot 9\end{array}$ | $\begin{array}{lllll}2 & 46 & 37 & 9\end{array}$ | $19^{\prime} 1$ | $1547 \cdot 8$ |
| Sat, | 9 | $2323851 * 0$ | $23913 \quad 40 \cdot 3$ | $21337 \cdot 6$ | 138443 | $20 \cdot 1$ | 1646 '8 |
| Sun. | 10 | $2461945 * 9$ | $\begin{array}{lll}253 & 22 & 0\end{array}$ | S. $1 \quad 2347$ | S. 0.2546 | 21.1 | $1746 \cdot 3$ |
| Mon. | 11 | $260 \quad 20 \quad 20{ }^{\circ} 9$ | $2671450{ }^{29}$ | N.0 1116 | N.0 47828 | $22^{2} \cdot 1$ | $1844 \cdot 7$ |
| Tues. | 12 | $\begin{array}{lllll}274 & 5 & 36\end{array}$ | $280 \quad 5246 \%$ | 122487 | $1 \begin{array}{llllll}1 & 56 & 39\end{array}$ | $23 \cdot 1$ | $1940 \cdot 7$ |
| Wed. | 13 | $287 \quad 36 \quad 30 \cdot 3$ | 2941657 | $22833 \times 3$ | $258 \quad 7 \quad 3$ | $24 \cdot 1$ | $20 \quad 33$ '5 |
| Thur. | 14 | $300 \quad 54 \quad 16 \cdot 7$ | $307 \quad 28 \quad 36.6$ | 3 25 1 | $\begin{array}{lllll}3 & 48 & 57 & 3\end{array}$ | $25 \cdot 1$ | 2123 |
| Frid. | 15 | 3140030 | $320 \quad 28 \quad 40 \%$ | $4 \quad 9 \quad 40 \cdot 9$ | 4270 0'5 | $26 \cdot 1$ | $2210{ }^{\circ} 0$ |
| Sat, | 16 | 32654423 | $\begin{array}{llllll}333 & 17 & 39 & 4\end{array}$ | $44047 \times$ | $45055 \cdot 1$ | $27 \cdot 1$ | 22547 |
| Sun. | 17 | 339385 | 3455540 '4 | 45721.9 | $\begin{array}{llll}5 & 0 & 7 \\ 4\end{array}$ | $28 \cdot 1$ | $23 \quad 38$ |
| Mon. | 18 | 3591033.9 | $358 \quad 2242 \cdot 6$ | 45914.0 | $45447{ }^{\circ}$ | $29 \cdot 1$ | ठ |
| Tues, | 19 | $\begin{array}{llll}4 & 32 & 8 & 5\end{array}$ | $1038 \quad 549$ | 44655 \% | $43546 \cdot 3$ | $0 \cdot 5$ | 0 21 1 |
| Wed. | 20 | $1643 \quad 76$ | $224455 \%$ | $42132 \cdot 6$ | 4 4 $26 \cdot 6$ | $1 \cdot 5$ | $1{ }^{1} 4 \cdot 2$ |
| Thur. | 21 | $284430 \cdot 4$ | $3442 \quad 7 \times 3$ | $34442 \cdot 1$ | 3 22 34 1 | $2 \cdot 5$ | 148 |
| Frid, | 22 | $403885 \cdot 1$ | $463246 * 0$ | 2 F | $2{ }_{2} 3281$ | $3 \cdot 5$ | $233 \cdot 3$ |
| Sat. | 23 | $\begin{array}{llll}52 & 26 & 35\end{array}$ | $\begin{array}{llll}58 & 20 & 2 & 7\end{array}$ | 2421.8 | $\begin{array}{llll}1 & 35 & 15 & 1\end{array}$ | 4'5 | $\begin{array}{ll}3 & 19\end{array}{ }^{\prime} 9$ |
| Sun. | 24 | $64 \quad 13 \quad 39 \cdot 0$ | $70 \quad 7 \quad 59 \cdot 4$ | $154 \cdot 0$ | N.0 $34 \begin{array}{ll}1.9\end{array}$ | $5 \cdot 5$ | 48.0 |
| Mon. | 25 | $76 \quad 3 \quad 40 \cdot 7$ | 821217 | N. $0 \quad 235 \cdot 3$ | S. 0.2981 | $6 \cdot 5$ | 457.1 |
| Thes. | 26 | $88 \quad 142 \%$ | $94 \quad 5 \quad 24 \cdot 6$ | S. 100473 | $\begin{array}{lll}1 & 32 & 3\end{array}$ | $7 \cdot 5$ | $547 \%$ |
| Wed. | 27 | $\begin{array}{llll}100 & 13 & 8 & 7\end{array}$ | $106 \quad 2535 \cdot 1$ | $2 \quad 236 \cdot 5$ | $2326 \cdot 1$ | $8 \cdot 5$ | $637 \cdot 1$ |
| Thur. | 28 | 1124322 | $\begin{array}{llll}119 & 7 & 5 & 5\end{array}$ | $\begin{array}{llll}3 & 0 & 10 & 0\end{array}$ | 312624.6 | 9 5 | 7270 8.16 .7 |
| Frid. | $\stackrel{9}{29}$ | 125 | $1321417{ }^{13}$ |  | 411145 | 10'5 | $\begin{array}{ll}8 & 16 \\ 9 & 6\end{array}$ |
| Sat. | 30 | 138 | $\begin{array}{llllll}145 & 49 & 59 & 4\end{array}$ | $\begin{array}{llll}4 & 30 & 0 & 7\end{array}$ | 44443.0 | $11 \cdot 5$ | 9 6 <br> 9  |
| Sun. | 31 | $1524845 \cdot 7$ | 1595434.9 | 45527.9 | $5 \quad 159.8$ | $12 \cdot 5$ | $956 \times 2$ |
| Mon. | 32 | $\begin{array}{lll}167 & 7 & 1\end{array}$ | 17425260 | S. 5 3 $3137 \cdot 4$ | S. 500279 | $13 \cdot 5$ | $1047 \cdot 3$ |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Hour. | Right Ascension. | Declination. | $\begin{array}{\|l\|} \text { Dig. Dec. } \\ \text { for } 10^{\text {mon }} \end{array}$ | Hour. | Right Ascension. | Declination. | $\begin{aligned} & \text { Difr. Dee. } \\ & \text { for 10m, } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\text { FRIDAY } 1 .$ |  | $\stackrel{\prime \prime}{86 \cdot 38}$ | 0 | $S U N D A Y 3$. |  |  |
|  |  |  |  |  | h m |  | " |
| 0 | $\begin{array}{lllll}7 & 56 & 27 & 21\end{array}$ | N. 1735515.8 |  |  | 9 42 18 '2\% | N.8 5654.2 | $127 \cdot 10$ |
| 1 | $75840 \cdot 40$ | $172637 \cdot 5$ | $87 \cdot 42$ | 1 | 9 44 99.91 | 84441116 | $127 \% 0$ |
| 2 | $880053 \cdot 5$ | $171753 *$ | $88 \cdot 45$ | 2 | () $4641 \cdot 59$ | $83125 \cdot 4$ | 128 '32 |
| 3 | $8 \quad 3 \quad 6 \cdot 66$ | $17 \quad 9 \quad 2 \cdot 3$ | $89 \cdot 45$ | 3 | 9) $48 \quad 53 \cdot 27$ | 818185 | 128 *88 |
| 4 | $885 \begin{array}{llll}8 & 19 & 73\end{array}$ | 17005 | $90 \cdot 48$ | 4 | 9) $514 \cdot 95$ | $8 \quad 5 \quad 42 \cdot 2$ | 129.47 |
| 5 | $8732 \cdot 76$ | $1651 \quad 2 \cdot 7$ | $91 \cdot 48$ | 5 | $\begin{array}{llll}9 & 53 & 16 & 63\end{array}$ | $75245 \cdot 4$ | $180 \cdot 08$ |
| 6 | $8 \quad 9 \quad 45 \cdot 75$ | $164153 \cdot 8$ | 92 47 | 6 | 9 $55528 \cdot 31$ | $7 \begin{array}{llll}7 & 39 & 45\end{array}$ | $130 \% 68$ |
| 7 | $8811158 \cdot 70$ | $16 \begin{array}{llll}16 & 32 & 39 & \\ 1 & 0\end{array}$ | $93 \cdot 48$ | 7 | $9 \quad 5740 * 00$ | $720641 \cdot 7$ | 181 18 |
| 8 | 8 1411.61 | $\begin{array}{llllll}16 & 23 & 18 & 1\end{array}$ | $94 \cdot 45$ | 8 | (9) $5951 \cdot 70$ | $\begin{array}{llll}7 & 13 & 35\end{array}$ | 131'63 |
| 9 | $816.21 \cdot 48$ | $16 \begin{array}{lllll}13 & 131 & 4\end{array}$ | $95 \cdot 45$ | 9 | $10 \geqslant 3 \cdot 11$ | $7 \begin{array}{llll}7 & 0 & 25 & 1\end{array}$ | 139 '17 |
| 10 | $8818 \cdot 37 \cdot 31$ | $\begin{array}{lllll}16 & 4 & 18 & 7\end{array}$ | $96 \cdot 42$ | 10 | 10 - 15 14 | $64712 \cdot 1$ | - 67 |
| 11 | S $20050 \cdot 09$ | $\begin{array}{llllll}15 & 54 & 40 & & 2\end{array}$ | $97 \cdot 38$ | 11 | $10 \quad 6 \quad 26$ '88 | $\begin{array}{llll}6 & 33 & 56\end{array}$ | $138 \cdot 15$ |
| 12 | $8 \quad 23 \quad 2 \cdot 83$ | 15 44 55  | $98 \cdot 35$ | 12 | $10 \quad 8 \quad 38 \cdot 63$ | 6 20 37  | 133 '62 |
| 13 | $\begin{array}{llll}8 & 25 & 15 & 53\end{array}$ | $15 \cdot 35 \cdot 5 \cdot \mathrm{~s}$ | 99*30 | 13 | $\begin{array}{llll}10 & 10 & 50 & 41\end{array}$ | $\begin{array}{llll}6 & 7 & 15 & 5\end{array}$ | 134 '10 |
| 14 | $8 \quad 27 \quad 28 \cdot 19$ | $\begin{array}{llll}15 & 25 & 10^{\circ} 0\end{array}$ | $100 \cdot 25$ | 14 | $\begin{array}{lll}10 & 13 & \text { 2 } 20\end{array}$ | $\begin{array}{lllll}5 & 53 & 50 & & 9\end{array}$ | $134 \% 3$ |
| 15 | $889940 \cdot 81$ | $\begin{array}{llllll}15 & 15 & 8 & 5\end{array}$ | $101 \cdot 18$ | 15 | $\begin{array}{lllll}10 & 15 & 14 & 02\end{array}$ | $5 \begin{array}{llll}5 & 40 & 93 & 7\end{array}$ | 134*98 |
| 1 | $833153 \cdot 38$ | $\begin{array}{llll}15 & 5 & 1 & 4\end{array}$ | $102 \cdot 12$ | 16 | $10 \quad 17 \quad 25 \cdot 87$ | $\begin{array}{llll}5 & 96 & 53 & \cdot 8\end{array}$ | $135 \cdot 40$ |
| 17 | $8 \quad 34 \quad 5 \cdot 92$ | $145448 \cdot 7$ | $103 \cdot 03$ | 17 | $\begin{array}{llll}10 & 19 & 37 & 75\end{array}$ | $\begin{array}{lllll}5 & 13 & 21 & 4\end{array}$ | 135 '82 |
| 18 | $883618 \cdot 41$ | $144430 \cdot 5$ | $103 \cdot 95$ | 18 | 102149.66 | $\begin{array}{llll}4 & 59 & 46 & \end{array}$ | $136 * 22$ |
| 19 | $8838 \quad 30 \cdot 87$ | $1434 \quad 6 \cdot 8$ | 104 '85 | 19 | $10 \quad 24 \quad 1 \cdot 60$ | $446 \quad 9 \cdot 2$ | $136 \% 8$ |
| 20 | $8 \quad 40 \quad 43 \cdot 28$ | $14: 3387$ | $105 \cdot 75$ | 20 | $\begin{array}{lllll}10 & 26 & 13 & 58\end{array}$ | $43299 \cdot 7$ | $136 \cdot 97$ |
| 21 | $8 \quad 42 \quad 55 \cdot 66$ | $\begin{array}{llll}14 & 13 & 3 & \cdots\end{array}$ | $106 \cdot 65$ | 21 | 10 28 25 59 | 418479 | $137 \times 3$ |
| 22 | $845 \quad 8 \cdot 00$ | 14 2 23 '3 | 107 '52 | 22 | $10 \quad 3037 \cdot 65$ | 43503 | $137 \cdot 67$ |
| 23 | $\begin{array}{r} 84790 \cdot 30 \\ \text { SATUR } \end{array}$ | $\begin{aligned} & \left\lvert\, \begin{array}{lll} N .13 & 51 & 38 \\ R D A Y & 2 \end{array}\right. \\ & \text { RA } \end{aligned}$ | $108 \cdot 40$ | 23 | $\begin{array}{r} 103249 \cdot 75 \\ M O N \end{array}$ | $\begin{array}{lll}\text { N. } 3 & 51 & 17^{\circ} 9\end{array}$ AY 4. | 138 -00 |
| 0 | 8 $4932 \cdot 56$ | N.13 $4047 \%$ | $109 \cdot 25$ | 0 | $\begin{array}{llll}10 & 35 & 1 & 89\end{array}$ | N. $3 \times 3799$ | 188 32 |
| 1 | $\begin{array}{lllll}8 & 51 & 44 & 79\end{array}$ | $\begin{array}{lllll}13 & 29 & 52 & 3\end{array}$ | $110 \cdot 12$ | 1 | $10 \cdot 3714.08$ | $\begin{array}{llll}3 & 23 & 40 & 0\end{array}$ | $188 \text { '62 }$ |
| 2 | $\begin{array}{llll}8 & 53 & 56 & \cdot 98\end{array}$ | $\begin{array}{lllll}13 & 18 & 51 & 6\end{array}$ | $110 \cdot 95$ | 9 | $10 \quad 39 \times 263$ | $\begin{array}{llll}3 & 9 & 48 & -3\end{array}$ | $188 \cdot 90$ |
| 3 | 8 56 9 13 <br> 8 -8 01  | $\begin{array}{cccc}13 & 7 & 45 & 9\end{array}$ | 111 'so | 3 | $\begin{array}{llll}10 & 41 & 38 & 63\end{array}$ | 22 55 54  | $139 \cdot 18$ |
| $4$ | $\begin{array}{cccc}8 & 58 & 21 & \cdot 25\end{array}$ | 12.56 | $112 \cdot 62$ | 4 | $10.43 \quad 50 \quad 98$ | 241159.8 | $189 \times 3$ |
| $5$ | $\begin{array}{llll}9 & 0 & 33 & 34 \\ 9 & 0 & 45 & 39\end{array}$ | $\begin{array}{lllll}12 & 45 & 19 & 4 \\ 18 & 38 & 58 & -7\end{array}$ | $113 \cdot 45$ | 5 | $10 \quad 46 \quad 3 \quad 39$ | $228 \quad 3 \cdot 2$ | $139 \% 0$ |
| 6 | $\begin{array}{llll}9 & 2 & 45 & 39\end{array}$ | $12 \times 3358 \cdot 7$ | $114 \cdot 25$ | 6 | $\begin{array}{llllll}10 & 48 & 15 & 87\end{array}$ | $\begin{array}{lll} 2 & 14 & 5 \end{array}$ | 139-92 |
|  | $9 \quad 457 \cdot 4 \approx$ | 12 129 $33 \times 2$ | $115 \cdot 05$ | 7 | $10 \quad 50 \quad 28 \quad 41$ | $\begin{array}{lll} 2 & 0 & 5 \cdot 5 \end{array}$ | $140 \cdot 13$ |
| $8$ | $\begin{array}{rrr}9 & 7 & 9\end{array} \cdot 41$ | $\begin{array}{llll}12 & 11 & 2 & 9\end{array}$ | 115 '83 | 8 | $105241 * 01$ | $\begin{array}{llll}1 & 46 & 4 & 7\end{array}$ | $140-93$ |
| 10 | $\begin{array}{rrrrr}9 & 9 & 21 & 37 \\ 9 & 11 & 33 & 3\end{array}$ | $\begin{array}{llll}11 & 59 & 27^{\circ} 9\end{array}$ | $116 \cdot 62$ | 9 | $10-5453 \cdot 69$ | $\begin{array}{lll}1 & 32 & 2 \cdot 7\end{array}$ | $140 \cdot 58$ |
| 10 | $\begin{array}{llllll}9 & 11 & 33 & 31 \\ 9 & 13 & 4 & 5 & 29\end{array}$ | $\begin{array}{lllll}11 & 47 & 48 & \cdot 2 \\ 11 & 36 & 3\end{array}$ | 117 $\cdot 10$ | 10 | $\begin{array}{rrr}10 & 57 & 6 \cdot 44 \\ 10 & -45 & 10 \cdot 96\end{array}$ | $\begin{array}{llll}1 & 17 & 59 & \cdot 5\end{array}$ | $140 \cdot 68$ |
| 11 | $\begin{array}{lllll}9 & 13 & 45 & 29 \\ 9 & 15 & 5 & 2\end{array}$ | $\begin{array}{rrrr}11 & 36 & 3 & 8 \\ 11 & 04 & 1\end{array}$ | $118 \cdot 15$ | 11 | $10.5919 \cdot 26$ | $1 \begin{array}{llll}1 & 3 & 55 & 4\end{array}$ | $140 \cdot 81$ |
| 12 | $\begin{array}{llll}9 & 15 & 57 & .10 \\ 9 & 18 & 8 & \cdot 06\end{array}$ | $\begin{array}{llll}11 & 24 & 14 & 9 \\ 11 & 18 & 21 & \end{array}$ | $118 \cdot 90$ | 12 | $111832 \cdot 16$ | 04950 | $141 \cdot 00$ |
| 13 | $\begin{array}{rrrr}9 & 18 & 8 & 96 \\ 9 & 20 & 20 & \cdot 80\end{array}$ | $\begin{array}{llll}11 & 12 & 21 & 5\end{array}$ | $119 \cdot 65$ | 13 | $11 \begin{array}{llll}11 & 3 & 45 & 14\end{array}$ | $\begin{array}{llll}0 & 35 & 44.2\end{array}$ | $141 \cdot 13$ |
| 4 | $\begin{array}{cccc}9 & 20 & 20 & 80 \\ 9 & 20 & 30 & 60\end{array}$ | $\begin{array}{rrrr}11 & 0 & 23 & 6\end{array}$ | 120438 | 14 | $115558 \cdot 21$ | 0 21 $37 \cdot 4$ | $141 \cdot 25$ |
| 15 | $\begin{array}{lll}9 & 22 & 32 \cdot 61\end{array}$ | $10 \quad 4821 \cdot 3$ | $121 \cdot 08$ | 15 | $\begin{array}{llll}11 & 8 & 11 & 36\end{array}$ | N.0 $7 \quad 799$ | 141 -35 |
| 16 | $\begin{array}{llll}9 & 24 & 44 & 41\end{array}$ | $\begin{array}{llll}10 & 36 & 14 & 8\end{array}$ | $121 \cdot 82$ | 16 | $\begin{array}{llll}11 & 10 & 24 & 60\end{array}$ | S. 0 \% 6 | $141 \cdot 42$ |
| 17 | $\begin{array}{llll}9 & 26 & 56 & 18\end{array}$ | $\begin{array}{llll}10 & 24 & 3 & 9\end{array}$ | $122 \cdot 50$ | 17 | $111237 * 93$ | 0 $2046 \cdot 7$ | 141 -50 |
| 18 | $\begin{array}{llll}9 & 29 & 7 & 94\end{array}$ | $\begin{array}{llll}10 & 11 & 48 & 9\end{array}$ | 123 '20 | 18 | $\begin{array}{lllllllllllllllll}11 & 14 & 51 & 36\end{array}$ | $\begin{array}{lllll}0 & 34 & 5 & 5 \cdot 7\end{array}$ | 141 \% 55 |
| 19 | $\begin{array}{lllll}9 & 31 & 19 & 69\end{array}$ | $\begin{array}{lllll}9 & 59 & 29 & 7\end{array}$ | $123 \cdot 87$ | 19 | $\begin{array}{llll}11 & 17 & 4 & 88\end{array}$ | $\begin{array}{llll}0 & 49 & 5\end{array}$ | $141 \cdot 58$ |
| 20 | $\begin{array}{lllll}9 & 33 & 31 & 49\end{array}$ | $\begin{array}{llll}9 & 47 & 6 \cdot 5\end{array}$ | $124 \cdot 55$ | 20 | $\begin{array}{lllll}11 & 19 & 18 & 50\end{array}$ | $\begin{array}{lllll}1 & 3 & 14 & 5\end{array}$ | 141.62 |
| 21 | $\begin{array}{llll}9 & 35 & 43 & 13\end{array}$ | $\begin{array}{llll}9 & 34 & 39 & 2\end{array}$ | $125 \cdot 18$ | 21 | $\begin{array}{lllll}11 & 21 & 32 & 23\end{array}$ | $11724 \cdot 2$ | $141 \cdot 60$ |
| 22 | $\begin{array}{llll}9 & 37 & 54 & 84\end{array}$ | $\begin{array}{llll}9 & 22 & 8 \cdot 1\end{array}$ | $125 \cdot 85$ | 22 | $112346 \cdot 06$ | $13133 \cdot 8$ | 141 '62 |
| 23 | $\begin{array}{rrrr}9 & 40 & 6 & 54 \\ 9 & 40 & 18 \cdot 23\end{array}$ | $\begin{array}{lllll}9 & 9 & 33 & 0\end{array}$ | $126 \cdot 47$ | 23 | $\begin{array}{llll}11 & 25 & 59 & 99\end{array}$ | $\begin{array}{llll}1 & 45 & 43 & 5\end{array}$ | 141 '58 |
| 24 | $94218 * 23$ | N. $8 \quad 56 \quad 54 \cdot 2$ |  | 24 | 11 28 14.04 | S. $1 \quad 5953{ }^{\circ}$ |  |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.
Hour.

| Right Ascension. | Declination. | Dif. Dec. <br> for $10^{m}$. |
| :--- | :--- | :--- |

TUESDAY 5.

0
$\begin{array}{lllllllll}11 & 28 & 14 \cdot 04 & \text { S. } & 1 & 59 & 53 \cdot 0 & 141 \cdot 53\end{array}$ $\begin{array}{lllllll}11 & 30 & 28 & 21 & 2 & 14 & g \\ 1 & 2 & 141 \cdot 48\end{array}$
$113242 \cdot 48$ $\begin{array}{lllll}2 & 28 & 11 & 1 & 141 * 42\end{array}$
$113456 \quad 88$
$\begin{array}{lll}11 & 37 & 11\end{array} \cdot 40$
11392605
114140 -82
$\begin{array}{llll}11 & 43 & 55 & 72\end{array}$
$\begin{array}{llll}11 & 46 & 10 & 76\end{array}$
$114825 \cdot 92$
$115041: 23$
$\begin{array}{llll}11 & 52 & 56 & 67\end{array}$
$\begin{array}{llll}11 & 55 & 12 & 26\end{array}$
$\begin{array}{llll}11 & 57 & 27 & 99\end{array}$
$\begin{array}{llll}11 & 59 & 43 & 87\end{array}$
$\begin{array}{lll}12 & 1 & 5 y \\ 12 & 91\end{array}$
$12+16 \cdot 09$
$12 \quad 6 \quad 39 \cdot 43$

| 12 | 8 | 48 |
| :--- | :--- | :--- |
|  | 93 |  |

$1211 \quad 5 \cdot 59$
$\begin{array}{llll}12 & 13 & 22 & 41\end{array}$
$\begin{array}{llll}12 & 15 & 39 & 39\end{array}$
$1217 \quad 56 \quad 54$
 WEDNESDAY 6.

| 0 | 12 22 31-36 | S. 734496 | $135 \cdot 78$ |
| :---: | :---: | :---: | :---: |
| 1 | 12.2449 .03 | 74824.3 | 135 '35 |
| 2 | $1227 \quad 6: 87$ | $\begin{array}{lllll}8 & 1 & 56 & 4\end{array}$ | $134 \cdot 90$ |
| 3 | 12 2y 24 *8 | $8 \quad 15 \quad 95 \cdot 8$ | 134 42 |
| 4 | $123143 * 0 y$ | $82852 \cdot 3$ | $133 \cdot 92$ |
| 5 | 1234174 | $849215 \cdot 8$ | $133 \cdot 42$ |
| 6 | $123680 \cdot 04$ | $8 \quad 55 \quad 36 \quad 3$ | $132 \cdot 88$ |
| 7 | $\begin{array}{lllllllllll}12 & 38 & 38 & 79\end{array}$ | $\begin{array}{lllll}9 & 8 & 53 & 6\end{array}$ | $132 \cdot 35$ |
| 8 | $124057 \quad 73$ | 9 92 $7 \cdot 7$ | $131 \cdot 80$ |
| 9 | $124316 \cdot 86$ | $\begin{array}{llll}9 & 35 & 18 & 5\end{array}$ | $131 \cdot 22$ |
| 10 | $124536 \cdot 19$ | 9 48 25 '8 | $130 \cdot 63$ |
| 11 | $1247 \quad 55 \cdot 70$ | $10 \quad 129.6$ | $130 \cdot 03$ |
| 12 | 1250 | $10 \begin{array}{lll}10 & 14 & 29\end{array}$ | $129 * 2$ |
| 13 | $125235 \cdot 32$ | $102726 \cdot 3$ | $128 \cdot 77$ |
| 14 | $125455 \cdot 42$ | $10 \quad 40 \quad 18{ }^{\circ} 9$ | $128 \cdot 12$ |
| 15 | $125715 \cdot 72$ | $10 \quad 53 \quad 7 \quad 6$ | $127 \cdot 45$ |
| 16 | $125936 \cdot 29$ | 11 5 52 3 | $126 \cdot 77$ |
| 17 | $\begin{array}{llll}13 & 1 & 56 & 93\end{array}$ | $\begin{array}{llll}11 & 18 & 39 & 9\end{array}$ | $126 \cdot 07$ |
| 18 | $\begin{array}{llll}13 & 4 & 17 & 84\end{array}$ | 11319 | $125 \cdot 35$ |
| 19 | $\begin{array}{llll}13 & 6 & 38 & 95\end{array}$ | $\begin{array}{lllll}11 & 43 & 41 & 4\end{array}$ | $124 \cdot 62$ |
| 20 | $\begin{array}{lll}13 & 9 & 0 \\ 13 & 26\end{array}$ | $11 \begin{array}{lll}11 & 56 & 9\end{array}$ | $123 \cdot 87$ |
| 21 | $\begin{array}{llll}13 & 11 & 21 \cdot 78\end{array}$ | 128838 | $123 \cdot 10$ |
| 22 | $\begin{array}{lllll}13 & 13 & 43 & 5\end{array}$ | $129050 \quad 9$ | $122 \cdot 32$ |
| 23 | $\begin{array}{llll}13 & 16 & 5 & 45\end{array}$ | 123348 | 121 '53 |
| 24 | $\begin{array}{llll}13 & 18 & 27 & 59\end{array}$ | S.12 $4514{ }^{\circ}$ |  |


| Hour. | Right Ascension. | Declination. | Dir, Dec. <br> for $10^{m}$. |
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|  | ${ }^{\text {h m }}$ | - | 11 |
| :---: | :---: | :---: | :---: |
| 0 | $\begin{array}{lllll}13 & 18 & 27 & 59\end{array}$ | S. $1 \sim 4514{ }^{\prime} 0$ | $120 \cdot 72$ |
| 1 | $\begin{array}{llll}13 & 20 & 49 & 94\end{array}$ | $125718 \cdot 3$ | 119 *88 |
| 2 | $\begin{array}{llll}13 & 23 & 12 & 50\end{array}$ | $\begin{array}{llll}13 & 9 & 17 & 6\end{array}$ | $119 \cdot 05$ |
| 3 | $\begin{array}{lllll}13 & 25 & 35 & 28\end{array}$ | 132111.9 | $118 \cdot 18$ |
| 4 | $13 \quad 2758 \cdot 26$ | $13331{ }^{13} 0$ | 117:32 |
| 5 | 1330 21 46 | $134444 \cdot 9$ | $116 \cdot 43$ |
| 6 | $\begin{array}{llll}13 & 32 & 44 & 86\end{array}$ | $135623 \quad 5$ | $115 \cdot 52$ |
| 7 | $\begin{array}{llll}13 & 35 & 8 & 48\end{array}$ | 14756 | $114 \cdot 62$ |
| 8 | $\begin{array}{llllll}13 & 37 & 32 & 31\end{array}$ | $\begin{array}{lllll}14 & 19 & 24 & 3\end{array}$ | $113 \cdot 67$ |
| 9 | $\begin{array}{llllll}13 & 39 & 56 & 35\end{array}$ | $1430 \quad 46 \quad 3$ | $112 \cdot 73$ |
| 10 | $\begin{array}{lllll}13 & 42 & 20 & 61\end{array}$ | $14420 \cdot 7$ | $111 \cdot 77$ |
| 11 | $\begin{array}{lllll}13 & 44 & 45 & 07\end{array}$ | $1455313 * 3$ | $110 \cdot 78$ |
| 12 | $\begin{array}{llll}13 & 47 & 9 & 75\end{array}$ | 15 4 18* 0 | 109 -80 |
| 13 | 134934.64 | $\begin{array}{llll}15 & 15 & 16 & \text { 'v }\end{array}$ | 108•\% |
| 14 | $\begin{array}{llll}13 & 51 & 59\end{array}{ }^{1} 74$ | $15 \quad 26 \quad 9 \cdot 5$ | $107 \cdot 78$ |
| 15 | 13 54 25 04 | $1536 \quad 56 \cdot 2$ | $106 \cdot 73$ |
| 16 | $\begin{array}{llll}13 & 56 & 50 & 56\end{array}$ | 154736 \% | $105 \cdot 70$ |
| 17 | $\begin{array}{lllll}13 & 59 & 16 & 28\end{array}$ | $15 \quad 58 \quad 10$ '8 | $104 \cdot 63$ |
| 18 | $141842 \cdot 20$ | 16 s 3 s '6 | $103 \cdot 55$ |
| 19 | $14 \quad 4 \quad 8 \quad 36$ | $\begin{array}{llllll}16 & 18 & 59\end{array}$ | $102 \cdot 47$ |
| 20 | $14 \quad 6 \quad 34 \cdot 70$ | $\begin{array}{llll}16 & 29 & 14 & 7\end{array}$ | $101 \cdot 37$ |
| 21 | $14 \quad 9 \quad 1 \geqslant 25$ | $163922 \cdot 9$ | $100 \cdot 25$ |
| 22 | $141198{ }^{14} 100$ | $16 \quad 49$ 24 4 | 99 13 |
| 23 | 141354.95 | S. 16 | 97'98 |
| FRIDAY 8. |  |  |  |
| 0 | $\begin{array}{lll}14 & 16 \quad 22 \cdot 10\end{array}$ | S. $17 \quad 9 \quad 7{ }^{\prime \prime}$ | $96 \cdot 83$ |
| 1 | $\begin{array}{lllll}14 & 18 & 49 & 45\end{array}$ | 1718481 | $95 \cdot 67$ |
| 2 | $\begin{array}{llll}14 & 21 & 17\end{array}{ }^{\prime} 00$ | $172822 \cdot 1$ | 94'48 |
| 3 | $14.9344 \cdot 74$ | $173749 \cdot 0$ | 93-30 |
| 4 | $\begin{array}{llll}14 & 26 & 12 & 67\end{array}$ | 174788 | 92 10 |
| 5 | $142840 \cdot 79$ | $17 \quad 56214$ | $90 \cdot 88$ |
| 6 | 143196 | $\begin{array}{llll}18 & 5 & 26 & 7\end{array}$ | $89 \cdot 65$ |
| 7 | $143337 \cdot 60$ | $18 \cdot 14 \begin{array}{lll}18 & 24 & 6\end{array}$ | 88-42 |
| 8 | $1436 \quad 6 \cdot 28$ | $18 \quad 2315 \cdot 1$ | $87 \cdot 17$ |
| 9 | 14 38 $35 \cdot 14$ | $183158 \cdot 1$ | \$5 -90 |
| 10 | $14414 \cdot 18$ | $\begin{array}{llllllllllllll}18 & 40 & 33 & 5\end{array}$ | 84.63 |
| 11 | $1443 \quad 33 \cdot 39$ | 15 49 1 3 | $83 \cdot 35$ |
| 12 | $1446 \geq 2 \cdot 78$ | $\begin{array}{lllllllllll}18 & 5 & 21 & 4\end{array}$ | $82 \cdot 05$ |
| 13 | 144832.34 | $19)$ | $80 \cdot 75$ |
| 14 | 1451206 | 191338 | 79*43 |
| 15 | 14.53131 .95 | $192134 \cdot 8$ | $78 \cdot 12$ |
| 16 | $1456 \quad 200$ | $192923 \cdot 5$ | $76 \cdot 7 \mathrm{~s}$ |
| 17 | $145832 \cdot 21$ | 193742 | $75 \times 43$ |
| 18 | $15,1 \times 57$ | $19) 4436 \cdot 8$ | $74 \cdot 08$ |
| 19 | $\begin{array}{llll}15 & 3 & 33 & 07\end{array}$ | 195213 | $72 \cdot 72$ |
| 20 | $\begin{array}{lll}15 & 6 & 3\end{array} 73$ | $19) 59176$ | $71 \cdot 35$ |
| 21 | $\begin{array}{lllll}15 & 8 & 34 & 53\end{array}$ | $20 \quad 6 \quad 257$ | $69 \cdot 97$ |
| 29 | $\begin{array}{llll}15 & 11 & 5 & 47\end{array}$ | $20 \quad 13 \quad 25 \quad 5$ | $68 \cdot 58$ |
| 23 | $\begin{array}{llll}15 & 13 & 36 & 54\end{array}$ | $20 \quad 20 \quad 17 \cdot 0$ | $67 \cdot 18$ |
| 24 | $\begin{array}{lllll}15 & 16 & 7 & 74\end{array}$ | S. $20 \quad 27 \quad 0 \cdot 1$ |  |

## FRIDAY 8.

THURSDAY 7.

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Hour. | Right Ascension. | Declination. | Difr. Dee, for $10^{\circ \mathrm{m}}$. | Hour. | Right Ascension | Declination. | Dim. Dee for $10^{\text {on }}$. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | SATURDAY 9. |  |  |  | MONDAY 11. |  |  |
|  |  |  |  |  | 7 |  | $6 \cdot$ |
| 0 | $15 \quad 16$ | $\begin{array}{llll}\text { S. } 20 & 27 & 0 & 1\end{array}$ | $65 \cdot 8$ | 0 | 1718 |  | 6 |
| 1 | $\begin{array}{lllll}15 & 18 & 39 & 07\end{array}$ | $2033 \quad 34 \cdot 8$ | $64 \cdot 38$ | 1 | $\begin{array}{lllll}17 & 20 & 31 & 65\end{array}$ | 225444 '5 | 75 |
| 2 |  | $20 \quad 40 \quad 1 \quad 1$ | $62 \cdot 95$ | 2 | $\begin{array}{llll}17 & 23 & 2 & 71\end{array}$ | 22.53594 | $9 \cdot 05$ |
| 3 | $15 \quad 23 \quad 42 \cdot 09$ | $20 \quad 46 \quad 18 \cdot 8$ | $61 \cdot 52$ | 3 | $\begin{array}{llll}17 & 25 & 33 & 62\end{array}$ | $\begin{array}{llll}22 & 53 & 4 & 8\end{array}$ | 10 |
| 4 | $15 \quad 2613 \cdot 78$ | $2052 \quad 27 \cdot 9$ | $60 \cdot 10$ | 4 | $\begin{array}{llll}17 & 28 & 4 & 37\end{array}$ | 225217 | $11 \cdot 98$ |
| 5 | $15 \quad 2845 \cdot 57$ | 205828.5 | $58 \cdot 65$ | 5 | $173034 \cdot 97$ | $225049 \cdot 8$ | $13 \cdot 45$ |
| 6 | 15317174 | $21 \quad 420 \cdot 4$ | 57 -20 | 6 | $17 \quad 33 \quad 5 \cdot 40$ | 224929.1 | $14 \cdot 90$ |
| 7 | $\begin{array}{llllll}15 & 33 & 49 & 47\end{array}$ | $\begin{array}{llll}21 & 10 & 3 & 6\end{array}$ | $55 \%$ | 7 | $\begin{array}{llllllllllll}17 & 35 & 35 & 66\end{array}$ | 2247597 | $16 \cdot 37$ |
| 8 | $15 \quad 36 \quad 21 \cdot 56$ | $\begin{array}{lllll}21 & 15 & 38 \cdot 1\end{array}$ | 54 | 8 | $\begin{array}{llll}17 & 38 & 5 & 75\end{array}$ | $22.46{ }^{2} 211^{\prime} 5$ | 17-80 |
| 9 |  | $\begin{array}{llll}21 & 21 & 3\end{array}$ | $52 \cdot 82$ | 9 | $1740 \quad 35 \cdot 66$ | $224434 \cdot 7$ | $19 \cdot 25$ |
| 10 | 154126.00 | $21 \quad 2620: 8$ | $51 \cdot 35$ | 10 | $\begin{array}{llll}17 & 43 & 5 & 38\end{array}$ | $224239 \cdot 2$ | $20 \cdot 68$ |
| 11 | $\begin{array}{lllllllllll}15 & 43 & 58 & 35\end{array}$ | 213128.9 | $49 \cdot 88$ | 11 | $1745 \quad 34.92$ |  | $22 \cdot 10$ |
| 12 |  | $213628 \cdot 2$ | $48 \cdot 38$ | 12 | $1748 \quad 4: 26$ | $2238822 \cdot 5$ | $23 \cdot 53$ |
| 13 | $\begin{array}{llll}15 & 49 & 3 & 26\end{array}$ | $214118 \cdot 5$ | $46 \cdot 90$ | 13 | $175033 \cdot 40$ | 2236113 | 93 |
| 14 | $\begin{array}{lllll}15 & 51 & 35 & 81\end{array}$ | $21 \begin{array}{llllll} & 45 & 59 & 9\end{array}$ | $45 \cdot 42$ | 14 | $\begin{array}{llll}17 & 53 & 2 & 34\end{array}$ | 22333117 | $26 \cdot 35$ |
| 15 | $\begin{array}{llll}15 & 54 & 8 & 42\end{array}$ | $215032 \cdot 4$ | 43 | 15 |  | $223053 \%$ | $27 \% 5$ |
| 16 | $\begin{array}{llllllll}15 & 56 & 41 & 09\end{array}$ | $215455 * 9$ | $42 \cdot 42$ | 16 | 1717 59 | $22.287^{-1}$ | $29 \cdot 13$ |
| 17 | $\begin{array}{llll}15 & 59 & 13 & 80\end{array}$ | $215910{ }^{\circ} 4$ | $40 \cdot 92$ | 17 | $\begin{array}{llll}18 & 0 & 27 & 88\end{array}$ | $22.2512 \cdot 3$ | 30-52 |
| 18 | $\begin{array}{llll}16 & 1 & 46 & 56\end{array}$ | $22.315 *$ | $39 \div 40$ | 18 | $18 \quad 2 \quad 55 \cdot 96$ | 22.2298 | $31 \cdot 90$ |
| 19 | $\begin{array}{lll}16 & 4 & 19\end{array}{ }^{165}$ | $22712 \cdot 3$ | 37'90 | 19 | $\begin{array}{llll}18 & 5 & 23 & 81\end{array}$ | 221857.8 | $33 \cdot 27$ |
| 20 | $\begin{array}{llll}16 & 6 & 52 \cdot 18\end{array}$ | $221059 \cdot 7$ | $36 \cdot 38$ | 20 | $\begin{array}{lllllllll}18 & 7 & 51 & 44\end{array}$ | 221538 | . 63 |
| 21 | $\begin{array}{llll}16 & 9 & 25 & 03\end{array}$ | 221438 '0 | $34 \cdot 87$ | 21 | $\begin{array}{lllll}18 & 10 & 18 & 83\end{array}$ | $221210{ }^{\circ} 4$ | 35.97 |
| 22 | $\begin{array}{llll}16 & 11 & 57 & 90\end{array}$ | $2218 \quad 7 \cdot 2$ | 33 | 22 | $18 \quad 12 \quad 45 \cdot 98$ | 4 | $37 \cdot 33$ |
| 23 | $1614 \quad 30 \cdot 79$ | S. 22 21 $27 \cdot 3$ | $31 \cdot 83$ | 23 | $\begin{array}{llll}18 & 15 & 12 & 89\end{array}$ | 22450 | $38 \cdot 65$ |
|  | $\text { SUNDAY } 10 .$ |  |  | TUESDAY 12. |  |  |  |
| 0 | $1617 \quad 3 \cdot 68$ | S. 222438.3 | $30 \cdot 32$ | 0 | $181739 \cdot 56$ | S. $220058 \cdot 7$ | 39 '98 |
| 1 | $\begin{array}{llllllllll}16 & 19 & 36 & 58\end{array}$ | $22.270{ }^{2}$ | $28 \cdot 78$ | 1 | $\begin{array}{llll}18 & 20 & 5 & 58\end{array}$ | 215658.8 | $41 \cdot 30$ |
| 2 | $\begin{array}{llll}16 & 22 & 9 & 48\end{array}$ | $223032 \cdot 9$ | $27 \cdot 27$ | 2 | $\begin{array}{llll}18 & 22 & 32 & 15\end{array}$ | 2152510 | 49.62 |
| 3 | $162442 \cdot 37$ | $223316{ }^{5}$ | $25 \cdot 75$ | 3 | $18 \quad 2458 \cdot 06$ | $214835 \cdot 3$ | 43 '50 |
| 4 | $16 \quad 2715 \cdot 24$ | $223551{ }^{\circ} 0$ | $24 \cdot 22$ | 4 | 1827 23 71 | 214411.9 | $45 \times 2$ |
| 5 | $16 \quad 2948 * 09$ | $223816 \cdot 3$ | 22.68 | 5 | 18 29 <br> 18 49 | $213940 \%$ | $46 \cdot 47$ |
| 6 | $1632 \quad 20 \cdot 92$ | $224032 \cdot 4$ | $21 \cdot 15$ | 6 | $183214 \cdot 22$ | 21351 | $47 \% 5$ |
| 7 | 16345371 | $224239 \cdot 3$ | $19 \cdot 63$ | 7 | $1834 \begin{array}{llll}18 & 08\end{array}$ | $213015 \cdot 4$ | $49 \% 0$ |
| 8 | $163726 \cdot 46$ | 2244371 | $18 \cdot 12$ | 8 | $18 \quad 37 \quad 3 \quad 66$ | 212521.4 | $50 \cdot 27$ |
| 9 |  | $224625 \cdot 8$ | $16 \cdot 57$ | 9 | $18 \quad 3927.97$ | $\begin{array}{llll}21 & 20 & 19 & 8\end{array}$ | 51.50 |
| 10 | $164231 \cdot 83$ | $2248 \quad 5 \cdot 2$ | $16 \cdot 5$ | 10 | $184152 \cdot 00$ | $211510 \cdot 8$ | $52 \cdot 72$ |
| 11 | $16454 \cdot 43$ | $224935 \cdot 5$ | $13 \cdot 53$ | 11 | $1844 \quad 15 \cdot 75$ | $\begin{array}{lllll}21 & 9 & 54 & 5\end{array}$ | $53 \cdot 95$ |
| 12 | $164736-97$ | 29 50567 | 12 \%00 | 12 | 184639.29 | 21430 | $55 \cdot 15$ |
| 13 | $16 \quad 50 \quad 9 \cdot 44$ | $2252 \quad 87$ | 10.47 | 13 | $18 \quad 49 \quad 2 \cdot 40$ | 20 205859 | $56 \cdot 35$ |
| 14 | $165241 \cdot 84$ | 22531115 | $8 \cdot 97$ | 14 | $18 \quad 5125 \cdot 30$ | 2053 | 57-55 |
| 15 | $165514 \cdot 16$ | 2254 | $7 \cdot 43$ | 15 | $18 \quad 5347 \cdot 91$ | 204736 | $58 \cdot 72$ |
| 16 | $165746 \cdot 39$ | 225449.9 | 5.92 | 16 | $\begin{array}{llllllll}18 & 56 & 10 & 22\end{array}$ | 20 $\quad 21144 \%$ | $59 \cdot 90$ |
| 17 | $17{ }_{17} 0018 \cdot 53$ | 22551254 | 4 4-42 | 17 | $185832 \cdot 24$ | $1 \quad 203544$. | 61.03 |
| 18 | $\begin{array}{lllll}17 & 2 & 50 & 57\end{array}$ | $\begin{array}{lllllll}22 & 55 & 51 & 9\end{array}$ | 2 | 18 | 19 00 53.97 | $7 \quad 2009938.6$ | $62 \cdot 0$ |
| 19 | $17 \quad 5 \quad 22 \cdot 51$ | 225650 | 20 | 19 | $\begin{array}{llll}19 & 3 & 15 & 40\end{array}$ | 20 20325 | $4{ }^{63} 32$ |
| 20 | $17 \quad 7 \quad 54 \cdot 34$ | 225617.6 | - 0.12 | 20 | 19 19 $36 \cdot 54$ | $1 \quad 20 \begin{array}{lll}17 & 5\end{array}$ | $64 \div 7$ |
| 21 | $171026 \cdot 05$ | 22.56169 | - $1 \cdot 62$ | 21 | $19 \quad 757: 37$ | $7 \quad 2001038 \cdot 7$ | $65 \cdot 57$ |
| 22 | $17 \quad 12 \quad 57 \cdot 65$ |  | - $3 \cdot 10$ | 22 | 191017.91 | $1 \begin{array}{llll} & 20 & 4 & 5 \cdot 3\end{array}$ | 66-67 |
| 23 | $171529 \cdot 12$ | 22 5558 | - 4.60 | 23 | 19 12 $38 \cdot 14$ | $4 \quad 195725 \cdot 3$ | $67 \cdot 77$ |
| 2 | $\begin{array}{llll}17 & 18 & 0 \cdot 45\end{array}$ | S. 225521.0 |  | 24 | 191458.07 | $7 \mathrm{~S} .195038 \cdot 7$ |  |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Ho | Right Ascension. | Declination. | $\begin{gathered} \text { Diff, Dec. } \\ \text { for } 10 \mathrm{ow} \text {, } \end{gathered}$ | Hour. | Right Ascension. | Declination. | Diff, Dec. for $10^{\text {ma }}$, |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | HEDNESDAY 13. |  |  |  | FRIDAY 15. |  |  |
|  | h m ${ }^{\text {m }}$ | S. $19^{\circ} 50 \cdot 38^{\prime \prime}$ |  |  | h m s <br> 0   <br> 0 0  |  |  |
| 0 | $19 \quad 14 \quad 58 \quad 07$ |  | $68 \cdot 35$ | 0 | $\begin{array}{llll}21 & 0 & 57 & 97 \\ 21 & 3 & 3 & .4\end{array}$ |  | $107 \cdot 37$ |
| 1 | 19 $17 \quad 17 \cdot 70$ | 1943 | $69 \cdot 92$ | 1 | 2133 | 1 |  |
| $\underline{\square}$ | 19) $1937 \quad 02$ | 193646 | $70 \cdot 97$ | 2 | 215 | 121738.0 | 42 |
| 3 | 192156 | 19 29 $40 \cdot 3$ | 72.0 | 3 | $\begin{array}{llll}21 & 7 & 13 & 61\end{array}$ | $126047{ }_{12}^{12}$ | -93 |
| 4 | $192414 \cdot 74$ | 192228.2 | $73 \cdot 0$ | 4 | $219518 * 32$ | 11155 | 109•42 |
| 5 | $19 \quad 9633 \cdot 14$ | 19 15 9.8 | $74 \cdot 08$ | 5 | $21.1122 \cdot 77$ | $\begin{array}{llll}11 & 44 & 57\end{array}$ | 90 |
| 6 | 19 28 51:23 | 19745 | $75 \cdot 10$ | 6 | $\begin{array}{llll}91 & 13 & 26 & 98\end{array}$ | $113358{ }^{11}$ | $10 \cdot 37$ |
| 7 | $19319{ }^{19} 3$ | $190014 \cdot 7$ | $76 \cdot 10$ | 7 | $\begin{array}{llll}21 & 15 & 30 & * 95\end{array}$ | 112255 | $110 \cdot 85$ |
| 8 | $1933 \quad 26 \cdot 49$ | $18 \quad 5238 \cdot 1$ | $77 \cdot 08$ | 8 | 21.1734 .67 | $\begin{array}{lllll}11 & 11 & 50\end{array}$ | 11 '28 |
| 9 | $19) 3543 \quad 66$ | 184455 | $78 \cdot 08$ | 9 | $\begin{array}{lllll}21 & 19 & 38 \cdot 16\end{array}$ | $110043{ }^{11} 0$ | $111 \cdot 73$ |
| 10 | 1938 0.52 | 1837 | 79.03 | 10 | $212141 \cdot 40$ | 104932.6 | $112 \cdot 17$ |
| 11 | $1940 \quad 17 \quad 06$ | $\begin{array}{llll}18 & 29 & 12 & 9\end{array}$ | $80^{\circ} 00$ | 11 | $21.2344 \cdot 42$ | $\begin{array}{llll}10 & 38 & 19 & 6\end{array}$ | $12 \cdot 58$ |
| 12 | $19) 4233 \cdot 30$ | $\begin{array}{llll}18 & 21 & 12 & 9\end{array}$ | 80.95 | 12 | $21 \times 547 \cdot 20$ | $10 \quad 27 \quad 4 \cdot 1$ | 13 •00 |
| 13 | $194449 \cdot 23$ | $\begin{array}{llll}18 & 13 & 7 & \\ 18\end{array}$ | $81 \cdot 37$ | 13 | 21274976 | $10 \begin{array}{lll}10 & 15 & 46 \cdot 1\end{array}$ | 113 '38 |
| 14 | 1947 4 85 | $18456{ }^{18}$ | 82'80 | 14 | 212952.09 | $10 \quad 425 \cdot 8$ | $13 \cdot 78$ |
| 15 | $194920 \cdot 15$ | $175639 \%$ | $83 \cdot 72$ | 15 | 213154 | $\begin{array}{lll}9 & 53 & 3 \cdot 1\end{array}$ | $\cdot 17$ |
| 16 | $1955135 \cdot 15$ | $\begin{array}{llll}17 & 48 & 16 & 9\end{array}$ | $84 \cdot 62$ | 16 | $\begin{array}{llll}21 & 33 & 56 & .09\end{array}$ | $\begin{array}{lllll}9 & 41 & 38 & 1\end{array}$ | $14 \cdot 53$ |
| 17 | 19 53 49.84 | $\begin{array}{llll}17 & 39 & 49 & \cdot 2\end{array}$ | $85 \cdot 50$ | 17 | $\begin{array}{lllll}21 & 35 & 57 & 76\end{array}$ |  | 114 88 |
| 18 | 19564 | $17 \begin{array}{lll}17 & 31 & 16\end{array}$ | $86 \cdot 37$ | 18 | $21 \begin{array}{llll}27 & 59 & 21\end{array}$ | 9 18 41.6 | 115 25 |
| 19 | $1958818 \times 30$ | $172238{ }^{\circ} 0$ | $87 \cdot 25$ | 19 | $2140 \quad 0 \cdot 46$ | 9710 | $115 \cdot 57$ |
| 20 | $20 \quad 0 \quad 32 \cdot 07$ | $\begin{array}{lllll}17 & 13 & 54 & 5\end{array}$ | 88 10 | 20 | $2142 \quad 150$ | $85536 \quad 7$ | -92 |
| 21 | $20 \quad 2 \quad 45 \cdot 53$ | 175 | $88 \cdot 93$ | 21 | $2144 \quad 233$ | 84412 | 3 |
| 22 | $20 \quad 4 \quad 58 \cdot 69$ | 165612 | $89 \cdot 77$ | 22 | $2146 \quad 2 \cdot 96$ | S 32 23's | 53 |
| 23 | $20711 \cdot 54$ | S. 164713 | $90 * 58$ | 23 | $\begin{array}{llr}21 & 48 & 3 \cdot 39 \\ & \text { SATUR }\end{array}$ | S. $8 \geq 0044 \%$ $R D A Y 16$. | $1116 \cdot 83$ |
|  | THURSDAY 14. |  |  | SATURDAY 16. |  |  |  |
| 0 | $\begin{array}{lll}20 & 9 & 24.09 \\ 20 & 11 & 36 \cdot 3.4\end{array}$ | $\begin{array}{rrrr}\text { S. } 16 & 38 & 10 & 2 \\ 16 & 99 & 1.8\end{array}$ | $91 \cdot 40$ $92 \cdot 18$ | 0 | $2152 \quad 3 \cdot 66$ | $\begin{array}{rrr}8 & 9 & 3\end{array}$ | $\begin{aligned} & 117 \cdot 13 \\ & 117 \cdot 40 \end{aligned}$ |
| 1 | $20.1136 \cdot 34$ | $\begin{array}{llll}16 & 99 & 1 & 8\end{array}$ | $92 \cdot 18$ | 2 | $\begin{array}{lll}21 & 52 & 3 \\ 21 & 54 & 3 \cdot 51\end{array}$ | $\begin{array}{lll}7 & 57 & 20 \cdot 8 \\ 7 & 45 & 36\end{array}$ | $117 \cdot 67$ |
| 2 | $\begin{array}{llll}20 & 13 & 48 & 29\end{array}$ | $\begin{array}{llll}16 & 19 & 48 & 7 \\ 16 & 10 & 30 & \cdot 9\end{array}$ | $92 \cdot 97$ $93 \cdot 75$ | 2 | $\begin{array}{lll}21 & 54 & 3 \cdot 51 \\ 21 & 56 & 3 \cdot 17\end{array}$ | $\begin{array}{llll}7 & 45 & 36 & * \\ 7 & 33 & 50 & 4\end{array}$ | $\begin{aligned} & 117.67 \\ & 117.95 \end{aligned}$ |
| 3 | $20.15059 \% 3$ | $\begin{array}{lllll}16 & 10 & 30 & 9\end{array}$ | $93 \cdot 75$ $94 \cdot 58$ | 3 | $\begin{array}{lll}21 & 56 & 3 \cdot 17 \\ 21 & 58 & 2.65\end{array}$ | $\begin{array}{llll}7 & 33 & 50 & 4 \\ 7 & 22 & 2 \cdot 7\end{array}$ | $117 \cdot 95$ $118 \cdot 18$ |
| 4 | $20 \begin{array}{llllll} & 18 & 11 & 28\end{array}$ | $\begin{array}{llrr}16 & 1 & 8 & 4\end{array}$ | $94 *$ | 4 | $\begin{array}{lrr}21 & 58 & 2.65 \\ 0 . & 0 & 1.94\end{array}$ | $\begin{array}{rrrr}7 & 22 & 2 \cdot 7 \\ 7 & 10 & 13\end{array}$ | $118 \cdot 18$ $118 \cdot 43$ |
| 5 | $20 \quad 20 \quad 22 \cdot 33$ | $\begin{array}{cccc}15 & 51 & 41 & 3 \\ 15 & 4 & 1\end{array}$ | $95 \cdot 2$ | 6 | $\begin{array}{lll}22 & 0 & 1 \\ 2 & 2 & 1 \\ 2\end{array}$ | $\begin{array}{llll}7 & 10 & 13 & 6 \\ 6 & 58 & 23 & 0\end{array}$ | $\begin{aligned} & 118 \cdot 43 \\ & 118 \cdot 65 \end{aligned}$ |
| 6 | $\begin{array}{llll}20 & 22 & 33 & .09\end{array}$ | $\begin{array}{rrr}15 & 42 & 9 \\ 15 & 89 & 33\end{array}$ | $96 \cdot 00$ $96 \cdot 78$ | 6 | 22 2 1 <br> 22 4 0 <br> 00   | $\begin{array}{llll}6 & 58 & 23 & 0 \\ 6 & 46 & 31 & 1\end{array}$ | $118 \cdot 65$ 118.88 119.10 |
|  | $\begin{array}{lllll}20 & 24 & 43 & 55\end{array}$ | $\begin{array}{llll}15 & 42 & 33 & 8 \\ 15 & 02 & 53 & 5\end{array}$ | $96 \cdot 72$ $97 \cdot 45$ | 8 | $\begin{array}{llrr}22 & 4 & 0 & \cdot 00 \\ 29 & 5 & 58 & 77\end{array}$ | $\begin{array}{lll}6 & 46 & 31 \cdot 1 \\ 6 & 34 & 37\end{array}$ | $118 \cdot 88$ 119 10 |
| 8 | $20) 26 \quad 53 \cdot 71$ | $\begin{array}{lll}15 & 22 & 53 \\ 15 & 13 & 8\end{array}$ | $97 \cdot 45$ | 8 | $\begin{array}{llll}22 & 5 & 58 & 77 \\ 22 & 7 & 57 & 36\end{array}$ | $\begin{array}{llll}6 & 34 & 37 \\ 6 & 22 & 43 & \\ 6\end{array}$ | $119 \cdot 10$ 119 |
| 9 | $\begin{array}{llll}20 & 29 & 3 & 59\end{array}$ | $\begin{array}{rrr}15 & 13 & 8 \\ 15 & 3 & 9\end{array}$ | 98 | 9 | 2275736 | $62243: 2$ | $119 \cdot 28$ |
| 10 | $\begin{array}{llll}20 & 31 & 13 & 17\end{array}$ | $\begin{array}{rrr}15 & 3 & 20 \\ 14 & -3 & 26\end{array}$ | 98 | 10 | $\begin{array}{rrrr}29 & 9 & 55 & 79 \\ 22 & 11 & 54 & \cdot 06\end{array}$ | $5 \quad 58 \quad 50 \cdot 5$ | 119.50 |
| 11 | $20 \begin{array}{llll}23 & 22 & 47\end{array}$ | $\begin{array}{llll}14 & 53 & 26 & 9\end{array}$ | - $99 \times$ | 11 |  | $\begin{array}{llll}5 & 58 & 50 & 5 \\ 5 & 46 & 59 & \end{array}$ |  |
| 12 | $2083531 \cdot 48$ | $\begin{array}{lll}14 & 43 & 29 \\ 14 & 38 & 88\end{array}$ | 8 $100 \cdot 18$ | 12 | 7 | $\begin{array}{lllll}5 & 46 & 52 & 53\end{array}$ | 20 02 |
| 13 | 20.3740 | 143328 | 100 'g | 13 |  | 22 $53 \cdot 3$ | $120 \cdot 17$ |
| 14 | 20 $3948 \cdot 65$ | 14 23 23 -6 | 101 ${ }^{\circ}$ | 14 | 7 | , | $120 \cdot 32$ |
| 15 | $20 \begin{array}{llll}21 & 56 & 82\end{array}$ | $\begin{array}{llll}14 & 13 & 14 & 6\end{array}$ | - $102 \cdot 13$ | 15 | 7 |  | $120 \cdot 45$ |
| 16 | $20 \cdot 44 \quad 4 \cdot 70$ | $14 \quad 3 \quad 1$ '8 | - $102 \cdot 77$ | 16 17 |  |  | $20 \cdot 58$ |
| 17 | $20 \begin{array}{llll}20 & 46 & 12 & 31\end{array}$ | $\begin{array}{llll}13 & 52 & 45\end{array}$ | $2103 \cdot 38$ | 17 | $\begin{array}{llll}22 & 23 & 40 & 42 \\ 92 & 25 & 37.63\end{array}$ |  | 120-38 |
| 18 | $\begin{array}{lllll}20 & 48 & 19 & 64\end{array}$ | $134224^{1} 9$ | ) $103 \cdot 98$ |  | $\begin{array}{llll}22 & 25 & 37 & 63 \\ 29 & 27 & 34 & 70\end{array}$ |  | $120 \cdot 82$ |
| 19 | $20 \quad 50 \times 6 \cdot 70$ | 13 32 1 ${ }^{13}$ | 104 57 | 19 00 | 0 |  | 20-90 |
| 90 | $\begin{array}{llllll}20 & 52 & 33 & 48\end{array}$ | $\begin{array}{llll}13 & 21 & 33 & 6\end{array}$ | 6 $105 \cdot 15$ | 20 21 | 29 |  | 21.00 |
| 21 | $20 \times 5440 \cdot 00$ | $\begin{array}{llll}13 & 11 & 2 & 7\end{array}$ | 7 $105 \cdot 73$ <br> $106 \cdot 28$  | - | $\begin{array}{llll}2 \sim & 31 & 28 & 44 \\ 29 & 33 & 25 & 12\end{array}$ |  | 121.08 |
| 22 | $205646 \cdot 25$ | $\begin{array}{llll}13 & 0 & 28 & 3\end{array}$ | $3106 \cdot 28$ |  | $\begin{array}{llll}22 & 33 & 25 & 12 \\ 29 & 35 & 21 & 67\end{array}$ |  |  |
| 23 | 205852 | $\begin{array}{rrrr}12 & 49 & 50.6\end{array}$ | 6 106-33 |  | 2235 | $32210 \%$ | $121 \cdot 17$ |
| 2 | 210057 | S.12 39 |  | 24 |  |  |  |

## MEAN TIME.

## THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Hour. | Right Ascension | Declination. | $\begin{array}{\|l} \text { Diff. Dea, } \\ \text { for } 10^{\mathrm{m}}, \end{array}$ | Hour. | Right Ascension. | Declination. | Diff. Dee. for $10^{\mathrm{m}}$. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | SUNDAY 17. |  |  |  | TUESDAY 19. |  |  |
|  | b m s | - | " |  | 1 | - | 11 |
| 0 | $22.3718 * 09$ | S. 3 92 10:2 | 121:92 | 0 | 0 9 1 | N. $61128{ }^{\circ} 0$ | 11457 |
| 1 | 22 $3914 \cdot 40$ | $\begin{array}{llll}3 & 10 & 2 & 9\end{array}$ | 121 28 | 1 | () 10 55 07 | $62255 *$ | $114 \cdot 23$ |
| 2 | 29 $4110 \cdot 58$ | $25755 \cdot 2$ | 121.32 | 2 | $\begin{array}{llllll}0 & 12 & 49\end{array}$ | $\begin{array}{lllll}6 & 34 & 20 & 8\end{array}$ | $113 \cdot 90$ |
| 3 | $\begin{array}{llll}22 & 43 & 6 \cdot 66\end{array}$ | $24547 \cdot 3$ | $121 \cdot 37$ | 3 | $\begin{array}{lllllllllll}0 & 14 & 43\end{array}$ | 6 45 44  | $113 \cdot 57$ |
| 4 | $2245 \quad 2.63$ | $23339 \cdot 1$ | $121 \cdot 38$ | 4 | $\begin{array}{llllllllll}0 & 16 & 37 & 36\end{array}$ | $657 \quad 5 \cdot 6$ | 113 -20 |
| 5 | 22465848 | $22130 \cdot 8$ | $121 \cdot 42$ | 5 |  | 78824 | 112 -85 |
| 6 | 224854.24 | $2 \quad 922 \cdot 3$ | $121 \cdot 42$ | 6 | $\begin{array}{llll}0 & 20 & 25 & 70\end{array}$ | $\begin{array}{llll}7 & 19 & 41 & 9\end{array}$ | 112 *48 |
| 7 | $22 \quad 50 \quad 49.89$ | 1 57 13 8 | $121 \cdot 43$ | 7 | $\begin{array}{lllllll}0 & 2 & 19 & 9\end{array}$ | $7 \begin{array}{llll}7 & 30 & 56 & 8\end{array}$ | $112 \cdot 12$ |
| 8 | $\begin{array}{lllllll}22 & 52 & 45 & 44\end{array}$ | $145 \quad 5 \quad 2$ | $121 \cdot 42$ | 8 | $\begin{array}{lllll}0 & 24 & 14 & 17\end{array}$ | $\begin{array}{llll}7 & 42 & 9 & \end{array}$ | $111{ }^{\prime} 72$ |
| 9 | 225440 | $\begin{array}{llll}1 & 32 & 56 & 7\end{array}$ | $121 \cdot 42$ | 9 | 0 26 8 8 - 46 | $\begin{array}{llll}7 & 53 & 19 & 8\end{array}$ | $111 \cdot 35$ |
| 10 | $22 \quad 5636 \cdot 26$ | $12048 \cdot 2$ | $121 \cdot 38$ | 10 | $\begin{array}{llll}0 & 28 & 2 & 79\end{array}$ | 884270 | $110 \cdot 93$ |
| 11 | $2258531 \quad 54$ | 1 8 39  | 121:37 | 11 | $\begin{array}{llll}0 & 29 & 57 & 17\end{array}$ | $8815 \quad 33 \quad 5$ | $110 \cdot 55$ |
| 12 | 23 0-26 73 | $\begin{array}{lllll}0 & 56 & 31 & 7\end{array}$ | $121 \cdot 32$ | 12 | $\begin{array}{llllllllllll}0 & 31 & 51\end{array}$ | $8 \quad 2636$ '8 | $110 \cdot 13$ |
| 13 | $23 \quad 2 \quad 21$ '84 | $04423 \cdot 8$ | 121.28 | 13 | 03346.06 | $8 \quad 37376$ | 10979 |
| 14 | $23 \quad 4 \quad 16$ '86 | $\begin{array}{llll}0 & 32 & 16 \cdot 1\end{array}$ | $121 \cdot 22$ | 14 | $\begin{array}{llll}0 & 35 & 40 & 58\end{array}$ | 848450 | 10940 |
| 15 | $\begin{array}{lllll}23 & 6 & 11 & 81\end{array}$ | 0 20 8 | $121 \cdot 17$ | 15 | 0 $3735 \cdot 16$ | 85931 '7 | $108 \cdot 85$ |
| 16 | $23 \quad 8 \quad 6.69$ | S. 08818 | $121{ }^{\circ} 08$ | 16 | $\begin{array}{llll}0 & 39 & 29 & 79\end{array}$ | $\begin{array}{llll}9 & 10 & 24 & 8\end{array}$ | $108 \cdot 43$ |
| 17 | $231001 * 49$ | N. $0 \quad 4 \quad 4 \quad 4 \cdot 7$ | $121 \cdot 00$ | 17 | $\begin{array}{llll}0 & 41 & 24 * 48\end{array}$ | $92135 \cdot 4$ | 107 -98 |
| 18 | 23 111 566 | $\begin{array}{llll}0 & 16 & 10 & 7\end{array}$ | $120 \cdot 93$ | 18 | $\begin{array}{llll}0 & 43 & 19\end{array}$ | 93293 | 107 '58 |
| 19 | $\begin{array}{llll}23 & 13 & 50\end{array}$ | 0 0-28 16:3 | $120 \cdot 82$ | 19 | $\begin{array}{lllll}0 & 45 & 14 & 04\end{array}$ | $\begin{array}{lllll}9 & 42 & 48 & 5\end{array}$ | $107 \cdot 07$ |
| 20 | $\begin{array}{llll}23 & 15 & 45 & 50\end{array}$ | 040 21-2 | 120 | 20 | 04788.91 | $9753-30 \cdot 9$ | $106 \cdot 62$ |
| 21 | $231740 \cdot 05$ | $05925 \cdot 5$ | $120 \cdot 60$ | 21 | $\begin{array}{llll}0 & 49 & 3 & 85\end{array}$ | $10 \quad 4 \quad 10^{\prime} 6$ | $106 \cdot 13$ |
| 22 | $\begin{array}{llllll}23 & 19 & 34 & 54\end{array}$ | $1429 \cdot 1$ | $120 \cdot 48$ | 29 | $\begin{array}{llllllllllll}0 & 50 & 58 & 86\end{array}$ | $10 \quad 1447 *$ | $105 \cdot 65$ |
| 23 | 23 21 28 *98 | N. 116320 | $120 \cdot 35$ | 93 | $\begin{array}{lllll}0 & 52 & 53 & \text { *94 }\end{array}$ | N. 102521 | 105 '18 |
|  | MONDAY 18. |  |  | WEDNESDAY 20. |  |  |  |
| 0 | $\begin{array}{llll}23 & 23 & 23 & 37\end{array}$ | N. $1-2834 \cdot 1$ | 120-22 | 0 | $\begin{array}{llllll}0 & 54 & 49\end{array}$ | N. $1035 \quad 52 \cdot 4$ | 104 '68 |
| 1 | $\begin{array}{llllll}23 & 25 & 17 & 71\end{array}$ | $\begin{array}{lllll}1 & 40 & 35 & 4\end{array}$ | $120 \cdot 07$ | 1 | $\begin{array}{llll}0 & 56 & 44 & 33\end{array}$ |  | 104 18 |
| 2 | $\begin{array}{llll}23 & 27 & 12 & 00\end{array}$ | $15935 \cdot 8$ | 119.92 | 2 | $\begin{array}{llllll}0) & 58 & 39 & 64\end{array}$ | $10 \quad 5645 \cdot 6$ | $103 \cdot 68$ |
| 3 | $\begin{array}{llll}23 & 29 & 6 & 26\end{array}$ | 2 4 35:3 | 11975 | 3 | $1{ }^{1}$ | $11 \begin{array}{lll}11 & 7 & 7\end{array}$ | $103 \cdot 15$ |
| 4 | $23 \mathrm{31} 00 \cdot \pm 7$ | $21633 \cdot 8$ | 119 -58 | 4 | $1 \quad 230 \cdot 49$ | $\begin{array}{llll}11 & 17 & 26.6\end{array}$ | $102 \cdot 65$ |
| 5 | $\begin{array}{llllll}23 & 32 & 54 & 65\end{array}$ | $22831 \cdot 3$ | $119 \cdot 40$ | 5 | 1 4 26.04 | $\begin{array}{llll}11 & 27 & 42 & 5\end{array}$ | $102 \cdot 12$ |
| 6 | 23 $34448 \cdot 79$ | $24027 \cdot 7$ | 119.22 | 6 | 1621.68 | $\begin{array}{llll}11 & 37 & 55\end{array}$ | $101 \cdot 60$ |
| 7 | $\begin{array}{llllll}23 & 36 & 42 & 91\end{array}$ | 25293.0 | $119{ }^{\circ} 02$ | 7 | $\begin{array}{lllll}1 & 8 & 17 & 40\end{array}$ | $11 \begin{array}{lll}11 & 48 & 4\end{array}$ | $101 \cdot 03$ |
| 8 | $\begin{array}{lllll}23 & 38 & 37 & 00\end{array}$ | $\begin{array}{llll}3 & 4 & 17\end{array}$ | $118 \times 38$ | 8 | $\begin{array}{lllll}1 & 10 & 13 & 2\end{array}$ | $1158511{ }^{11} 0$ | $100 \cdot 50$ |
| 9 | 2340 | $\begin{array}{llll}3 & 16 & 10 & 1\end{array}$ | $118 \cdot 62$ | 9 | $\begin{array}{lll}1 & 12 & 9 \\ 11\end{array}$ | 12.8814 .0 | $99 \cdot 95$ |
| 10 | $\begin{array}{lllll}23 & 42 & 25 & 11\end{array}$ | $3281 \cdot 8$ | $118 \cdot 40$ | 10 | $\begin{array}{llll}1 & 14 & 5 & 11\end{array}$ | 12 llll | $99 * 40$ |
| 11 | $\begin{array}{llllll}23 & 44 & 19 & 13\end{array}$ | $\begin{array}{llll}3 & 39 & 52 & 2\end{array}$ | $118 \cdot 17$ | 11 | $\begin{array}{lllll}1 & 16 & 1 & 20\end{array}$ | $\begin{array}{llll}12 & 28 & 10\end{array}$ | 98 82 |
| 12 | $\begin{array}{llll}23 & 46 & 13 & 14\end{array}$ | $\begin{array}{lllll}3 & 51 & 41 & 2\end{array}$ | 117 93 | 12 | $\begin{array}{lllll}1 & 17 & 57 & 38\end{array}$ | 123838 | $98 \cdot 95$ |
| 13 | $\begin{array}{llll}23 & 48 & 7 & 14 \\ 83 & 50 & 1 & 18\end{array}$ | $4{ }^{4} 312888$ | $117 \% 0$ | 13 | $\begin{array}{lllll}1 & 19 & 53 \cdot 66\end{array}$ | $\begin{array}{lllll}12 & 47 & 52 \cdot 5\end{array}$ | $97 \cdot 67$ |
| 14 | $\begin{array}{llll}23 & 50 & 1 & 12\end{array}$ | 415 | $117 \cdot 47$ | 14 | $12150 \cdot 05$ | $125738 \cdot 5$ | $97 \cdot 08$ |
| 15 | $\begin{array}{llll}23 & 51 & 55 & 10\end{array}$ | $42659 \cdot 8$ | $117 \cdot 20$ | 15 | $12346 \cdot 53$ | $13 \quad 721.0$ | 96 \% |
| 16 | $\begin{array}{llll}23 & 53 & 49\end{array}{ }^{\circ} 08$ | 43843 '0 | $116 \cdot 93$ | 16 | $12543 \cdot 11$ | $\begin{array}{lll}13 & 17 & 0\end{array}$ | 95 8 8 |
| 17 | $\begin{array}{lllll}23 & 55 & 43 & \cdot 05\end{array}$ | $4{ }^{4} 5024 \cdot 6$ | $116 \cdot 67$ | 17 | $12739 \cdot 80$ | $\begin{array}{llllll}13 & 26 & 35 & 3\end{array}$ | $95 \cdot 30$ |
| 18 | $\begin{array}{llllll}23 & 57 & 37 & 02\end{array}$ | $5 \quad 2 \quad 4 \cdot 6$ | $116 \cdot 38$ | 18 | $\begin{array}{lllll}1 & 29 & 36 & 60\end{array}$ | $\begin{array}{llll}13 & 36 & 7 & 1\end{array}$ | 94-67 |
| 19 | $\begin{array}{llll}23 & 59 & 31\end{array}$ | $\begin{array}{llll}5 & 13 & 42 & 9\end{array}$ | $116 \cdot 10$ | 19 | 131533 | $\begin{array}{llll}13 & 45 & 35 & 1\end{array}$ | $94 \cdot 07$ |
| 20 | $\begin{array}{llll}0 & 1 & 24 & 98\end{array}$ | $\begin{array}{lllll}5 & 25 & 19 & 5\end{array}$ | $115 \cdot 82$ | 20 | $\begin{array}{llll}1 & 33 & 30 & 52\end{array}$ | $\begin{array}{lllll}13 & 54 & 59 & \\ 1\end{array}$ | $93 \cdot 43$ |
| 21 | $\begin{array}{llll}0 & 3 & 18 & \cdot 97\end{array}$ | $\begin{array}{lllll}5 & 36 & 54 & \cdot 4\end{array}$ | $115 \cdot 52$ | 21 | $135597 \cdot 64$ | $14 \quad 420 \cdot 1$ | 92 80 |
| 22 | $\begin{array}{llll}0 & 5 & 12\end{array} 97$ | $5{ }_{5}^{5} 48$ | 115 '20 | 22 | $13794 \cdot 87$ | $\begin{array}{llll}14 & 13 & 36 & 9\end{array}$ | 92 17 |
| 23 | 0 7 6 | $5 \quad 59588 \cdot 7$ | 114 '88 | 23 | $13922+22$ | $142249{ }^{1} 9$ | 91 *5 |
| 24 | $\begin{array}{lll}0 & 9 & 1\end{array}$ | N. $61128^{\circ} 0$ |  | 24 | $\begin{array}{llll}1 & 41 & 19\end{array}$ | N. $143159 \cdot 1$ |  |




## MEAN TIME.

## THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Hour. | Right Ascension. | Declination. | $\begin{aligned} & \text { Dif. Dec, De } \\ & \text { for 10m. } \end{aligned}$ | Hour. | Right Ascension. | Declination. | DII. Dec. for $10^{\mathrm{m}}$. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | FRIDAY 29. |  |  |  | SUNDAY 31. |  |  |
|  | ${ }^{\mathrm{h}} \mathrm{m}$ : | $5^{\circ} 9^{\prime \prime}{ }^{\prime \prime}$ | $\stackrel{1}{18}$ |  | h m ${ }^{\text {m }}$ | $\therefore{ }^{\circ} \mathrm{l}$ | " |
| 0 | $828 \quad 4 \cdot 10$ | N. $15 \quad 9 \quad 20 \% 1$ | $97 \cdot 45$ | 0 | $\begin{array}{llllll}10 & 11 & 57 & 51\end{array}$ | N. 5 52 $533 \cdot 7$ | 131 '80 |
| 1 | $880013 \cdot 84$ | $\begin{array}{llll}14 & 59 & 35 & 4\end{array}$ | $98 \cdot 37$ | 1 | $\begin{array}{lllll}10 & 14 & 8 & 29\end{array}$ | 5 39 42  | $132 \cdot 30$ |
| 2 | $83293 \cdot 56$ | $144945 \cdot 2$ | $99 \cdot 25$ | 2 | $\begin{array}{llll}10 & 16 & 19 & 14\end{array}$ | 5 <br> 5 629.1 | $132 \cdot 75$ |
| 3 | $83433 \cdot 26$ | $\begin{array}{llll}14 & 39 & 49\end{array}$ | $100 \cdot 13$ | 3 | $1018 \quad 30 \cdot 07$ | $\begin{array}{llllll}5 & 13 & 12 & 6\end{array}$ | $133 \cdot 22$ |
| 4 | $83642 \cdot 94$ | $\begin{array}{llll}14 & 29 & 48 & 9\end{array}$ | $101 \cdot 00$ | 4 | $102041 \cdot 09$ | $\begin{array}{lllllllll}4 & 59 & 53 & 3\end{array}$ | $133 \cdot 67$ |
| 5 | \& $3852 \cdot 61$ | $\begin{array}{lllll}14 & 19 & 42 & 9\end{array}$ | $101 \cdot 88$ | 5 | $10 \quad 2252 \cdot 19$ | 44631.3 | $134 \cdot 08$ |
| 6 | $841 \quad 2 \cdot 27$ | $14.931 \%$ | $102 \cdot 77$ | 6 | $\begin{array}{llll}10 & 25 & 3 & 38\end{array}$ | $433 \quad 6$ '8 | $134 \cdot 52$ |
| 7 | $84311{ }^{\circ} 91$ | 135915 '0 | 103 '60 | 7 | $\begin{array}{llll}10 & 27 & 14.67\end{array}$ | $\begin{array}{lllll}4 & 19 & 39 & 7\end{array}$ | $134 \cdot 93$ |
| 8 | $845 \quad 21 \cdot 54$ | $\begin{array}{llllll}13 & 48 & 53\end{array}$ | 104*47 | 8 | $102926 \cdot 05$ | $\begin{array}{llll}4 & 6 & 10^{\prime} 1\end{array}$ | $135 \cdot 32$ |
| 9 | $84731 \cdot 17$ | $\begin{array}{llll}13 & 38 & 26 & 6\end{array}$ | $105 \cdot 32$ | 9 | $1031 \begin{array}{lllll}10 & 37\end{array}$ | 3 52 38  | $135 \cdot 70$ |
| 10 | $84940 \cdot 78$ | $\begin{array}{llll}13 & 27 & 54 & 7\end{array}$ | $106 \cdot 15$ | 10 | $103349 \cdot 10$ | $\begin{array}{llll}3 & 39 & 4 * 0\end{array}$ | 136 \%08 |
| 11 | $85150 \cdot 39$ | $\begin{array}{lllll}13 & 17 & 17 & 8\end{array}$ | 106 -98 | 11 | $1036 \quad 0 \cdot 78$ | $\begin{array}{llllll}3 & 25 & 27 & 5\end{array}$ | $136 \cdot 43$ |
| 12 | 85359.99 | $\begin{array}{llll}13 & 6 & 35 \\ 13 & 9\end{array}$ | 107 :80 | 12 |  | 3 11 48 | $136 \cdot 78$ |
| 13 | $856 \quad 9 \cdot 59$ | $125549 \cdot 1$ | 108 :63 | 13 | $10 \quad 40 \quad 24 \cdot 47$ | 25888 | $137 \cdot 10$ |
| 14 | $\begin{array}{lllll}8 & 58 & 19 & 19\end{array}$ | $\begin{array}{lllllll}12 & 44 & 57 & 3\end{array}$ | $109 \cdot 43$ | 14 | $1042 \quad 36 \cdot 48$ | 24425 '6 | $137 \cdot 43$ |
| 15 | $9 \quad 0 \quad 28 \cdot 78$ | 1234 | $110 \cdot 23$ | 15 | $104448 \quad 61$ | 23041.0 | $137 \cdot 73$ |
| 16 | 9 2 $38 \cdot 38$ | $\begin{array}{llll}12 & 22 & 59 & 3\end{array}$ | 111 •03 | 16 | 1047085 | 21654.6 | $138 \cdot 03$ |
| 17 | $\begin{array}{llll}9 & 4 & 4798\end{array}$ | $1211153{ }^{12} 1$ | 111 '83 | 17 |  | $\begin{array}{llll}2 & 3 & 6 & 4\end{array}$ | $138 \cdot 32$ |
| 18 | 9657.58 | $\begin{array}{llll}12 & 0 & 42 \cdot 1 \\ 11 & 49 & 26 \cdot 5\end{array}$ | $112 \cdot 60$ | 18 | $\begin{array}{llllll}10 & 51 & 25 & 71\end{array}$ |  | $138 \cdot 57$ |
| 19 | $\begin{array}{lllll}9 & 9 & 7 & 19\end{array}$ | $\begin{array}{llll}11 & 49 & 26 \cdot 5\end{array}$ | 113.37 | 19 | $\begin{array}{llllll}10 & 53 & 38 & 33\end{array}$ | $\begin{array}{lllllll}1 & 35 & 25\end{array}$ | $138 \cdot 83$ |
| 20 | $\begin{array}{llllll}9 & 11 & 16 & 80\end{array}$ | $\begin{array}{llll}11 & 38 & 6 \cdot 3\end{array}$ | $114 \cdot 13$ | 20 | $10 \quad 55 \quad 51 \cdot 08$ | $12132 \cdot 1$ | $139 \cdot 07$ |
| 21 | $91326 \cdot 42$ | $\begin{array}{llll}11 & 26 & 41 \cdot 5\end{array}$ | $114 \cdot 90$ | 21 | 10 58 3  <br> 1 96   | $1 \begin{array}{ll}1 & 737: 7\end{array}$ | $139 \cdot 28$ |
| 22 | 9 9 15 36 \% 0 |  | 115 \% 63 | 22 | $\begin{array}{llll}11 & 0 & 16 & 98\end{array}$ | $0_{0} 5342{ }^{\circ}$ | 139 -50 |
| 23 | SATURDAY 30. |  |  | 23 | MONDAY, APRIL 1. |  | $139 \cdot 70$ |
| 0 | 91955.37 | N. 10520000 | $117 \cdot 12$ | 0 | 11 4 <br> 13  | N. 0 |  |
| 1 | $\begin{array}{lll}9 & 22 & 5\end{array}$ | $10 \begin{array}{llll}10 & 40 & 17 & 3\end{array}$ | 117 '82 |  |  |  |  |
| 2 | 9 $24.14 \cdot 75$ | $10 \begin{array}{llll}10 & 28 & 30 & 4\end{array}$ | 11855 |  |  |  |  |
| 3 | $926 \underset{ }{9} 24 \cdot 47$ | $\begin{array}{llll}10 & 16 & 39 & \cdot 1\end{array}$ | $119 \cdot 25$ |  |  |  |  |
| 4 | $\begin{array}{llll}9 & 28 & 34 & 22\end{array}$ | $\begin{array}{llll}10 & 4 & 4 & 43\end{array}$ | 119 '95 |  |  |  |  |
| 5 | $93043{ }^{9} 99$ | $952243{ }^{9} 9$ | $120 \cdot 62$ |  |  |  |  |
| 6 | $\begin{array}{lllll}9 & 32 & 53 & 79\end{array}$ | $\begin{array}{lllll}9 & 40 & 40 & \cdot 2 \\ 9 & 28 & 30\end{array}$ | $121 \cdot 32$ |  | PHASES OF THE MOON. |  |  |
| 7 | 9 35 3 3 <br>  37 1  |  | $121 \cdot 97$ |  |  |  |  |
| 8 | $\begin{array}{lllll}9 & 37 & 13.47\end{array}$ | $\begin{array}{lllll}9 & 16 & 20 & 75\end{array}$ | $122 \cdot 63$ |  |  |  |  |
| 9 | $\begin{array}{llllllllll}9 & 39 & 23 & 36\end{array}$ | $\begin{array}{llll}9 & 4 & 4 & 7\end{array}$ | $123 \cdot 30$ |  |  |  |  |
| 10 | $\begin{array}{llllllll}9 & 41 & 33 & 29\end{array}$ | 8 5191 44  <br> 8 39 91 | $123 \cdot 92$ |  |  |  |  |
| 11 | 9 43 43 <br> 9 45 53 | $\begin{array}{llll}8 & 39 & 21 \cdot 4 \\ 8 & 26 & 54 \cdot 1\end{array}$ | $124 \cdot 55$ $125 \cdot 17$ |  | O Full Moon - - $49 \underset{\sim}{2}$ |  |  |
| 12 | $\begin{array}{lllll}9 & 45 & 53 & 27 \\ 9 & 48 & 3 & 32\end{array}$ | $\begin{array}{cccc}8 & 26 & 54 & 1 \\ 8 & 14 & 23 & 1\end{array}$ | $125 \cdot 17$ $125 \cdot 78$ 12688 |  | $\mathbb{C}$ Last Quarter - 1111819 '6 |  |  |
| 13 | $\begin{array}{rrrrr}9 & 48 & 3 & 32 \\ 9 & 50 & 13 & 42\end{array}$ | $\begin{array}{rrrrrrr}8 & 14 & 23 & 1 \\ 8 & 1 & 48 & 4\end{array}$ | $125 \% 8$ 126.38 |  | - New Moon - 18 12 17.3 |  |  |
| 15 | 9) $52.23 \cdot 57$ | $74910 \cdot 1$ | $126 \cdot 98$ |  | () First Quarter - 2017 1\%6 |  |  |
| 16 | $955433 \cdot 77$ | 7 7 7 | $127 \cdot 55$ |  |  |  |  |
| 17 | $95644 \cdot 02$ | 7 23 42  | $128 \cdot 12$ |  |  |  |  |
| 18 | 95854.33 | 71054 | $128 \cdot 68$ |  |  |  |  |
| 19 | $\begin{array}{rrr}10 & 1 & 4 \cdot 70 \\ 10 & 3 & 15 \cdot 13\end{array}$ | $\begin{array}{llll}6 & 58 & 2 \cdot 1 \\ 6 & 45 & 6 \cdot 7\end{array}$ | 129-23 |  | © Perigee $\cdots \cdots 20$ |  |  |
| 20 | $\begin{array}{llll}10 & 3 & 15 & 13\end{array}$ | 6 45 $6 \cdot 7$ <br> 6   | 12975 |  |  |  |  |
| 21 | $\begin{array}{llll}10 & 5 & 25 \cdot 62 \\ 10 & 7 & 36 \cdot 18\end{array}$ | $\begin{array}{lcc}6 & 32 & 8 \cdot 2 \\ 6 & 19 & 6 \\ 6 & 4\end{array}$ | 130 -30 |  | © Apogee . . . . . - 2219 |  |  |
| 22 | $\begin{array}{lll}10 & 7 & 36 \cdot 18 \\ 10 & 9 & 46 \cdot 81\end{array}$ | $\begin{array}{rrrr}6 & 19 & 6 & 4 \\ 6 & 6 & 1 & 6\end{array}$ | $130 \cdot 80$ 131.32 |  |  |  |  |
| 24 | 10 11 57  <br> 1    | N. 5 52 $53 \times 7$ |  |  |  |  |  |


|  | MEAN TIME. |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | THE SUN'S <br> Apparent |  | Logarithm of the Radius Vector of the Barth. | 'THE MOON'S |  |  |  |
|  | Longitude. | Latitude. |  | Semidiameter. |  | Horizontal Parallax, |  |
|  | Noon. | Noon. | Noon. | Noon. | Midmight. | Noon, | Milinight. |
| 1 | $11^{\circ} 52^{\prime} 2^{\prime \prime} 4^{\prime \prime} 5$ | S. $0^{\prime \prime} 57$ | $0 \cdot 0000505$ | $16^{\prime} 16^{\prime \prime} \cdot 5$ | $16^{\prime} 92.4$ | $59^{\prime}+13^{\prime \prime} \cdot 6$ | $60^{\prime} \quad 5^{\prime \prime} \cdot 0$ |
| 2 | 1251 9*0 | $0 \cdot 54$ | $0 \cdot 0001753$ | $16 \quad 27^{\prime \prime}$ | $1631 \cdot 3$ | (6) $23 \cdot 3$ | $60 \quad 37 \cdot 9$ |
| 3 | 1350114 | $0 \cdot 19$ | $0 \cdot 0003007$ | $1634 \cdot 2$ | $1635 \cdot 9$ | $60 \quad 48 \cdot 3$ | 6051 '8 |
| 4 | 1449117 | $0 \cdot 40$ | $0 \cdot 0004266$ | $1636 \cdot 4$ | $1635 \cdot 7$ | $60 \quad 56 \cdot 7$ | 6054.0 |
| 5 | $154810^{\circ} 0$ | $0 \cdot 29$ | $0 \cdot 0005529$ | 1633.9 | $1631{ }^{\circ} 0$ | $6047 \%$ | $60 \quad 36 \cdot 5$ |
| 6 | $16 \quad 47 \quad 6 \cdot 5$ | $0 \cdot 17$ | $0 \cdot 0006794$ | $1627 \cdot 1$ | $1622 \cdot 1$ | $6022 \cdot 4$ | $60 \quad 5 \cdot 3$ |
| 7 | $1746 \quad 1 \quad 2$ | S. $0 \cdot 03$ | $0 \cdot 0008061$ | $1617 \cdot 1$ | $1611 \%$ | $5945 \cdot 8$ | $59.24 \%$ |
| 8 | $184454 \cdot 2$ | N. $0 \cdot 10$ | $0 \cdot 0009328$ | $16 \quad 5$ | 1558.9 | $59 \quad 2 \cdot 1$ | 5839 |
| 9 | $1943 \quad 45$ '3 | $0 \cdot 24$ | $0 \cdot 0010594$ | $15 \quad 52 \cdot 5$ | $1546 \%$ | $58 \quad 15 \%$ | $5752 \cdot \mathrm{y}$ |
| 10 | $204234 \cdot 7$ | $0 \cdot 36$ | $0{ }^{\circ} 0011856$ | $1540 \cdot 1$ | $1534 \cdot 2$ | $5730 \cdot 0$ | $57 \quad 8 \cdot 1$ |
| 11 | $214122 \cdot 4$ | 0.47 | $0 \cdot 0013115$ | $15 \quad 28 \cdot 5$ | $1.523 \cdot 1$ | $56.47 \cdot 3$ | 5627 |
| 12 | 224088 | $0 \cdot 56$ | $0 \cdot 0014367$ | 15181 | $\begin{array}{llll}15 & 13 & 4\end{array}$ | $56 \quad 9{ }^{\prime \prime}$ | $55 \quad 51.9$ |
| 13 | $23 \quad 38 \quad 52 \cdot 7$ | $0 \cdot 62$ | $0 \cdot 0015612$ | $\begin{array}{lll}15 & 9 & 0\end{array}$ | $15 \quad 5 \%$ | $\begin{array}{llll}55 & 35\end{array}$ | $55 \quad 21.2$ |
| 14 | $243735 \cdot 3$ | $0 \cdot 64$ | 0.0016848 | $\begin{array}{ll}15 & 1\end{array} 3$ | $1457 \times$ | $55 \quad 7 \quad 4$ | 54548 |
| 15 | $253616 \%$ | $0 \cdot 65$ | $0 \cdot 0018074$ | 1454 '8 | 1159 | $5443 \cdot 6$ | 5433 \% |
| 16 | 263455 | 0.62 | 0 00019288 | $1449 \cdot 6$ | 14474 | 5424.6 | 5416.6 |
| 17 | 273332.0 | $0 \cdot 55$ | $0 \cdot 0020491$ | $1445 \cdot 7$ | 14442 | $5.110 \cdot 1$ | $54 \quad 46$ |
| 18 | $2832 \quad 7 \quad 2$ | $0 \cdot 47$ | $0 \cdot 0021681$ | 1443 '0 | 14 42 2 | $54 \quad 10 \cdot 3$ | $53 \quad 57$ '3 |
| 19 | $293040 \cdot 4$ | $0 \cdot 37$ | $0 \cdot 0022857$ | $1441 \cdot 8$ | 14 41 '8 | $53 \quad 55$ | 5355 |
| 20 | $302911 \%$ | $0 \cdot 25$ | $0 \cdot 0024020$ | 1442 | $14.43{ }^{\prime} 1$ | 53 57 | $54 \quad 0 \cdot 8$ |
| 21 | $31 \quad 97406$ | N.0.12 | $0 \cdot 0025171$ | 14445 | $1446 \cdot 4$ | $54 \quad 5 \cdot \mathrm{y}$ | $5412 \%$ |
| 22 | $32 \quad 26 \quad 75$ | S. $0 \cdot 01$ | $0 \cdot 0026309$ | 14489 | 1451.9 | 5422.0 | 5433 \% |
| 23 | $332132 \cdot 5$ | $0 \cdot 14$ | () 00027437 | $1455 \quad 6$ | 1459 '8 | 5146 | $55 \quad 2 \cdot 1$ |
| 21 | $342255 \cdot 3$ | $0 \cdot 2$ | $0 \cdot 002855.5$ | $15 \quad 4 \cdot 7$ | 1510  | $55 \quad 20 \cdot 0$ | $5540 \cdot 1$ |
| 25 | 35.215 \% | $0 \cdot 33$ | $0 \cdot 0029663$ | $15 \quad 16$ | $15 \quad 22 \cdot 8$ | $\begin{array}{lll}56 & 2 & 3\end{array}$ | 5696 |
| 26 | $\begin{array}{lllll}36 & 19 & 34 & 3\end{array}$ | 0-39 | $0 \cdot 0030762$ | $\begin{array}{ll}15 & 29\end{array}$ | 1537 '4 | $56 \quad 52 \%$ | 5719 '9 |
| 27 | $371750 \cdot 8$ | $0 \cdot 43$ | $0 \cdot 0031854$ | $1545 \cdot 1$ | $15 \quad 53$ \% | $5748 \cdot 3$ | $5817 \%$ |
| 28 | $\begin{array}{lllllllllllll}38 & 16 & 5 & 1\end{array}$ | 0.44 | $0 \cdot 0032938$ | $\begin{array}{lll}16 & 0 & 9\end{array}$ | $16 \quad 8 \cdot 7$ | $5846 \cdot 4$ | 591.4 '8 |
| 29 | 39) $14 \begin{array}{llll} & 17 & \\ 5\end{array}$ | $0 \cdot 42$ | $0 \cdot 0031016$ | $1616 \cdot 1$ | 1623 '1) | $5942 \%$ | $60 \quad 7 \% 3$ |
| 30 | $40 \quad 12 \quad 27 \%$ | $0 \cdot 37$ | $0 \cdot 0035088$ | $1629 \cdot 1$ | 16343 | $60 \times 9.6$ | $60 \quad 48 \%$ |
| 31 | $41 \quad 10 \quad 36 \cdot 5$ | S. $0 \cdot 28$ | $0 \cdot 00361.55$ | $1638 \cdot 4$ | 16 +1 3 | $61 \quad 35$ | $6114 \%$ |


| MEAN TIME. |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | THE MOON'S |  |  |  |  |  |
|  |  | Longitude. |  | Latitude. |  | $\frac{A_{\text {ge }}}{N_{\text {Noon. }}}$ | Meridian Passage. |
|  |  | Noon. | Mridnight. | Noon. | Midnight. |  |  |
| Mon. | 1 | $167^{\circ} 7{ }^{\prime} 1^{\prime \prime} \cdot 2$ | $171^{\circ} 25^{\prime} 26^{\prime \prime} \cdot 0$ | S. $5.53^{\prime} 3^{\prime} 37^{\prime \prime} \cdot 4$ | S. $500100^{1} 27^{\prime \prime} \cdot 9$ | $\begin{aligned} & 13 \cdot \\ & 13 \cdot 5 \end{aligned}$ | $10^{\mathrm{h}} 4 \mathrm{~m}^{\mathrm{m}} \cdot 3$ |
| Tues. | $\stackrel{2}{2}$ | 181.48594 | $1891641 \cdot 2$ | $2{ }^{2}+5916 \%$ | 4 4 | 14.5 | $1140 \cdot 3$ |
| Wed. | 3 | 19647925 | $2041950 \cdot 0$ | - $42053 \cdot 3$ | $\begin{array}{llll}3 & 58 & 6 & 5\end{array}$ | 15.5 | 1235 \% |
| Thur, | 4 | 21159.88 .4 | $21985 \quad 309$ | 33164 | $3 \quad 0 \quad 25 \%$ | $16 \cdot 5$ | 13.34 |
| Frid. | 5 | $\begin{array}{llll}296 & 5 & 5 & 27 \\ 20\end{array}$ | 2342958 | $22640 \%$ | $15035 \%$ | 17 '5 | $1435 \%$ |
| Sas. | 6 | $2414644^{4} 4$ | 24) 64.2 | S. 11252 | S. 03416 16 | $18 \cdot 5$ | 15367 |
| Sun. | 7 | $2568020 \times 5$ | 26329314 | N. 01428 | N. $04242{ }^{5}$ | 19 '5 | 16375 |
| Mon. | 8 | 270338 | 27731135 | \% $119949 \%$ | $15516 \%$ | 20 21 | $1735 \cdot 7$ |
| Tues. | 9 | 28423 | $2911113 \cdot 5$ | 22834\% | $25920 \cdot 4$ | $21 \cdot 5$ | $1830 \cdot 3$ |
| Wed. | 10 | $2975330 \cdot 8$ | $\begin{array}{r}30431 \\ -1789 \\ \hline 18\end{array}$ | 3 $2713 \cdot 8$ | 35158 | $22 \cdot 5$ | 19210 |
| Thur. | 11 | $\begin{array}{llll}311 & 4 & 0 \cdot 1 \\ 302 & -7 & \end{array}$ | 317 <br> 32 <br> 18 <br> 8 | 413 4 4 | 43116.0 | $23 \cdot 5$ | 2085 |
| Frid. | 12 | $3235743 \cdot 7$ | $\begin{array}{llll}330 & 19 & 3.7\end{array}$ | 445330 | 4568 8.8 | $24 \cdot 5$ | $2053 \cdot 1$ |
| Sat. | 13 |  |  | $\begin{array}{llll}5 & 3 & 2 & 6 \\ 5 & 5 & \end{array}$ | $\begin{array}{llllll}5 & 6 & 15 & 0\end{array}$ | 25.5 | $2136 \cdot 7$ |
| Surn. | 14 | 349 + $15 \cdot 5$ | $3551350 \cdot 4$ | 5 5 49 0 <br> 4 5 4  | 5 1 $49 \cdot 1$  <br>  13 3 1 | $26 \cdot 5$ | 22 19\%3 |
| Mon. | 15 | $21 \quad 1 \cdot 1$ | 7 25 <br> 5 58 0 | 454220 | $44336 \cdot 3$ | $27 \cdot 5$ | $23 \quad 1 \cdot y$ |
| Tues. | 16 | $\begin{array}{llllll}13 & 28 & 51 & 1\end{array}$ | $19.2950 \cdot 7$ | $429+1 \cdot 8$ | $41250 \cdot 3$ | $28 \cdot 5$ | $2345 \cdot 4$ |
| Wed. | 17 | 25 29 $6 \cdot 3$ | $312649 \cdot 3$ | $\begin{array}{llll}3 & 53 & 1+6\end{array}$ | $\begin{array}{lllll}3 & 31 & 8.6\end{array}$ | $29 \cdot 5$ | ¢ |
| Thur. | 18 | $37 \quad 2310 \% 8$ | $431824 \%$ | $\begin{array}{llll}3 & 6 & 47 & 7\end{array}$ | $24028 \cdot 0$ | $0 \cdot 8$ | 0 $30 \%$ |
| Frid. | 19 | 4912450 | $550630 \cdot 1$ | 212258 | $14258 \cdot 5$ | 1.8 | $116 \cdot 1$ |
| Sat. | 20 | 60, $59.58 \cdot 2$. | $\begin{array}{llllll}66 & 53 & 32 & 1\end{array}$ | 1 12 <br> 1 23 | N. 0405059 | 2.8 | $2 \quad 3 \cdot 7$ |
| Sun. | 21 | $724735 \cdot 1$ | $784234 \cdot 5$ | N.0 9 9 3 3*) | S. 023850 | $3 \cdot 8$ | 252.4 |
| Mon. | 22 | 84.3859 | $903720-3$ | S. 0.55 | 126474 | $4 \cdot 8$ | $341 \%$ |
| Tues, | 23 | (10468 | $\begin{array}{llll}102 & 42 & 6 \cdot 1 \\ 115 & 1 & 3 & 13\end{array}$ | 1 1 5743.4 |  | 5.8 | $430 \cdot 9$ 5 |
| Wed. | 24 | 108 49) 41 | $\begin{array}{llll}115 & 1 & 32 \cdot 3\end{array}$ | $\begin{array}{lll}256 & 6 \%\end{array}$ | 32253 | $6 \cdot 8$ | $519 \%$ |
| Thur. | 25 26 | 191 18 1.4 <br> 131 8  <br> 16   |  | $\begin{array}{lllll}3 & 47 & 36.0 \\ 1 & 0\end{array}$ | 4 l 9 $51 \%$ | 7 's | 68.2 |
| Frid. |  | $134830 \%$ | $\begin{array}{lllll}140 & 43 & 2 \cdot 1 \\ 154 & 10 & 5 & 1\end{array}$ | $42917 \%$ 4 4 | $4{ }^{4}+32 \cdot 0$ | 8.8 | $656 \cdot 2$ |
| Sat. | 27 | 14724237 | 1541251.1 | $45811 \cdot 8$ | $\begin{array}{llll}5 & 6 & 54.9\end{array}$ | 9-8 | 7443 |
| Sun. | 28 | $\begin{array}{llll}161 & 8 & 32 & 4 \\ 175 & 0 & 0\end{array}$ | $168 \quad 1126$ | 511207  <br>  6 | $\begin{array}{lllll}5 & 11 & 11 & 3\end{array}$ | $10 \cdot 8$ | $833 \cdot 4$ |
| Mon. | 29 | $1752121 \cdot 7$ | 1823753 | $51612 \cdot 4$ | 45615 | $11 \cdot 8$ | $924 \cdot 2$ |
| Tues. | 30 | $190 \quad 024.8$ | 19728 9\%1 | 441169 | $421 \div 2$ | $12 \cdot 8$ | $1017 \cdot 8$ |
| Wed. | 31 | 20506 | $21235 \quad 8 \cdot 3$ | S. 3564.415 | S. 32746 | 13 's | $1114 \cdot 8$ |

## MEAN TIME.

## THE MOON'S RIGHT ASCENSION AND DEGLINATION,

|  | Right | Declination |  | Hour. | Right Arcensio | Declinution | Dirf |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | WEDNESDAY 17. |  |  |  | FRIDAY 19. |  |  |
|  |  |  |  |  |  |  |  |
|  | $\begin{array}{llll}1 & 28 & 38 \\ 1 & 30 & 35\end{array}$ | $\begin{array}{ll}13 & 28 \\ 13 & 48\end{array}$ | 36 |  | $\begin{array}{llllllll}3 & 4 & 27 & 85\end{array}$ | N. 193895053 |  |
| 1 | 3035 | 1338 | 93.0 |  | 631.08 | 194540 \% 9 | 57.02 |
| 2 | 3231.90 | $134724 \cdot 6$ | $92 \div 4$ |  | 45 | $195123 \%$ | $56 \cdot 13$ |
| 3 | $\begin{array}{llll}13428 \\ 1 & 76\end{array}$ | 13.5639 .4 | 91 '8 |  | 37.96 | 195659 '8 | 55.23 |
| 4 | $36 \quad 25 \cdot 74$ | 14.5050 | 91 | 4 | 31241 \% 6 | $20 \quad 231.2$ | 54:32 |
| 5 |  | $141457 \%$ | $90 \cdot 60$ |  | $\begin{array}{llllllllll}3 & 14 & 45 & 38\end{array}$ | $20 \quad 757 \cdot 1$ | 53.42 |
| 6 | 14020.08 | 142415 | 89 -98 | 6 | 33 16 49  | $201317 \%$ | 52 \%2 |
|  | $1 \begin{array}{llll}1 & 42 & 17 & 44\end{array}$ | 14331 | 8935 |  |  | $201832 \cdot 7$ | 51.58 |
| 8 | $\begin{array}{lllll}1 & 44 & 14.93\end{array}$ | 144157 | . 6 | 8 | $312057 \quad 52$ | $20 \quad 23$ 42-2 | 50.67 |
| 9 |  | 145049 | 88.05 | 9 | $\begin{array}{llll}3 & 23 & 1 & 83\end{array}$ | 202846 | 73 |
| 10 | $\begin{array}{lllllll}1 & 48 & 10 & 30\end{array}$ | 145937 | 87.40 | 10 | $\begin{array}{lll}3 & 25 & 6\end{array}$ | 203344 | $48 \% 2$ |
| 11 | $\begin{array}{llll}1 & 50 & 8 \cdot 18\end{array}$ | $15 \quad 822 \cdot 3$ | 8673 | 11 | $\begin{array}{llll}3 & 27 & 10 & \text {-85 }\end{array}$ | 203837.5 | 47.87 |
| 12 | $\begin{array}{llll}1 & 52 & 6 & 19\end{array}$ | $\begin{array}{llll}15 & 17 & 2 \cdot 7\end{array}$ | $86 \cdot 07$ | 12 | $\begin{array}{llllllll}3 & 29 & 15 & 55\end{array}$ | $204324 \cdot 7$ | $46 \cdot 98$ |
| 13 | $\begin{array}{llll}1 & 54 & 4 & 34\end{array}$ | $15 \quad 2539 \cdot 1$ | $85 \cdot 38$ | 13 | $\begin{array}{lllllllll}3 & 31 & 20 & 3\end{array}$ | $20 \quad 48 \quad 6.3$ | 98 |
| 14 | $\begin{array}{lll}56 & 2 & 62 \\ 58 & 1\end{array}$ | 1534111.4 | $84 \cdot 72$ | 14 |  | $205242 \cdot 2$ | 03 |
| 16 | $\begin{array}{llll}58 & 1 & 03 \\ 59 & 59.50\end{array}$ | $\begin{array}{llll}15 & 42 & 39 & 7\end{array}$ | 84 *02 | 15 | $\begin{array}{lllll}3 & 35 & 30 & 41\end{array}$ | 2057124 | 44.08 |
| 16 | $\begin{array}{llllllll}1 & 59 & 59 & 59\end{array}$ | 15.5183 | $83 \cdot 32$ | 16 | $33735 \quad 62$ | $21 \quad 136$ | $43 \cdot 12$ |
| 18 | $2{ }_{2}^{2}$ | $155923 \cdot 7$ | $82 \cdot 62$ | 17 | $3 \mathrm{39} 40 \times 94$ | 2155 | 19 17 |
| 18 | $\begin{array}{llllllll}2 & 3 & 57 & 10 \\ \mathbf{2} & 5 & 56\end{array}$ | $16.739 \cdot 4$ | $81 \cdot 92$ | 18 | $\begin{array}{lllllllllll}3 & 41 & 46 & 39\end{array}$ | $2110 \quad 8.6$ | 18 |
| 19 | $\begin{array}{llllllll}2 & 5 & 56 \cdot 07 \\ 2 & 7 & 5 & \cdot 177\end{array}$ | 161550 | $81 \cdot 20$ | 19 | $\begin{array}{lllllllll}3 & 43 & 51 & 96\end{array}$ | 21.14157 | 40\%2 |
| 20 |  | $\begin{array}{lllll}16 & 23 & 58 & 1 \\ 16 & 38 & 1\end{array}$ | $80 \cdot 48$ | 20 | $\begin{array}{lllllll}3 & 45 & 57 & 64\end{array}$ | $211817 \%$ | $39 \cdot 25$ |
| 21 | $\begin{array}{llllll}2 & 9 & 54 & 41\end{array}$ | $1632{ }^{16} 10$ | 7977 | 21 | $\begin{array}{lllll}3 & 48 & 3 & 45\end{array}$ | $212212 \%$ | $38 \cdot 27$ |
| 22 | $\begin{array}{lllllllll}2 & 11 & 53 & 79\end{array}$ | 163959.6 | $79 \cdot 02$ | 22 | $\begin{array}{llll}3 & 50 & 9 & 36\end{array}$ | $2126 \quad 2 \cdot$ |  |
| 23 | 21353.32 | N. $164753 \cdot 7$ | $73 \cdot 28$ | 23 | 352 | N. 212945 |  |
|  | THURSDAY 18. |  |  | SATURDAY 20. |  |  |  |
| 0 | $2 \begin{array}{lllll}2 & 15 & 52 & 98\end{array}$ | N. 16 55 43 | 77 ${ }^{\text {53 }}$ | 0 | $35421 \cdot 54$ | N. 213133030 | 35 '30 |
| 1 | 2175278 | $\begin{array}{llll}17 & 3 & 28 & 6\end{array}$ | 76 's0 |  | 35627.80 | $213655 \cdot 4$ | 34'32 |
| 2 | 2195273 | 17119 | $76 \cdot 02$ | 2 | $\begin{array}{lllllllllllll}3 & 58 & 34 \cdot 17\end{array}$ | $214021 \cdot 3$ | 33 '32 |
| 3 |  | $171845 \cdot 5$ | $75 \cdot 27$ | 3 | $4 \times 10.61$ | $214341 \cdot 2$ | 32 |
| 4 | $\begin{array}{lllll}2 & 23 & 53 & 05\end{array}$ | $172617 \cdot 1$ | $74 \cdot 50$ | 4 | $247 \cdot 22$ | $214655 \%$ | 31.30 |
| 5 | $\begin{array}{llllll}2 & 25 & 53 & 43\end{array}$ | $173344 \cdot 1$ | 73.73 |  | $44^{4} 4.53 .90$ | 2150 | $30 \cdot 30$ |
| 6 | $\begin{array}{lllll}2 & 27 & 53.94 \\ 2 & 29 & 54.61\end{array}$ | $\begin{array}{rrrr}17 & 41 & 6 \cdot 5 \\ 17 & 48 & 94\end{array}$ | $72 \cdot 93$ | 6 | $4 \begin{array}{llll}4 & 7 & 0.69\end{array}$ | 2153 | 28 |
|  | $\begin{array}{llllll}2 & 29 & 54.61 \\ 2 & 31 & 5 & 6 & 41\end{array}$ | 17 1785 17 5 | $72 \cdot 15$ | 7 | $4 \quad 9 \quad 757$ | $\begin{array}{llll}21 & 56 & 0 & 4\end{array}$ |  |
|  | $\begin{array}{lllll}2 & 31 & 54 & 41 \\ 0 & 33 & 56 & \cdot 36\end{array}$ | 175537 | -37 | 8 | $\begin{array}{lllllllll}4 & 11 & 14.56\end{array}$ | $215850 \cdot 1$ | 27 P25 |
| 10 | $\begin{array}{lllllllll}2 & 33 & 56 & 36\end{array}$ | 18245 | -57 | 9 | $41321 * 64$ | 22133. | $26 \cdot 23$ |
| 10 | $\begin{array}{lllll}2 & 35 & 57 & 46 \\ 2 & 37 & 58 & 70\end{array}$ | $\begin{array}{llll}18 & 9 & 48 \cdot 6 \\ 18 & 16 & 47 \cdot 1\end{array}$ | $69 \cdot 75$ $68 \cdot 95$ | 10 | $\begin{array}{lllll}4 & 15 & 28 & 81 \\ 4 & 17 & 86\end{array}$ | 22.411 .0 | $25 \cdot 22$ |
| 12 |  | $\begin{array}{llll}18 & 16 & 47 \\ 18 & 23 & 40 & 8\end{array}$ | $68 \cdot 95$ | 11 | 41736.08 | $\begin{array}{lllll}22 & 6 & 42 \cdot 3 \\ 22 & 9 & 7 \cdot 4\end{array}$ | $24 \cdot 18$ |
| 13 | $\begin{array}{lll}2 & 42 & 1.61\end{array}$ | 18 180 29.6 | $68 \cdot 13$ 6732 | 13 | 21 | $\begin{array}{cccc}22 & 9 & 7 & 4 \\ 22 & 11 & 26 \cdot 3\end{array}$ | $23 \cdot 15$ |
| 14 | $244 \quad 3.28$ | $183713 \cdot 5$ | $66 \times 4$ | 14 | $482358 \cdot 42$ | $22.13 \quad 39 \cdot 1$ | $1 \cdot 08$ |
| 15 | $\begin{array}{llll}2 & 46 & 5 & 10\end{array}$ | $1843 \quad 52 \cdot 3$ | $65 \cdot 65$ | 15 | $426 \quad 6 \cdot 03$ | $221545 \%$ | 20 |
| 16 | $\begin{array}{lll}2 & 48 & 7.05\end{array}$ | $1850 \quad 26 \cdot 2$ | '82 | 16 | $\begin{array}{llllllllll}4 & 28 & 13 & 73\end{array}$ | 2217459 | 19.02 |
| 17 | $\begin{array}{llll}2 & 50 & 9 & 16\end{array}$ | 18565051 | '97 | 17 | 43021.51 | $221940 \cdot 0$ | $17 \cdot 97$ |
| 18 | $25211 \cdot 40$ | $19 \quad 3 \quad 18.9$ | $63 \cdot 12$ | 18 | 43229.37 | 222127.8 | 16.92 |
| 19 | $\begin{array}{lllllll}2 & 54 & 13 & 79 \\ 9 & 56 & 16 & 79\end{array}$ | $\begin{array}{lllll}19 & 9 & 37 & 6 \\ 19 & 15 & 51\end{array}$ | $62 \cdot 27$ | 19 | 43437.30 |  | -88 |
| 20 | 2 56 16 39  <br>  58 18   | $\begin{array}{lllll}19 & 15 & 51 & \% \\ 19 & 21 & 5\end{array}$ | $61 \cdot 40$ | 20 | $43645 \cdot 31$ | $222444 \%$ | 14.82 |
| 21 | $\begin{array}{llllllllllllll}2 & 58 & 18 & 99\end{array}$ | 192159.6 | $60 \cdot 53$ | 21 | $\begin{array}{lllllllll}4 & 38 & 53 & 39\end{array}$ | $222613 \%$ | 13.78 |
| 22 | $\begin{array}{llll}3 & 0 & 21 & 80\end{array}$ | 1928 2 8 | $59 \cdot 67$ | 22 | $441 \quad 1 \cdot 53$ | $22.2736 \cdot 2$ | $12 \cdot 72$ |
| 23 | 3 l | 1934 0:8 | $58 \cdot 78$ | 23 | $443 \quad 9 \cdot 75$ | $228852 \cdot 5$ | 11.65 |
| 24 | $\begin{array}{llll}3 & 4 & 27 & 85\end{array}$ | N. $19 \begin{array}{llll} & 39 & 53 & 5\end{array}$ |  | 24 | 44518.03 | N. 2230 | 11.65 |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Rour. | Bight Ascension. | Declination. | , | Hour. | Right Ascension. | Declination. | ditases: |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | SUNDAY 21. |  |  |  | TUESDAY 23. |  |  |
| 0 | 44518.03 | N. $223002 \%$ | 10'60 | 0 | $6^{\mathrm{h}} 2 \mathrm{~m}^{\mathrm{m}} 29^{\circ} \cdot 46$ | V.21 19 58.6 | $40 \% 8$ |
| 1 | 44726.38 | $2231 \quad 60$ | 9.53 | 1 | $\begin{array}{llll}63038 & 38 \\ 6 & 30\end{array}$ | 211553.9 | 42 |
| 9 | $44934 \cdot 79$ | 2232 | 8.48 | 2 | $63247 \cdot 14$ | 211142.9 | 42 |
| 3 | $451.43 \cdot 25$ | $223254 \cdot 1$ | 7:40 | 3 | $63455 \cdot 92$ | $21725 \cdot 6$ | 43 |
| 4 | 4535178 | 223338.5 | 635 | 4 | $\begin{array}{llll}637 & 4.67\end{array}$ | $\begin{array}{llll}21 & 3 & 2 \cdot 1\end{array}$ | 44.97 |
| 5 | 4 4 56 | $223416 \%$ | $8{ }^{28}$ | 5 | $63913 \cdot 38$ | $205832+3$ | 4600 |
| 6 | $\begin{array}{llll}4 & 58 & 8 & 89\end{array}$ | $223448: 3$ | 420 | 6 | $64122 \cdot 05$ | $205356-3$ | 47 |
|  | $5 \quad 5 \quad 0 \quad 17.67$ | $223513 * 5$ | $3 \cdot 15$ | 7 | 64330 \% 67 | 204914.0 |  |
| 8 | 5 5 222639 | 223532.4 | 207 | 8 | $64539 \cdot 26$ | $204425 \cdot 5$ | 49.10 |
|  | $\begin{array}{lllll}5 & 4 & 35 \cdot 17\end{array}$ | $223544 \cdot 8$ | 1.00 | 9 | 64747 80 | $203930 * 9$ | 50 |
| 10 | 643 g 9 | $223550 \cdot 8$ | 0.07 | 10 | 64956 | 203430 | 51 |
| 11 | $852 \cdot 84$ | $223550 \%$ | 1.15 | 11 | $\begin{array}{lllll}6 & 52 & 4 & 75\end{array}$ | 202923.0 | 52.18 |
| 12 |  | 223543 -5 | $2 \cdot 22$ | 12 | $65413 \cdot 16$ | 2024 | $53 \cdot 22$ |
| 13 | $51310 \% 6$ | $223530 \cdot 2$ | $3 \cdot 30$ | 13 | $65621 \cdot 52$ | $201850 \%$ | $54 \cdot 22$ |
| 14 | $5{ }_{5}^{5} 15 \quad 19.63$ | 2235104 | 37 | 14 | 65829.83 | $201325 \cdot 3$ | $55 \cdot 25$ |
| 15 | 51728.63 | $223444 \cdot 2$ | $5 \cdot 43$ | 15 | $7{ }^{7} 038.09$ | $20 \quad 753.8$ | 56 |
| 16 | 51937.66 | $223411 \%$ | 53 | 16 | $7 \begin{array}{llll}7 & 2 & 46 \cdot 31\end{array}$ | $\begin{array}{lllll}20 & 2 & 16 & 3 \\ 10 & 56 & 32\end{array}$ | $57 \cdot$ |
| 17 | $52146 \cdot 71$ | 2233324 | 7.60 | 17 | $4{ }^{4} 54.47$ | $195632 \cdot 7$ |  |
| 18 | 523 55 779 | $223246 \cdot 8$ | 67 | 18 | $7 \quad 2 \cdot 58$ | $195043 \cdot 0$ | 59 |
| 19 | $\begin{array}{llll}5 & 26 & 4 & 89\end{array}$ | 223154.8 | 977 | 19 | 910.64 | $194447{ }^{\prime} 4$ | 60.27 |
| 20 | 52814.01 | $223056 \cdot 2$ | $10 \% 3$ | 20 | 71118.65 | $19388^{45} 8$ | 6127 |
| 21 | $53023 \cdot 15$ | $22.2951 \cdot 2$ | 11.90 | 21 | 71326.61 | 193238 |  |
| 22 | $53232 \cdot 31$ | $22.2839 \cdot 8$ | 13 -00 | 22 | 71534 \%1 | $19 \div 24$. | 63.25 |
| 23 | $3441 \cdot 48$ N. 222721 '8 MONDAY 22. |  | 14.07 |  | WEDNESDAY 24. |  |  |
|  | $53650 \cdot 66$ | N,22 25574 | $15 \cdot 15$ |  | 71950 \% 16 | N.19 1339.7 | 65 22 |
| 1 | $5{ }_{5}^{58} 509$ '85 | 222426.5 | 16.23 |  | 72157.91 | 19788 | $66 \cdot 18$ |
| $\stackrel{1}{2}$ | 541 | 22 22 <br> 2 49 <br> 20 1 | 1730 |  | $\begin{array}{llll}7 & 24 & 5.60 \\ 7 & 26 & 13\end{array}$ | $\begin{array}{lllll}19 & 0 & 31.3 \\ 18 & 53 \\ 18 & 48\end{array}$ | $67 \cdot 17$ |
| 3 | $54318{ }^{5} 25$ | $22.21 \quad 5 \cdot 3$ | $18 \cdot 40$ |  | $72613 \cdot 23$ | $18 \quad 53484$ | $68 \cdot 15$ |
| 4 | 5452746 | $221914 \cdot 9$ | 19.47 | 4 | $72820 \cdot 81$ | 18 46 <br> 18 59 <br> 18 4 <br> 18 4 | 69.19 |
|  | 54736.67 | 221718 -1 | 20.53 |  | $73028 \cdot 34$ | 184048 |  |
| 6 | $4945 \cdot 87$ | $221514 \cdot 9$ | 21.62 | 6 | 73235.82 | $\begin{array}{lllll}18 & 33 & 4 & 4 \\ 18 & 95 & \end{array}$ | \%1 |
| 7 |  | $\begin{array}{llll}22 & 13 & 5 \cdot 2\end{array}$ | ${ }^{22} 270$ | 7 | $73443 \cdot 23$ | $\begin{array}{ll}18 & 25 \\ 18 & 58 \\ 18 & 18 \\ 18 & 46\end{array}$ | $71 \cdot 98$ 70.93 |
| 8 | 554.4 .28 | $221049{ }^{\circ}$ | 23.77 | 8 | 73650.60 | 18 18 18 18 1246.4 |  |
| 10 | 5 <br> 5 <br> 5 <br> 5 <br> 5681829.47 | 22 8 26 4 <br> 29 5 57  | $24 \cdot 93$ $25 \cdot 92$ | 10 | $\begin{array}{llll}738 & 37.91 \\ 7 & 41 & 5.17\end{array}$ | $\begin{array}{llllll}18 & 11 & 28 & 8 \\ 18 & 4 & 5\end{array}$ | 73.88 7488 7 |
| 11 |     <br> 6 0 31  | $\begin{array}{llll}22 & 3 & 219\end{array}$ | 26.98 | 11 | $74312 \cdot 37$ | 175636.6 | $75 \cdot 75$ |
| 12 | $\begin{array}{llll}6 & 2 & 41.00\end{array}$ | $22040 \cdot 0$ | 28. | 12 | 74519.52 | $17492 \cdot 1$ | 76.68 |
| 13 | 6 ¢ $4.50 \cdot 16$ | 215751.7 | $29 \cdot 13$ | 13 | 74726.62 | 174122.0 | $77 \cdot 63$ |
| 14 | $\begin{array}{lllll}6 & 6 & 59 & \cdot 9\end{array}$ | $215456 \%$ | $30 \cdot 18$ | 14 | 74933.66 | $173336 \cdot 2$ | 78.53 |
| 15 | $\begin{array}{lllll}6 & 9 & 8.42\end{array}$ | $215155{ }^{\prime}$ | 31.27 | 15 | $75140 \cdot 65$ | 179545 \% | 7947 |
| 16 | ${ }_{6}^{6} 111175$ | $214848 \cdot 2$ | $32 \cdot 32$ | 16 | 753 <br> 17.59 | $171748 \cdot 2$ | $80 \cdot 38$ |
| 17 | ${ }_{6}^{6} 1326.60$ | $214534 \cdot 3$ | $33 \cdot 38$ | 17 | $\begin{array}{lllll}7 & 55 & 54.47\end{array}$ | 17945.9 | 81.28 |
| 18 | $\begin{array}{llllllll}6 & 15 & 35 \\ 6 & \text { \%6 }\end{array}$ | 214214.0 | 34.45 | 18 | 7 58 1 1 <br> 8 81   | $\begin{array}{lllll}17 & 1 & 38.2 \\ 16 & 53 \\ 16\end{array}$ | $82 \cdot 20$ |
| 19 | 6174470 | 213847.3 | ${ }^{35} 565$ | 19 | 8 0 8 10 <br> 8 8 1  | $165325{ }^{\circ}$ | $83 \cdot 10$ |
| 20 |  | 21 $3514 \cdot 2$ | ${ }^{36.57}$ | 20 |  | $16450 \cdot 4$ | ${ }_{83} 8$ |
| 21 | $6{ }_{6}^{62} 22.69$ | $213134 \cdot 8$ | 37.62 | 21 | 884821.53 | $163642 \cdot 5$ | 84 38 |
| 2 | 62411.65 | ${ }^{21} 2749.1$ | 338.68 | 22 | 8862817 | $162813 \cdot 2$ | $85 \cdot 78$ |
| 3 | $6 \begin{array}{llll}6 & 20 & 57\end{array}$ | $212357 \%$ | $39 \cdot 73$ | 23 | $88 \quad 8 \quad 34 \cdot 77$ | 161938.5 | 86.65 |
| 24 | 628294 | N.21 1958.6 |  | 24 | $81041 \times 32$ | N. 161058.6 |  |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.


## MEAN TIME.

THE MOON'S RIGH'T ASCENSION AND DECLINATION.

| Howr | Right Ancension. | Declination. | $\left\lvert\, \begin{aligned} & \text { Difr. Dec. } \\ & \text { for } 10 \mathrm{~m} . \end{aligned}\right.$ | Hour. | Right Ascension. | Declination. | $\begin{aligned} & \text { Diff, Dee } \\ & \text { for } 10^{\mathrm{m}}, \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MOND | DAY 29. |  |  | TUE | AY 30. |  |
|  | b m | - ${ }^{11}$ | ${ }^{\prime \prime}$ |  | h m | - ${ }^{\prime}$ | " |
| 0 | $1113450 \cdot 91$ | S. $2 \times 50$ | $137 \cdot 18$ | 0 | $122920 \cdot 30$ | S. $8 \quad 16 \quad 28 \quad 8$ | $132 \cdot 97$ |
| 1 | 1113748 | $\begin{array}{lllll}3 & 3 & 5 & & 0\end{array}$ | $137 \cdot 20$ | 1 | $123140{ }^{12}$ | 82946 | $132 \cdot 57$ |
| 2 | $\begin{array}{lllll}11 & 39 & 17 & 71\end{array}$ | $\begin{array}{lllll}3 & 17 & 40\end{array}$ | 137'18 | 2 | 12340 ,08 | $843 \quad 2.0$ | $132 \cdot 18$ |
| 3 | $114131 * 46$ | $33123 \cdot 3$ | $137 \cdot 17$ | 3 | $12 \times 36 \quad 20 \cdot 44$ | 88561511 | $131 \cdot 75$ |
| 4 | $\begin{array}{lllll}11 & 43 & 45 & 45\end{array}$ | $345 \quad 6 \cdot 3$ | 137-12 | 4 | $12 \mathrm{lll} \mathrm{ll}^{12} \mathbf{4 1} 11$ | $\begin{array}{llll}9 & 9 & 25 & 6\end{array}$ | $131 \cdot 32$ |
| 5 | $11.45 \quad 59.68$ | $3{ }^{3} 58489.0$ | $137 \cdot 07$ | 5 | $1241 \quad 2 \cdot 09$ | 9 2\% $33 \times 5$ | $130 \cdot 85$ |
| 6 | $1114814 \cdot 16$ | $41231 \cdot 4$ | $136 \cdot 98$ | 6 | $1243 \quad 23 \quad 38$ | $\begin{array}{llllll}9 & 35 & 38 & 6\end{array}$ | $130 \cdot 38$ |
| 7 | $\begin{array}{lllll}11 & 50 & 28 & 89\end{array}$ | $4{ }^{4} 2613 \cdot 3$ | $136 \cdot 90$ | 7 | $12 \quad 45 \quad 45 \quad 00$ | $94840{ }^{9} 9$ | 129 '88 |
| 8 | $\begin{array}{llll}11 & 52 & 43 & 86\end{array}$ | $\begin{array}{lllll}4 & 39 & 54 & 7\end{array}$ | $136 \cdot 82$ | 8 | $\begin{array}{llll}12 & 48 & 6^{*} 93\end{array}$ | $10 \quad 140$ | 129 '38 |
| 9 | $115459 * 9$ | $433 \quad 35 \quad 6$ | $136 \cdot 68$ | 9 | $125029 \cdot 18$ | $10 \quad 14 \quad 36 \cdot 5$ | $128 \cdot 85$ |
| 10 | $\begin{array}{llll}11 & 57 & 14 & 58\end{array}$ | $\begin{array}{lllll}5 & 7 & 15 & 7\end{array}$ | $136 \cdot 55$ | 10 | $\begin{array}{lllllllllll}12 & 52 & 51 & 76\end{array}$ | $\begin{array}{llll}10 & 27 & 29\end{array} 6$ | $128 \cdot 30$ |
| 11 | $\begin{array}{llllll}11 & 59 & 30 & 33\end{array}$ | $\begin{array}{lllll}5 & 20 & 55 & 0\end{array}$ | $136 \cdot 40$ | 11 | 125514.67 | 1040 | $127 \cdot 73$ |
| 12 | $12 \times 146 ; 34$ | $\begin{array}{llllll}5 & 34 & 33 & 4\end{array}$ | $136 \cdot 23$ | 12 | $125737 \cdot 90$ | $\begin{array}{llll}10 & 53 & 5 & 8\end{array}$ | $127 \cdot 15$ |
| 13 |  | $\begin{array}{llll}5 & 48 & 10 & 8\end{array}$ | $136 \cdot 07$ | 13 | $\begin{array}{llll}13 & 0 & 1 & 46\end{array}$ | $\begin{array}{llll}11 & 5 & 48 & 7\end{array}$ | $126 \cdot 53$ |
| 14 | $\begin{array}{llll}12 & 6 & 19 & 17\end{array}$ | $\begin{array}{lllll}6 & 1 & 47 & 2\end{array}$ | $135 \cdot 85$ | 14 | $13 \sim 295$ | $111827^{\circ} 9$ | $125 \cdot 92$ |
| 15 | $\begin{array}{llll}12 & 8 & 36 & \\ 12 & 00\end{array}$ | $\begin{array}{llll}6 & 15 & 22 & 3\end{array}$ | $135 \cdot 65$ | 15 | $\begin{array}{llll}13 & 4 & 49 & 57\end{array}$ | $11 \begin{array}{lll}11 & 31 & 3\end{array}$ | $125 \cdot 28$ |
| 16 | $\begin{array}{lllll}12 & 10 & 53 & 10\end{array}$ | $\begin{array}{llll}6 & 28 & 56 & 2\end{array}$ | $135 \cdot 42$ | 16 | $\begin{array}{llll}13 & 7 & 14 & 13\end{array}$ | $11 \begin{array}{llll}11 & 43 & 35 & 1\end{array}$ | $124 \cdot 62$ |
| 17 | $\begin{array}{llllll}12 & 13 & 10 & 49\end{array}$ | $\begin{array}{lllll}6 & 42 & 28 & 7\end{array}$ | $135 \cdot 17$ | 17 | $13.939 \cdot 02$ | $\begin{array}{llll}11 & 56 & 2\end{array} 8$ | 123 '95 |
| 18 | $\begin{array}{llll}12 & 15 & 28 & 16\end{array}$ | $\begin{array}{llll}6 & 55 & 59 & 7\end{array}$ | $134 \cdot 90$ | 18 | $\begin{array}{llll}13 & 12 & 4 & 24\end{array}$ | $\begin{array}{llll}12 & 8 & 26 & \\ 12 & 5\end{array}$ | $123 \cdot 23$ |
| 19 | $121746{ }^{12} 111$ | $\begin{array}{lllll}7 & 9 & 29 & 1\end{array}$ | $134 \cdot 62$ | 19 | $\begin{array}{llll}13 & 14 & 29 & 80\end{array}$ | $\begin{array}{llll}12 & 20 & 45\end{array}$ | $122 \cdot 52$ |
| 20 | $\begin{array}{lll}12 & 20 & 4 \cdot 36\end{array}$ | $72256 \cdot 8$ | $134 * 32$ | 20 | $\begin{array}{llllllllllllll}13 & 16 & 5 & 5 & 70\end{array}$ | 123311.0 | $121 \cdot 80$ |
| 21 | $\begin{array}{llll}12 & 22 & 22 & 90\end{array}$ | $73622 \cdot 7$ | $134 \cdot 02$ | 21 | $\begin{array}{lllll}13 & 19 & 21 & \text { *94 }\end{array}$ | 12451118 | $121 \cdot 03$ |
| 22 | $\begin{array}{llll}12 & 24 & 41 & 73\end{array}$ | $74946 \cdot 8$ | $133 \cdot 67$ | 22 | $\begin{array}{lllll}13 & 21 & 48 & 51\end{array}$ | $\begin{array}{lllll}12 & 57 & 18 & 0\end{array}$ | $120 \cdot 27$ |
| 93 | $\begin{array}{lll}12 & 27 & 0 \\ 12 & 87\end{array}$ | $8 \quad 3 \quad 8 \cdot 8$ | $133 \cdot 33$ | 23 | $\begin{array}{lllll}13 & 24 & 15 & 43\end{array}$ | $\begin{array}{llll}13 & 9 & 19 & 6\end{array}$ | 119.47 |
| 24 | $122920 \cdot 30$ | S. 816 |  | 24 | $132642 \cdot 68$ | S. 13 21 16.4 |  |

## PHASES OF THE MOON.




MEAN TIME.

| Day of the Month. | THE SUN'S Apparent |  | Logarithm of the Radius Vector of the Earth. | 'THE MOON'S |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Longitude. | Lititude. |  | Semidiameter. |  | Hurizoutal 1 ${ }^{\text {arallax. }}$ |  |
|  | Noол. | Noon. | Noon. | Noon. | Mithight. | Norn. | Midnight. |
|  | $1^{\circ} 10^{\prime \prime}$ | ) |  | $1{ }^{\prime \prime}$ |  |  |  |
| 1 | 41 10 36  | S. 0 * 8 | $0 \cdot 0036155$ | $\begin{array}{llll}16 & 38 & 4\end{array}$ | 16413 | $61 \quad 3 \cdot 9$ | $6114 \%$ |
| 2 | $42 \quad 8 \quad 43 \cdot 3$ | $0 \cdot 18$ | $0 \cdot 0037217$ | 1643 '0 | $1643 \cdot 3$ | $6190 \cdot 6$ | 61218 |
| 3 | $\begin{array}{llllll}43 & 6 & 48 & 4\end{array}$ | S. $0 \cdot 06$ | $0 \cdot 0038274$ | $1642 \cdot 2$ | 1639 '8 | $61 \quad 17$ * | 61 9 - |
| 4 | $44 \quad 4 \quad 51 \% 9$ | N. $0 \cdot 07$ | 0.0039326 | $16 \quad 36: 3$ | $16 \quad 31 \cdot 5$ | $60 \quad 55 \cdot 9$ | $6038 \cdot 6$ |
| 5 | 45 2 53.9 | (0) 22 | $0 \cdot 0040371$ | $16 \quad 25 \cdot 9$ | $16 \quad 19.6$ | $60 \quad 18$ '0 | 5954 |
| 6 | 46 | $0 \cdot 35$ | $0 \cdot 0041409$ | $16 \quad 12 \cdot 6$ | $16 \quad 5 \cdot 2$ | $59 \mathrm{~g} 9 \cdot 2$ | 59) 2'1 |
| 7 | $46 \quad 58 \quad 53 \quad 5$ | $0 \cdot 47$ | $0 \cdot 0042439$ | $\begin{array}{lll}15 & 57 & 6\end{array}$ | $15 \quad 50 \cdot 1$ | $\begin{array}{llll}58 & 34\end{array}$ | $58 \quad 6$ |
| 8 | $475651 * 3$ | () 58 | 0.0043459 | $15 \quad 42 \cdot 5$ | $\begin{array}{llll}15 & 35 & \end{array}$ | $57 \quad 38 \cdot 9$ | 57124 |
| 9 | $48 \quad 5147$ | 0.67 | $0 \cdot 0044166$ | $1528 \cdot 1$ | $15 \quad 21.9$ | 56 47 0 | 56 23 2 |
| 10 | $4952842 \cdot 9$ | $0 \cdot 73$ | $0 \cdot 0045460$ | $\begin{array}{lll}15 & 15 & 8\end{array}$ | $15 \quad 10 \cdot 3$ | $56 \quad 0{ }^{5} 9$ | $55 \quad 40 \cdot 6$ |
| 11 | 50 | 0 $\cdot 76$ | $0 \cdot 0046440$ | $15 \quad 5 \cdot 3$ | $15 \quad 0 \cdot 7$ | $55 \quad 22 \cdot 1$ | $55 \quad 5 \cdot 4$ |
| 12 | $\begin{array}{lllll}51 & 48 & 29 & & 5\end{array}$ | $0 \cdot 77$ | $0 \cdot 0047405$ | $1456 \cdot 7$ | $1453 \cdot$ | $54 \quad 50 \cdot 7$ | $5437 \cdot 9$ |
| 13 | $524620 * 9$ | $0 \cdot 75$ | $0 \cdot 0048352$ | $1450 \cdot 2$ | $1447 \cdot 6$ | 5426.8 | $5 \pm 17{ }^{\prime}$ |
| 14 | $\begin{array}{lllllll}53 & 44 & 11 & 1\end{array}$ | 0.69 | $0 \cdot 0049281$ | $1445 \cdot 5$ | $1443 \cdot 8$ | 54 () 5 | $51 \quad 3 \cdot 1$ |
| 15 | 54 42 0.1 | $0 \cdot 61$ | $0 \cdot 0050192$ | $1442 \cdot 5$ | $1441 \cdot 7$ | $\begin{array}{lllll}53 & 58\end{array}$ | $\begin{array}{llll}53 & 55\end{array}$ |
| 16 | $\begin{array}{llll}55 & 39 & 47 & 7\end{array}$ | $0 \times 50$ | $0 \cdot 0051081$ | 14413 | $1441 \cdot 1$ | 53583 | 53 53  |
| 17 | $\begin{array}{lllll}56 & 37 & 33 & 9\end{array}$ | $0 \cdot 38$ | $0 \cdot 0051949$ | $1441 \cdot 4$ | $1442 \cdot 0$ | 53.54 | $\begin{array}{llll}53 & 56 & 7\end{array}$ |
| 18 | $\begin{array}{lllll}57 & 3 & 5 & 18\end{array}$ | 0'26 | 0-0052796 | $1443 \cdot 0$ | 1444 | $54 \quad 0 \cdot 4$ | $54 \quad 5 \cdot 4$ |
| 19 | $\begin{array}{llll}58 & 33 & 2 & 3\end{array}$ | N. $0 \cdot 13$ | 0) $\cdot 0053621$ | 1446 | $1448 \cdot 4$ | 51120 | $5420 \cdot 0$ |
| 20 | $593044 * 3$ | 0.00 | $0 \cdot 0054425$ | $1451{ }^{14}$ | $1457^{\circ} 0$ | 54 29 \% | $5440 \cdot 6$ |
| 21 | $60-2824 \cdot 7$ | S. $0 \cdot 12$ | $0 \cdot 0055209$ | $1457 \cdot 1$ | $15 \quad 1 \times 3$ | $5453 \cdot 3$ | $55 \quad 7 \cdot 6$ |
| 22 | $61 \sim 6 \quad 3 \quad 8$ | $0 \cdot 21$ | 0-0055972 | $15 \quad 5 \cdot 7$ | $1510 \%$ | $55 \quad 23 \cdot 7$ | $5541 \%$ |
| 23 | 62 23 $41 \cdot 3$ | $0 \cdot 28$ | $0 \cdot 0056717$ | $\begin{array}{lll}15 & 15 & 9\end{array}$ | 1521.6 | $56 \quad 1 \cdot 1$ | 56292 |
| 24 | $\begin{array}{llllll}63 & 21 & 17 & \end{array}$ | 0-33 | 0 '0057445 | $15 \quad 27$ '9 | $1534 \%$ | $56 \quad 45$ | 57 9'4 |
| 25 | $64 \quad 1851 \cdot 8$ | 0'34 | $0 \cdot 0058155$ | $1541 \cdot 5$ | $1548 \cdot 6$ | 57349 | $58 \quad 1 \cdot 2$ |
| 26 | 65 | 0 '33 | $0 \cdot 0058850$ | $15 \quad 55 \quad 9$ | $16 \quad 3 \cdot 2$ | 5827 | 5854 |
| 27 | $\begin{array}{lllllllllllllllllll}66 & 13 & 56 & \end{array}$ | 0) 28 | $0 \cdot 0059530$ | $16 \quad 10 \cdot 3$ | $16 \quad 17{ }^{1} 1$ | $5920 \cdot 8$ | 5945 |
| 28 | $\begin{array}{llll}67 & 11 & 27 & \\ \end{array}$ | $0 \cdot 21$ | $0 \cdot 0060196$ | $16 \quad 23 \cdot 5$ | $1629 \cdot 1$ | 60.9 | 6089 |
| 29 | 68 8 8 $566^{\circ} 0$ | S. $0 \cdot 11$ | $0 \cdot 0000849$ | $16 \quad 33 \cdot 9$ | 16377 | $60 \times 7 \%$ | 61 1 - |
| 30 | $\begin{array}{llll}69 & 6 & 23 & 8\end{array}$ | N. $0^{4} 01$ | $0 \cdot 0061489$ | $16 \cdot 40 \cdot 3$ | 16 41 7 | $6110{ }^{6} 9$ | $61 \quad 16 \%$ |
| 31 | $\begin{array}{llll}70 & 3 & 50 & 6\end{array}$ | $0 \cdot 14$ | $0 \cdot 0062117$ | $16.41 \cdot 8$ | $1640 \cdot 6$ | $6116 \cdot 5$ | 61119 |
| 32 | $\begin{array}{llll}71 & 1 & 16 & 4\end{array}$ | N. 0 -28 | $0 \cdot 0062733$ | $16 \mathrm{~s} \cdot 1$ | $1634 \cdot 4$ | $61 \quad 2 \cdot 7$ | 6049 |


| MEAN 'TIME. |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 'THE MOON'S |  |  |  |  |  |
|  |  | Longit | itude. |  | tude. | Age. |  |
|  |  | Noon. | AFidnight. | Nion. | Midnight. | Nown. | Passage. |
| Wed. | 1 | $205^{\circ} 0^{\prime} 0^{\prime \prime} 6^{\prime \prime} \cdot 0$ | $212^{\circ} 35^{\prime} 8^{\prime \prime} 8^{\prime} 3$ | S. $3^{\circ} 56^{\prime}$ A $11^{\prime \prime} \cdot 5$ | S. $3^{\circ} 27^{\prime} 46^{\prime \prime} \cdot 6$ | $13{ }^{4} \cdot 8$ | $11^{h} 14^{\mathrm{m}} \mathrm{~g}$ |
| Thur. | 2 | 220 | 22749 | 2 2 5158 | $\underline{2}$ is $58 \cdot 2$ | 14.8 | 12154 |
| Frid. | 3 | $\begin{array}{llllll}235 & 26 & 10 & 6\end{array}$ | 213 0.55\% | $14030 \cdot 6$ | S. 10023.6 | $15 \cdot 8$ | $13 \quad 18 \%$ |
| Sat. | 4 | $2503233 \cdot 2$ | $\begin{array}{llll}258 & 0 & 5 & 8\end{array}$ | S. 0 19 1927.6 | N. 02128.2 | $16 \cdot 8$ | $14.22 \cdot 1$ |
| Sut. | 5 | 265 $22.43 \cdot$ | 272 $3946 \cdot 7$ | N. 1113871 | $\begin{array}{llll}1 & 40 & 16.2\end{array}$ | 17 's | 15 |
| Mon: | 6 | $2795048 \cdot 3$ | 28665031.1 |  | $25042 \cdot 0$ | 18 '8 | 1622.0 |
| Tues, | 7 | $2935347 \cdot 2$ | $3004537 \cdot 6$ | 321315 | 34857 '3 | 19 '8 | $17 \quad 15$ '8 |
| Wed. | 8 | $3073110 \%$ | $3141038 \cdot 4$ | $41245 \cdot 2$ | $\begin{array}{lllll}4 & 32 & 45\end{array}$ | $20 \cdot 8$ | 18 515 |
| Thur. | 9 | $3204121^{\circ} 0$ | $3271239 \cdot 1$ | 4 48 52-3 | 5 1 $14^{\prime} 0$ | 21 '8 | 18517 |
| Frid. | 10 | $\begin{array}{llllll}333 & 35 & 57 & 6\end{array}$ | 3395440 '8 | $\begin{array}{lllll}5 & 9 & 20 & 9\end{array}$ | $\begin{array}{llll}5 & 13 & 46 & 3\end{array}$ | $22 \cdot 8$ | $1935 \cdot 8$ |
| Sat. | 11 | $346 \quad 914 \cdot 9$ | 352 20 5 8 | $\begin{array}{llll}5 & 14 & 25\end{array}$ | $\begin{array}{lllll}5 & 11 & 23 & 4\end{array}$ | $23 \cdot 8$ | $2018 \cdot 5$ |
| Sun. | 12 | $358 \quad 2738$ 's | $43218 \cdot 6$ | $\begin{array}{lllll}5 & 4 & 49 & 3\end{array}$ | 154521 | 24'8 | $21 \quad 0.9$ |
| Mon. | 13 | 1034.28 | 163429.9 | $44141 \cdot 1$ | $4 \quad 95 \quad 29.3$ | $25 \cdot 8$ | $2143 \cdot 8$ |
| Tues, | 14 | 22 $3244^{\circ} 6$ | $282931 \cdot 5$ | 4627.0 | $\begin{array}{llllllllll}3 & 11 & 48\end{array}$ | $26 \cdot 8$ | 22.279 |
| Wed. | 15 | $\begin{array}{llll}31 & 25 & 9\end{array}$ | $40 \begin{array}{llll}40 & 19 & 5 & 1\end{array}$ | 32048 | $25440 \cdot 4$ | 27 '8 | $2313 \cdot 4$ |
| Thur | 16 | $46 \quad 14 \quad 6 \cdot 1$ | $52758{ }^{5}$ | 226417 | $\begin{array}{llll}1 & 57 & 9 & 0\end{array}$ | $28 \cdot 8$ | ठ |
| Frid. | 17 | 5816 | $\begin{array}{llll}63 & 55 & 49 & 7\end{array}$ | $\begin{array}{lllllll}1 & 26 & 19 & 6\end{array}$ |  | $\cdots$ | $\begin{array}{llll}0 & 0 & 6 \\ 0 & 49 & \end{array}$ |
| Sat. | 18 | 695029 | $\begin{array}{lllllllll}75 & 45 & 41\end{array}$ | N. 022 F 5 8 | S. $0 \quad 10 \quad 40 \cdot 7$ | $1 \cdot 1$ | $0.49 \cdot 1$ |
| Sun. | 19 | $8142 \quad 6 \cdot 2$ | $873955 \cdot 2$ | S. $0.43-27 \cdot 1$ | $\begin{array}{lllll}1 & 15 & 53 & 7\end{array}$ | $2 \cdot 1$ | 1 38.3 |
| Mon. | 20 | 938929 | $99 \quad 4188$ | $1 \begin{array}{llll}17 & 40 & 5\end{array}$ | 2 18 | $3 \cdot 1$ | 2 27 |
| Tues. | 21 |  | 11152204 | 247530 | 31538 | 4.1 | 3165 |
| Wed, | 22 | $118 \quad 241.9$ | $\begin{array}{lllll}124 & 16 & 48 & 3\end{array}$ | 34122.2 | $4 \quad 4 \quad 45 \cdot 2$ | $5 \cdot 1$ | 44.5 |
| Thur. | $\underline{2}$ | $\begin{array}{llll}130 & 35 & 5 & 7\end{array}$ | 136 58 $00 \cdot 4$ | 125270 | 44388 | $6 \cdot 1$ | 451.6 |
| Frid. | 24 | 143 25 572 | $\begin{array}{lllllllllllllllllll}149 & 59 & 19\end{array}$ | $45728 \times$ | $\begin{array}{llll}5 & 8 & 9 & 6\end{array}$ | 7'1 | $538 \cdot 4$ |
| Sat. | 25 | $15638 \times 8.0$ | $163 \quad 23 \quad 39{ }^{\circ} 0$ | 5 l | $\begin{array}{lllll}5 & 17 & 26 \cdot 4\end{array}$ | $8 \cdot 1$ | 6 25  <br> 7   |
| Suh. | 26 | 170 | $1771248 \cdot 9$ | $51531 \cdot 5$ | $\begin{array}{lllll}5 & 8 & 59 & 1\end{array}$ | $9 \cdot 1$ | 713 '5 |
| Mon. | 27 | 18416510 | $\begin{array}{llll}191 & 27 & 0 & 0\end{array}$ | 45742 | $44138 \cdot 5$ | $10 \cdot 1$ | $8 \quad 3 \cdot 9$ |
| Tues. | 28 | 198 42 $56 \cdot 2$ | 206 \& 9 9 2 | $42052 \cdot 7$ | 3 55 34 | $11 \cdot 1$ | 8575 |
| Wed. | 29 | 213 2y $59 \cdot 5$ | 22059537 | $\begin{array}{llll}3 & 26 & 3 & 7\end{array}$ | $25245 \cdot 3$ | $12 \cdot 1$ | $\begin{array}{lll}9 & 5.5 \cdot 1\end{array}$ |
| Thur. | 30 | $\begin{array}{lll}228 & 32 & 6 \cdot 7\end{array}$ | $236 \quad 6 \quad 22 \cdots$ | $\begin{array}{lllll}2 & 16 & 13 & 5\end{array}$ | 1378.4 | $13 \cdot 1$ | $1056 \cdot 5$ |
| Frid. | 31 | $2434115 \cdot 7$ | $25115 \quad 36 \cdot 8$ | S. 0.056167 | S. 01.1597 | 1+1 | $12 \quad 0 \% 4$ |
| Sut. | 32 | $2584815 * 9$ | $266 \quad 18 \quad 6 \cdot 3$ | N.0 27274 | $\begin{array}{lllll}\text { N. } 1 & 8 & 38 & 3\end{array}$ | $15 \cdot 1$ | $13 \quad 4 \cdot 5$ |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Hour. | Right Ascension. | Declination. | Dif, Dec. <br> for $10^{\mathrm{m}}$. | Hour. | Right Ascension. | Declination. | Diff. Dee for $10{ }^{\mathrm{mm}}$. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | FRIDAY 17. |  | $\stackrel{\prime \prime}{40 \cdot 68}$ |  | SUNDAY 19. |  | $\stackrel{\prime \prime}{9 \cdot 20}$ |
|  | $\begin{array}{ll} \mathrm{h} & \mathrm{~m} \\ 3 & 41^{5} \cdot 73 \end{array}$ | $\left\|\begin{array}{ccc} 0 \\ \mathrm{~N} .21^{\circ} & 8 & 21 \\ \hline \end{array}\right\|$ |  |  | $\begin{array}{llll} { }_{5}^{\mathrm{h}} & 24^{\mathrm{m}} & 3^{\mathrm{s}} & 57 \end{array}$ | $\left\lvert\, \begin{array}{ccc} \circ & { }^{\prime \prime} & { }^{\prime \prime} \\ & 28^{\prime} & 33^{\prime} \end{array}\right.$ |  |
|  |  |  |  |  |  |  |  |
| 1 | $\begin{array}{llllllllll}3 & 43 & 47 & 49\end{array}$ | $211295 *$ | $39 \cdot 72$ | 1 | $\begin{array}{lllll}5 & 26 & 12 & \prime 85\end{array}$ | $22.2738 \cdot 5$ | $10 \times 30$ |
| 2 | $\begin{array}{llllllllll}3 & 45 & 53 & 38\end{array}$ | $\begin{array}{llll}21 & 16 & 23 & 9\end{array}$ | 38 75 | 2 | $\begin{array}{llllll}5 & 28 & 29 & 15\end{array}$ | $22636 \cdot 7$ | $11 \cdot 35$ |
| 3 | 34759.39 | $\begin{array}{lllllllllll}21 & 20 & 16 & 4\end{array}$ | $37^{777}$ | 3 | $\begin{array}{lllll}5 & 30 & 31 & 45\end{array}$ | 22 25528.6 | $12 \cdot 45$ |
| 4 | $\begin{array}{llll}3 & 50 & 5 & 52\end{array}$ | $21 \quad 24 \quad 3 \cdot 0$ | $36 \cdot 78$ | 4 | $5 \quad 32 \cdot 40 \cdot 75$ | $\begin{array}{llllll}29 & 24 & 13 & \end{array}$ | 13.50 |
| 5 | $\begin{array}{lllll}3 & 52 & 11 & 77\end{array}$ | $\begin{array}{lllll}21 & 27 & 43 \cdot 7\end{array}$ | $35 \cdot 82$ | 5 | $\begin{array}{lllll}5 & 34 & 50 & 76\end{array}$ | $\begin{array}{llll}22 & 29 & 52 & 9\end{array}$ | 14.60 |
| 6 | $\begin{array}{lllllllllll}3 & 54 & 18 & 14\end{array}$ | $213118 \cdot 6$ | $34 \cdot 82$ | 6 | $\begin{array}{lllllll}5 & 36 & 59 & 36\end{array}$ | $22 \times 125: 3$ | 67 |
| 7 | $\begin{array}{lllll}3 & 56 & 24 & 63\end{array}$ | $213447 \cdot 5$ | 33 '82 | 7 | $\begin{array}{llll}5 & 39 & 8 & 67\end{array}$ | $921951{ }^{2}$ | '75 |
| 8 | $\begin{array}{llllllllll}3 & 58 & 31\end{array}$ | $\begin{array}{llllll}21 & 38 & 10 & 4\end{array}$ | 32 | 8 | $\begin{array}{llllll}5 & 41 & 17 & 97\end{array}$ | $221810 \cdot 8$ | '82 |
| 9 | $4{ }^{4}$ | 2141973 | 31 | 9 | $\begin{array}{llllll}5 & 43 & 27 & 26\end{array}$ | $\begin{array}{llll}22 & 16 & 23\end{array}$ | '88 |
| 10 | $4 \quad 2 \quad 44 \cdot 78$ | $214438 \cdot 3$ | $30 \cdot 82$ | 10 | $\begin{array}{lllll}5 & 45 & 36 & 53\end{array}$ | 2214 | '97 |
| 11 | $4 \quad 451 \cdot 72$ | $214743 \cdot 2$ | $29 \cdot 82$ | 11 | $\begin{array}{llll}5 & 47 & 45 & 80\end{array}$ | 221230 | '03 |
| 12 | $4 \quad 6 \quad 58 \cdot 76$ | $215042 \cdot 1$ | $28 \cdot 80$ | 12 | $\begin{array}{llll}5 & 49 & 55 & 05\end{array}$ | $\begin{array}{llll}22 & 10 & 9\end{array}$ | '10 |
| 13 | $4 \quad 9 \quad 5 \quad 5: 91$ | 2153134.9 | $27 \cdot 78$ | 13 | $\begin{array}{llll}5 & 52 & 4 & 28\end{array}$ | 228812 | $23 \cdot 18$ |
| 14 | $\begin{array}{llll}4 & 11 & 13 & 17\end{array}$ | 215621.6 | $26 \cdot 77$ | 14 | $\begin{array}{llllll}5 & 54 & 13 & 49\end{array}$ | $22 \quad 5 \quad 52$ '9 | $24 \cdot 23$ |
| 15 | $\begin{array}{llll}4 & 13 & 20 & 52\end{array}$ | $2159 \quad 2 \cdot 2$ | $25 \cdot 75$ | 15 | $\begin{array}{llllll}5 & 56 & 22 & 68\end{array}$ | $\begin{array}{llll}29 & 3 & 27 & 5\end{array}$ | $25 \cdot 32$ |
| 16 | 4 15 27  | $22 \quad 136 \cdot 7$ | $24 \cdot 72$ | 16 | $5{ }_{5}^{5} 58831 \quad 34$ | 22 055 | 26 '37 |
| 17 | $417{ }^{4} 1752$ | 22.450 | $23 \cdot 70$ | 17 | $\begin{array}{llll}6 & 0 & 40 & 97\end{array}$ | 215817 | 27.45 |
| 18 | $419 \quad 43 \cdot 16$ | $22 \quad 627 \cdot 2$ | $22 \cdot 67$ | 18 | $\begin{array}{llll}6 & 2 & 50 & 08\end{array}$ | 215532 | $28 \cdot 50$ |
| 19 | $\begin{array}{llll}4 & 21 & 50\end{array} 90$ | $22 \quad 8 \quad 43 \times$ | $21 \cdot 62$ | 19 | $\begin{array}{lll}6 & 4 & 59\end{array} 15$ | 215241 | 29.55 |
| 20 | $42358 \cdot 72$ | 2210529 | $20 \cdot 60$ | 20 | $\begin{array}{llll}6 & 7 & 8 & 18\end{array}$ | 214944 | $30 \cdot 62$ |
| 21 | $426 \quad 6.63$ | 22 12 | $19 \cdot 55$ | 21 | $\begin{array}{llll}6 & 9 & 17 & 18\end{array}$ | 214640 | 167 |
| 22 | 428814.62 | $221453 \cdot 8$ | $18 \cdot 50$ | 22 | $\begin{array}{llll}6 & 11 & 26 & 14\end{array}$ | 214330 | 32 '73 |
| 23 | $430 \quad 22 \times 69$ | N.22 1644 '8 | $17^{4} 4$ | 23 | $\begin{array}{llll}6 & 13 & 35 & 06\end{array}$ | N.21 $4014 \cdot 3$ | 33 \% |
|  | $\text { SATURDAY } 18 .$ |  |  |  | MONDAY 20. |  |  |
| 0 | $43230 \cdot 85$ | N.e2 18 29 \% | $16 \cdot 42$ | 0 | $\begin{array}{llll}6 & 15 & 43 & 94\end{array}$ | N. 213651 | *3 |
| 1 | 443439.08 | 228088 | $15 \cdot 37$ | 1 |  | 213322.6 | $35 \cdot 87$ |
| 2 | $43647 \cdot 39$ | $222140 * 3$ | $14 \cdot 30$ | 2 | $\begin{array}{llll}6 & 20 & 1 & 56\end{array}$ | $219947 \times 4$ | $36 \cdot 92$ |
| 3 | $43855 \cdot 76$ | $22 \quad 23 \quad 6 \cdot 1$ | $13 \cdot 7$ | 3 | $\begin{array}{lllllllll}6 & 22 & 10 & 29\end{array}$ | $2126 \quad 5{ }^{1} 9$ | $37 \cdot 97$ |
| 4 | $441 \quad 4 \cdot 21$ | 22 24 $25 \cdot 7$ | $12 \cdot 20$ | 4 | $\begin{array}{lllll}6 & 24 & 18 & & 97\end{array}$ | 21 92 18 | $39^{\circ} 00$ |
| 5 | $44312 \cdot 72$ | 22 25 38  | $11 \cdot 15$ | 5 | $\begin{array}{lllll}6 & 26 & 27 & 60\end{array}$ | 211894 | $40 \cdot 05$ |
| 6 | 44521.29 | $22 \quad 2645 \cdot 8$ | $10^{\prime} 08$ | 6 | $\begin{array}{lllllllllll}6 & 28 & 36 & 18\end{array}$ | $21 \begin{array}{lll}21 & 14 & 23\end{array}$ | $41 * 7$ |
| 7 | 44729.93 | 22.2746 | $9 \cdot 02$ | 7 | $\begin{array}{llll}6 & 30 & 44 & 70\end{array}$ | 211017 | $42 \cdot 10$ |
| 8 | 44938.63 | $\begin{array}{lllllllllllll}22 & 28 & 40 & 4\end{array}$ | 7'95 | 8 |  | 2164 | $43 \cdot 15$ |
| 9 | $4 \begin{array}{lllll}4 & 51 & 47 & 38\end{array}$ | 22.29281 | $6 \cdot 90$ | 9 | $6{ }_{6}^{6} 3511 \cdot 56$ | $\begin{array}{lll}21 & 1 & 45\end{array}$ | $44^{.}$ |
| 10 | $\begin{array}{llllll}4 & 53 & 56 & 18\end{array}$ | $\begin{array}{llll}22 & 30 & 9 & \end{array}$ | $5 \cdot 82$ | 10 | $\begin{array}{llll}6 & 37 & 9 & 90\end{array}$ | 205791 | 45 |
| 11 | $\begin{array}{lllll}4 & 56 & 5 & 04\end{array}$ | $2230 \quad 44 \cdot 4$ | 477 | 11 | $\begin{array}{lllll}6 & 39 & 18 & 17\end{array}$ | 2052949 | $46 \cdot 20$ |
| 12 | $\begin{array}{lllllll}4 & 58 & 13 & 94\end{array}$ | 223113.0 | 3.68 | 12 | 6 41 26.38 | 204812 | $47 \cdot 23$ |
| 13 | $5 \quad 0 \quad 22$ '89 | $223135 \cdot 1$ | $2 \cdot 63$ | 13 | $\begin{array}{llllll}6 & 43 & 34 & 32\end{array}$ | 20.43129 | 48 '23 |
| 14 | $5 \quad 231 * 89$ | 223150 | 1 55 | 14 | $\begin{array}{lllll}6 & 45 & 42 & 60\end{array}$ | $\begin{array}{llll}20 & 38 & 39 & 8\end{array}$ | $49 \cdot 25$ |
| 15 | $5 \quad 4 \quad 40 \cdot 92$ | 223200 | $0 \cdot 47$ | 15 | $64750 \cdot 60$ | 2033344 | $50 \cdot 25$ |
| 16 | $\begin{array}{llll}5 & 6 & 49\end{array}$ | 223230 | 0 0.60 | 16 | $\begin{array}{llllllllll}6 & 49 & 58 & \cdot 53\end{array}$ | 209842 | $51 \cdot 27$ |
| 17 | $\begin{array}{lllll}5 & 8 & 59 & & 09\end{array}$ | 223159.4 | 1'67 | 17 | $\begin{array}{llll}6 & 52 & 6 & 39\end{array}$ | $20 \quad 23$ | 52 |
| 18 | $5{ }_{5}^{5} 11188$ | $223149 \cdot 4$ | $4 \quad 2 \cdot 75$ | 18 | $\begin{array}{lllll}6 & 54 & 14 & 18\end{array}$ | $20 \quad 18$ 21 | $7 \quad 53$-25 |
| 19 | $\begin{array}{lllll}5 & 13 & 17 & 40\end{array}$ | 2231329 | 9 $3 \cdot 82$ | 19 | $\begin{array}{lllll}6 & 56 & 21 & 89\end{array}$ | 2013 | 254.25 |
| 20 | $\begin{array}{llllll}5 & 15 & 26 & 59\end{array}$ | $22 \mathrm{31} 11^{2} 0^{\circ} 0$ | - $4 \cdot 90$ | 20 | $\begin{array}{lllll}6 & 58 & 29 & & 53\end{array}$ | $20 \quad 736$ | $7{ }^{7} 55$. |
| 21 | $5 \begin{array}{llll}5 & 17 & 35 & 81\end{array}$ | $\begin{array}{lllllllllllll}22 & 30 & 40\end{array}$ | $5 \cdot 97$ | $\stackrel{1}{1}$ | $7 \quad 0$   <br> 7 3  | $20 \sim$ |  |
| 29 | $\begin{array}{llllll}5 & 19 & 45 & 04\end{array}$ | $2930 \quad 4 \cdot 8$ | $7 \cdot 05$ | 22 | $7 \quad 244 \cdot 57$ | 195628 | 5) 20 |
| 23 | $\begin{array}{lllll}5 & 21 & 54 & 30\end{array}$ | 222929.5 | 5 8-13 | 23 | $7 \begin{array}{llll}7 & 4 & 51 & 97\end{array}$ | $195044 \cdot 8$ | 58 '18 |
| 24 | $5 \cdot 24 \quad 3 \cdot 57$ | N. 22 28 $33 \cdot 7$ |  | 24 | $\begin{array}{llll}7 & 6 & 59 & 29\end{array}$ | N. 194455 |  |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

| nour | Right Ascensio | Declination. | $\begin{aligned} & \text { if. Dec, } \\ & \text { onf } \end{aligned}$ | Hour. | Right Ascension. | Declination. | Din. Dec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | A |  |  | THURSDAY 23. |  |  |
| 0 | 7 7-59-29 | $194455 \cdot 7$ | ${ }_{59}^{\prime \prime} \cdot 15$ | 0 | $\begin{gathered} \mathrm{h} \\ 8 \end{gathered} \mathrm{~m}^{3} 13 .$ | $\begin{array}{lll} \circ & 1 \\ 3 & 20 & \\ 0 & 8 \end{array}$ | -97 |
| 1 | $\begin{array}{lrrr}7 & 9 & 6 & 53\end{array}$ | $1939 \quad 0 \cdot 8$ | $60 \cdot 12$ | 1 | 8 <br> 8 $4916 \cdot 96$ | $\begin{array}{rrrr}13 & 20 & 9 & 8 \\ 13 & 10 & 10 & 8\end{array}$ | $99 \cdot 97$ 00.68 |
| 2 | $7 \begin{array}{llll}7 & 11 & 13 & 69\end{array}$ | 1933 0-1 | $61 \times 07$ | 2 | $85120 \cdot 41$ | $\begin{array}{llll}13 & 0 & 5 & 9\end{array}$ |  |
| 3 | $\begin{array}{lllll}7 & 13 & 20 & 77\end{array}$ | $192653 \cdot 7$ | 62 •0 | 3 | 8 8 5323181 | 124957 |  |
| 4 | 7159777 | $192041 \%$ | $63 \times 0$ | 4 | $855527 \cdot 16$ | $\begin{array}{lllllllllll}12 & 39 & 45 & 4\end{array}$ | $102 \cdot 77$ |
| 5 | $71734 \% 8$ | $191423 \cdot 5$ | $63 \cdot 93$ | 5 | $85730 \cdot 46$ | 12 Ly 28.6 | 47 |
| 6 | $\begin{array}{lllll}7 & 19 & 41 & 51 \\ 7 & 21 & 48 & 25\end{array}$ | $\begin{array}{llll}19 & 7 & 59 & 4 \\ 19 & 1 & 30 & 5\end{array}$ | $64 \cdot 90$ | 6 | $885933 \cdot 73$ | 121978 | 13 |
| 8 |  | $\begin{array}{lllll}19 & 1 & 30 & 5 \\ 18 & 5 & 5 \\ 18 & 5 & 5\end{array}$ | $65 \cdot \mathrm{~s} 2$ | 7 | $\begin{array}{llll}9 & 1 & 36.95\end{array}$ | 12843.0 | 104 |
| 8 | $\begin{array}{rrrrr}7 & 23 & 54 \\ 7 & 26 & 191 \\ 7 & 28 & 1.48\end{array}$ | $185455 \cdot 6$ | $66 \cdot 77$ | 8 | $9 \quad 3 \quad 40 \cdot 13$ | $115814{ }^{\prime}$ | 105 -47 |
| 10 | 7 28 7 | 184815.0 $184128: 8$ | $67 \%$ | 9 | $9543 * 28$ | $114741 \cdot 4$ | 106 '13 |
| 11 | $7 \cdot 30 \quad 14 \cdot 37$ | $183437{ }^{18}$ | 69 256 |  | 46-39 | 1137 | $106 \cdot 77$ |
| 12 | 73220.68 | $182739 \cdot 7$ | $70 \times 4$ | 12 |  | 11 26 <br> 11 15 <br> 11 $39^{\circ}$ | 7'43 |
| 13 | $7 \begin{array}{llll}7 & 34 & 26.91\end{array}$ | 182036.9 | 70.48 | 13 | $\begin{array}{llll}9 & 11 & 52 & 51 \\ 9 & 13 & 55 & 53\end{array}$ | $\begin{array}{crrrr}11 & 15 & 39 & 4 \\ 11 & 4 & 51 & 0\end{array}$ | 07 |
| 14 | $73633 \cdot 05$ | $181328 \cdot 6$ | $72 \cdot 28$ | 14 | $\begin{array}{llllllllll}9 & 15 & 58 & 53\end{array}$ | $105358 \cdot 9$ |  |
| 15 | $\begin{array}{lllll}7 & 38 & 39 & 10 \\ 7 & 40 & 4 & \end{array}$ | $\begin{array}{lllll}18 & 6 & 14 \cdot 9\end{array}$ | $73 \cdot 20$ | 15 | $\begin{array}{lllll}9 & 18 & 1 & 50\end{array}$ | $43 \quad 30$ | 109 '95 |
| 16 | $74045 \cdot 07$ | 175855 | $74^{\circ} 08$ | 16 | $\begin{array}{lll}9 & 20 & 4 \cdot 45\end{array}$ | $10323 \cdot 3$ | $\begin{aligned} & 90 \\ & 53 \end{aligned}$ |
| 17 | $7 \quad 4250.95$ | $175131 \cdot$ | 75 | 17 | $\begin{array}{llll}9 & 22 & 7: 39\end{array}$ | 1021 | $111 \cdot 15$ |
| 18 | $74456 \cdot 75$ | 17441.2 | $75 \cdot 87$ | 18 |  | $10 \begin{array}{llll}10 & 9 & 53\end{array}$ | $111 \cdot 75$ |
| 19 | $\begin{array}{llll}7 & 47 & 2 \cdot 45\end{array}$ | 173626.0 | 77 | 19 |  | 95842 | 33 |
| $\stackrel{20}{20}$ | 749808 | 1728454 | $77 \cdot 63$ | 20 | $\begin{array}{lllllllll}9 & 28 & 16 \cdot 12\end{array}$ | $94728 \cdot 7$ | 92 |
| 21 | $7 \begin{array}{llll}7 & 513 & 61\end{array}$ | $172059 \cdot 6$ | $78 \cdot 52$ | 21 | $\begin{array}{llll}9 & 30 & 19 & 01\end{array}$ | 93611 '2 | 11348 |
| 22 | $\begin{array}{lllll}7 & 53 & 19\end{array}$ | $\begin{array}{llll}17 & 13 & 8 & 5\end{array}$ | $79 \cdot 37$ | 22 | 9322191 | $92450 \cdot 3$ | 14 -05 |
| 23 | $\begin{gathered} 5524 \cdot 43 \\ \text { WEDNE } \end{gathered}$ | $\begin{array}{llll} \text { N. } 17 & 5 & 12 & 3 \\ \operatorname{BSDAY} & 22 . \end{array}$ | 25 | 23 | $\begin{gathered} 93424 \cdot 80 \\ \text { FRID } \end{gathered}$ | N. $\begin{array}{lll}9 & 13 & 26 \\ A Y & 24\end{array}$. |  |
| 0 | $75729 \cdot 71$ | N. $165710 \cdot 8$ |  | 0 | 9 $3627 \cdot 691 \mathrm{~N}$ | N. $9 \quad 1588$ |  |
| 1 | $7{ }^{7} 59.34 \cdot 91$ | 164942 |  | 1 | $\begin{array}{lllllllll}9 & 38 & 30 & 59\end{array}$ | $\begin{array}{llll}8 & 50 & 27 & 3\end{array}$ | $70$ |
| 2 | $8 \quad 1 \quad 40 \cdot 02$ | 164052 |  | 2 | $94033 \cdot 50$ | $8 \quad 38 \quad 53 \cdot 1$ | 116.25 |
| 3 | $8 \quad 3 \quad 45 \cdot 06$ | $163235 \cdot 7$ | $83 \cdot 65$ | 3 | $94236 \cdot 41$ | $82715 \cdot 6$ |  |
| 4 | $885500 \cdot 01$ | $\begin{array}{llll}16 & 24 & 13\end{array}$ | $84 \cdot 48$ | 4 | 9 44 39 | 8 15 34  |  |
| 5 | 8 8 7 51:88 | $16 \quad 1546 \cdot 9$ | $85 \cdot 30$ | 5 | $94642 \cdot 29$ | $\begin{array}{llllll}8 & 3 & 51 & \text { 2 }\end{array}$ |  |
| 6 | $\begin{array}{llll}8 & 9 & 59 & 67\end{array}$ | $16 \quad 7 \quad 15 \cdot 1$ | $86 \cdot 13$ | 6 | 9) $4845 \cdot 2$ | 75248 |  |
| 7 | $\begin{array}{llll}8 & 12 & 4 & 38\end{array}$ | $15 \quad 5838$ |  | 7 | 9) 5048 | $\begin{array}{lllll}7 & 40 & 14 & 3\end{array}$ | 82 |
| 8 | 8 8 14.9 9'01 | $154956 \%$ | 87 '77 | 8 | 9) $5251 \cdot 28$ | $\begin{array}{lllll}7 & 28 & 21 & 4\end{array}$ | $2$ |
| 9 |  | $154110 \%$ | 88.57 | 9 | $9{ }^{9} 5454.33$ | $\begin{array}{llllll}7 & 16 & 25 & 5\end{array}$ |  |
| 10 | $81818{ }^{8}$ | $153218 \%$ | 89.38 | 10 | $\begin{array}{llllllllllllllllllll}9 & 56 & 57 & 42\end{array}$ | $7 \begin{array}{llll}7 & 4 & 26 \cdot 7\end{array}$ |  |
| 11 | $82022 \cdot 45$ | $152322 \cdot 3$ | 90 | 11 | $\begin{array}{llll}9 & 59 & 0 & 54\end{array}$ | $65825 \cdot 1$ | 12.75 |
| 12 | $88226 \cdot 78$ | $\begin{array}{lllll}15 & 14 & 21 & 3\end{array}$ | 90 | 12 | $\begin{array}{llll}10 & 1 & 3 \cdot 70\end{array}$ | $\begin{array}{llll}6 & 40 & 20\end{array}$ | 121-22 |
| 13 | $882131{ }^{8} 04$ | $\begin{array}{lllll}15 & 5 & 15 & 6\end{array}$ | 9175 | 13 | $\begin{array}{llll}10 & 3 & 6 & 90\end{array}$ | $6 \quad 28 \quad 13 \cdot 3$ | $121 \cdot 65$ |
| 14 | $82635 \cdot 22$ | 1456 | $92 \cdot 52$ | 14 | $10 \quad 510 \cdot 15$ | $\begin{array}{lrrr}6 & 16 & 3 & 4\end{array}$ |  |
| 15 | $\begin{array}{llllllll}8 & 28 & 39 & 33\end{array}$ | 144650 | $93 \cdot 30$ | 15 | $10 \quad 713 \cdot 45$ | $\begin{array}{lrrrr}6 & 3 & 50 & 7\end{array}$ |  |
| 16 | $\begin{array}{lllllllllllll}8 & 30 & 43 \\ 8 & 30 & 47\end{array}$ | $143730 \cdot 2$ | '05 | 16 | $\begin{array}{llll}10 & 9 & 16: 81\end{array}$ | $\begin{array}{llllll}5 & 51 & 35\end{array}$ | $122 \cdot 98$ |
| 17 |  | 142885 |  | 17 | $\begin{array}{lllll}10 & 11 & 20 & 22\end{array}$ | $\begin{array}{lllll}5 & 39 & 17 & 6\end{array}$ | $123 \cdot 38$ |
| 18 | $\begin{array}{llllllllll}8 & 34 & 51 \\ 8 & 36 & 5 & 27\end{array}$ | $141837 \%$ | $95 \cdot$ | 18 | $\begin{array}{llll}10 & 13 & 23 & 69\end{array}$ | $5 \quad 26 \quad 57 \cdot 3$ | $123 \cdot 80$ |
| 19 | $\begin{array}{lllll}8 & 36 & 5 & 5 & 12 \\ 8 & 38 & 58 & \cdot 01\end{array}$ | $\begin{array}{lllll}14 & 9 & 3 & 5\end{array}$ | 96 | 19 | $10 \quad 15 \quad 27 \cdot 23$ | 51434.5 | 124-22 |
| 20 | $838.58 \cdot 91$ | $135925 \cdot 6$ | 97.07 | 20 | $10 \quad 17 \quad 30$ '83 | 5 ¢ $209 \cdot 2$ |  |
| 21 | 841 | $134943 \cdot 2$ | $97 \cdot 80$ | 21 | $101934 \times 1$ | 49 49 41.6 |  |
| 22 | $\begin{array}{lll}8 & 43 & 6 \cdot 30\end{array}$ |  | $98 \cdot 5$ | 22 | $10 \quad 2138 \cdot 26$ | 437117 |  |
| $\underline{9}$ | $\begin{array}{llll}8 & 45 & 9.91\end{array}$ | $\begin{array}{llll}13 & 30 & 5 & 3\end{array}$ | $99^{\prime 25}$ | 23 | $102342 \cdot 09 *$ | $\begin{array}{lllll}4 & 24 & 39\end{array}$ |  |
| 94 | 8471346 | $\begin{array}{llll}\mathrm{N} .13 \quad 20 & 9 & 8\end{array}$ |  | 24 | $102546 \cdot 00 \mathrm{~N}$ | N. $412 \quad 5 \cdot 1$ |  |

## MEAN TIME.



## MEAN TIME.

## THE MOON'S RIGHT ASCENSION AND DECLINATION.



## MEAN TIME.

|  | THE SUN'S <br> Apparent |  | Logarithm of the Radius Vector of the Earth. | THE MOON'S |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Longitude. | Latitude. |  | Semidiameter. |  | Horizontal Parallas, |  |
|  | Noon. | Noon. | Noon. | Noon. | Midnight. | Noon. | Mitlnight, |
|  | $71^{\circ} 1^{\prime} 16^{\prime \prime} \cdot 4$ | N. $0^{\prime \prime} \cdot 28$ |  | $16^{\prime} \quad 38^{\prime \prime} \cdot 1$ | $16 \quad 34^{\prime} 4$ | $61^{\prime} 9^{\prime \prime} \cdot 7$ | $60^{\prime}-49^{\prime \prime} \cdot 0$ |
| 1 | $\begin{array}{llllll}71 & 1 & 16^{\prime \prime} \\ 7\end{array}$ | N. $0 \cdot 28$ | 0 '0062733 | $1638{ }^{1} 1$ | $1634 \cdot 4$ | $61 \quad 2 \cdot 7$ | $6049{ }^{\prime} 0$ |
| 2 | $\begin{array}{lllllll}71 & 58 & 41 & 1\end{array}$ | $0 \cdot 41$ | $0 \cdot 0063337$ | $16 \quad 29$ '6 | $1623 \cdot 8$ | $6031 \cdot 5$ | $60 \quad 10 \times 3$ |
| 3 | 72 | $0 \cdot 54$ | $0 \cdot 0063930$ | $16 \quad 17 \cdot 2$ | $1610{ }^{\prime} 0$ | 5946 | 59 19:8 |
| 4 | 73 | 0.65 | 0'0064509 | $16 \quad 9 \cdot 4$ | $15 \quad 54 \cdot 6$ | $58 \quad 51 \quad 8$ | $58.23 \cdot 2$ |
| 5 | $745050 \cdot 8$ | $0 \cdot 74$ | $0 \cdot 0065074$ | $15 \quad 46 \cdot 7$ | $15 \quad 38 \cdot 9$ | $57 \quad 54 \cdot 3$ | 57.25 |
| 6 | $75 \quad 48 \quad 12 \cdot 7$ | 0.81 | $0 \cdot 0065624$ | $1531 * 3$ | $1524 \cdot 1$ | $\begin{array}{llll}56 & 57 & 7\end{array}$ | 56314 |
| 7 | $\begin{array}{llll}76 & 45 & 34 & 0\end{array}$ | $0 \cdot 84$ | $0 \cdot 0066157$ | 15174 | 1511 2 | $\begin{array}{lll}56 & 6 & 7\end{array}$ | $55 \quad 43 \cdot 8$ |
| 8 | $77 \quad 4254.9$ | $0 \cdot 85$ | $0 \cdot 0066671$ | $15 \quad 5 \quad 6$ | 1500 | $\begin{array}{llll}55 & 23 & 3\end{array}$ | 55 4 9 |
| 9 | $\begin{array}{lllll}78 & 40 & 15 & 2\end{array}$ | $0 \cdot 84$ | $0 \cdot 0067166$ | 1456 \% | $1452 \cdot 4$ | $54 \quad 48 \cdot 7$ | 5434 |
| 10 | 793735 | $0 \cdot 79$ | $0 \cdot 0067640$ | $1449{ }^{\circ}$ | $1446 \cdot 7$ | $5423 \cdot 2$ | 54140 |
| 11 | 8084548 | $0 \cdot 71$ | $0 \cdot 0068093$ | $1444 \cdot 7$ | $1443 \cdot 4$ | 54 6 '8 | $54 \quad 17$ |
| 12 | $81 \quad 32 \quad 13 \cdot 9$ | 0'61 | $0 \cdot 0068523$ | $1442 \cdot 5$ | $1442 \cdot 1$ | $5358 \cdot 4$ | 5357 |
| 13 | $829932 \cdot 5$ | $0 \cdot 49$ | $0 \cdot 0068929$ | 14 42 2 | $1442 \cdot 8$ | $\begin{array}{lll}53 & 57 & 4\end{array}$ | $53 \quad 59 \times$ |
| 14 | $83 \quad 2650 \cdot 7$ | $0 \cdot 36$ | $0 \cdot 0069309$ | $1443 \cdot 7$ | $1445 \cdot 1$ | 543 \% | $54 \quad 79$ |
| 15 | $84 \quad 2488$ | $0 \cdot 23$ | 0 -0069664 | 14 46 7 | 1448 '8 | 5414.0 | 5421.5 |
| 16 | 85 21 25 5 | N. $0 \cdot 10$ | 0*0069993 | 1451 | $1453 \cdot 7$ | $5430 \cdot 1$ | $\begin{array}{ll}54 & 39\end{array}$ |
| 17 | 86 | S. 0 * 01 | $0 \cdot 0070297$ | $1456 \cdot 7$ | $\begin{array}{lll}14 & 59\end{array}$ | $\begin{array}{lll}54 & 50 & 5\end{array}$ | $55 \quad 25$ |
| 18 | $87 \quad 15 \quad 58$ | $0 \cdot 11$ | 0.0070573 | $15 \quad 3 \cdot 4$ | $15 \quad 7$ '3 | $55.15 \cdot 4$ | $55.29 \cdot 4$ |
| 19 | $\begin{array}{lllll}88 & 13 & 13 & 6\end{array}$ | 0.19 | $0 \cdot 0070826$ | $\begin{array}{llll}15 & 11 & 3\end{array}$ | $15 \quad 15 \cdot 6$ | $5544 \cdot 1$ | $\begin{array}{llll}55 & 59 & 9\end{array}$ |
| 20 | $89 \quad 10 \quad 28 \cdot 4$ | $0 \cdot 24$ | $0 \cdot 0071053$ | $\begin{array}{ll}15 & 20 \cdot 2\end{array}$ | $15 \quad 25 * 0$ | $56 \quad 169$ | 56 |
| 21 | $90 \quad 742 \cdot 6$ | $0 \cdot 2$ | $0 \cdot 0071257$ | $1530 \cdot 1$ | $1535 \cdot 4$ | $56 \quad 53 \cdot 2$ | $5712 \cdot 6$ |
| 22 | 9 l | 0-26 | $0 \cdot 0071439$ | $15 \quad 40 \cdot 9$ | $1546 \cdot 6$ | $5733 \cdot 0$ | $5753 \cdot 9$ |
| 23 | $92 \quad 29^{\prime} 1$ | $0 \cdot 29$ | $0 \cdot 0071600$ | 1559.5 | $15.5 \mathrm{~S} \cdot 3$ | $\begin{array}{llll}58 & 15 & 3\end{array}$ | $5836 \%$ |
| 24 | $\begin{array}{llllll}92 & 59 & 21 & 1\end{array}$ | 0'15 | 0.0071742 | 16 4'1 | $16 \quad 96$ | $58 \quad 57.9$ | $59 \quad 18 \cdot 2$ |
| 25 | $93 \quad 56 \quad 33 \quad 3$ | S. $0 \cdot 06$ | $0 \cdot 0071864$ | $16 \quad 14 \cdot 9$ | $\begin{array}{lll}16 & 19 & 8\end{array}$ | $5937 \cdot 6$ | 5955 |
| 26 | $\begin{array}{llllll}94 & 53 & 44 & 7\end{array}$ | N. 0 '05 | $0 \cdot 0071967$ | $1621^{\prime} 1$ | $16 \quad 276$ | $60 \quad 113$ | $60 \quad 24 \cdot 3$ |
| 27 | $\begin{array}{lllll}95 & 50 & 55 & 7\end{array}$ | 0'18 | 0.0072056 | $16 \quad 30 \cdot 4$ | $1632 \cdot 1$ | $60 \quad 34 \cdot 5$ | $60 \quad 40 \cdot 8$ |
| 28 | $\begin{array}{llll}96 & 48 & 6 & 3\end{array}$ | 0 32 | $0 \cdot 0072127$ | $\begin{array}{lll}16 & 32 & 9\end{array}$ | $1632 \cdot 5$ | 60) $43 \cdot 6$ | $60 \quad 42 \cdot 3$ |
| 29 | $9745 \quad 16$ '8 | $0 \cdot 45$ | $0 \cdot 0072184$ | $1631 *$ | 16 28 5 | $60 \quad 36 \cdot 7$ | $60 \quad 274$ |
| 30 | 9842971 | $0 \cdot 58$ | 0-0072927 | 1624.9 | $1620 * 3$ | $60 \quad 14 \cdot 3$ | 59573 |
| 31 | $993937 *$ | N. $0 \cdot 69$ | 0.0072255 | 1614 '8 | $16 \quad 8 \cdot 8$ | $5937 \cdot 4$ | $59 \quad 15 \cdot 1$ |

MEAN TIME.

|  |  | THE MOON'S |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Longitude. |  | Latitude. |  | Age. <br> Noon. | Meridian <br> Passage. |
|  |  | Noon. | Midnight. | Noon. | Milnight. |  |  |
|  |  | - 11 | $0^{\circ} 111$ | $0{ }^{\prime}{ }^{\prime \prime}$ | $\bigcirc{ }^{\circ} 11$ | ${ }^{1}$ | h m |
| Sat. | 1 | $\begin{array}{lllll}258 & 48 & 15 & 9\end{array}$ | $266 \quad 18 \quad 6 \quad 3$ | N. $02727 \cdot 4$ | N. $1 \quad 8 \quad 38 \cdot 3$ | $15^{\prime} 1$ | $13 \quad 4 \cdot 5$ |
| Sun. | 2 | $\begin{array}{llll}273 & 44 & 7 & 5\end{array}$ | $281526{ }^{\circ}$ | 1 48 18  | $2 \begin{array}{llll}2 & 25 & 4 & 7\end{array}$ | $16 \cdot 1$ | $14 \quad 6 \cdot 3$ |
| Mon. | 3 | $2882117 \%$ | $\begin{array}{lll}295 & 31 & 8 \cdot 3\end{array}$ | $\begin{array}{llll}3 & 0 & 18 & 8\end{array}$ | $3 \begin{array}{llll}3 & 31 & 33 & 6\end{array}$ | $17 \cdot 1$ | $15 \quad 4 \quad 0$ |
| Tues. | 4 | 3023433.5 | $3093119 \cdot 3$ | $\begin{array}{llll}3 & 59 & 5 & \end{array}$ | $422938 \cdot 1$ | $18 \cdot 1$ | $15 \quad 57$ 2 |
| Wed. | 5 | $3162120 \%$ | 323 4 41 \% | $442 \quad 2$ | $45712 \cdot 2$ | 19 '1 | $1646: 3$ |
| Thur. | 6 | $3294132 \cdot 7$ | $336 \quad 12 \quad 11 * 4$ | $\begin{array}{llll}5 & 8 & 9 & \end{array}$ | $\begin{array}{lllll}5 & 14 & 56 & 8\end{array}$ | $20 \cdot 1$ | $1732 \cdot 3$ |
| Frid. | 7 | 3423700 | $3485624 \cdot 3$ | $\begin{array}{llll}5 & 17 & 41 \\ & 1\end{array}$ | $\begin{array}{llll}5 & 16 & 30 & 7\end{array}$ | $21 \cdot 1$ | 18 16  |
| Sat. | 8 |  | $12058 \cdot 3$ | 511136.0 | $\begin{array}{lllll}5 & 3 & 8 & 2\end{array}$ | 22 1 | $1859 \cdot 1$ |
| Sun. | 9 | $72710 \cdot 7$ | $\begin{array}{llll}13 & 30 & 3\end{array}$ | $\begin{array}{llll}4 & 51 & 19\end{array}$ | $43621 \cdot 2$ | 23 -1 | $1942 \cdot 1$ |
| Mon. | 10 | $\begin{array}{llll}19 & 30 & 7 & 8\end{array}$ | $\begin{array}{llll}25 & 27 & 56 \cdot 1\end{array}$ | $\begin{array}{lllll}4 & 18 & 28 & 4\end{array}$ | $35753 \cdot 8$ | $24 \cdot 1$ | $20 \quad 25 \cdot 7$ |
| Tues. | 11 | 312358.9 | $371845 \cdot 1$ | $\begin{array}{llllll}3 & 34 & 51 & 4\end{array}$ | $\begin{array}{lllll}3 & 9 & 36 \cdot 1\end{array}$ | $25 \cdot 1$ | $21 \quad 10 \cdot 7$ |
| Wed. | 12 | $\begin{array}{lllll}43 & 12 & 42 & 9\end{array}$ | $49 \quad 6 \quad 18 \cdot 3$ | $24923 \cdot 0$ | 2 13 $27 \cdot 7$ | $26 \cdot 1$ | $2157 \cdot 3$ |
| Thur. | 13 | $\begin{array}{lllll}54 & 59 & 55\end{array}$ | $60 \begin{array}{llll}60 & 57 & 8\end{array}$ | $143 \quad 7 \quad 3$ | $\begin{array}{llll}1 & 11 & 38 & 7\end{array}$ | $27^{\prime} 1$ | $2245 * 4$ |
| Frid. | 14 | 66 48 $45 \cdot 6$ | 724438 | N. $03920{ }^{1}$ | N.0 $66300^{\circ} 9$ | $28 \cdot 1$ | 23 34 7 |
| Sat. | 15 | 78 41151.2 | $844049{ }^{*} 1$ | S. $0.26 \quad 29.8$ | S. 0 59 21 2 | $29 \cdot 1$ | ó |
| Sun. | 16 | 90 41138 | $96 \quad 4435 \cdot 9$ | $13142 \cdot 8$ | $\begin{array}{llll}2 & 3 & 12 & 7\end{array}$ | $0 \cdot 5$ | 0-24'4 |
| Mon. | 17 | $1024955 \cdot 4$ | $\begin{array}{llllll}108 & 57 & 49\end{array}$ | \% 3330 '0 | $\begin{array}{llllll}3 & 2 & 13 & 3\end{array}$ | $1 \times$ | $\begin{array}{ll}1 & 13\end{array}$ |
| Tues. | 18 | $\begin{array}{llll}115 & 8 & 30 & 8\end{array}$ | $1212211 \cdot 4$ | $3290 \cdot 8$ | $\begin{array}{lllll}3 & 53 & 32 & 3\end{array}$ | $2 \cdot 5$ | $2 \quad 2 \cdot 4$ |
| Wed. | 19 | 127393 | $\begin{array}{llll}133 & 59 & 19 & 7\end{array}$ | $41527{ }^{4} 0$ | $434 \quad 26 \cdot 2$ | $3 \cdot 5$ | $249 \%$ |
| Thur. | 20 | $\begin{array}{llll}140 & 93 & 12 & 4\end{array}$ | $\begin{array}{lllll}146 & 50 & 53 & 8\end{array}$ | 450 | $\begin{array}{lllll}5 & 2 & 25 & 5\end{array}$ | $4 \cdot 5$ | $3 \quad 36$ |
| Prid. | 21 | $153 \quad 2936 \cdot 4$ | $1595831 \quad 6$ | $\begin{array}{lllll}5 & 10 & 53 & 3\end{array}$ | 51521.6 | $5 \cdot 5$ | $422 \cdot 8$ |
| Sat. | 22 | 166 38 50  <br> 18    | $173 \quad 23 \quad 41 \cdot 2$ | $\begin{array}{llll}5 & 15 & 39 & \end{array}$ | $\begin{array}{lllll}5 & 11 & 36.6\end{array}$ | $6 \cdot 5$ | $5 \quad 9.4$ |
| Sun. | 23 | 180 | $187 \quad 7 \quad 25 \cdot 8$ | $\begin{array}{llll}5 & 3 & 9 & 0\end{array}$ | $4{ }^{4} 50014 \cdot 4$ | 7'5 | $\begin{array}{lll}5 & 57 & 5\end{array}$ |
| Mon. | 24 | 194623.9 | $20110 \quad 2 \cdot 2$ | $43254 \%$ | $41116^{\circ} 0$ | $8 \cdot 5$ | $647 \cdot 9$ |
| Thes. | 25 |  | $\begin{array}{lllll}215 & 30 & 36 & 5\end{array}$ | $345 \quad 31.6$ | $\begin{array}{llll}3 & 15 & 58 & 1\end{array}$ | $9^{\prime 5}$ | $741 \cdot 8$ |
| Wed. | 26 | $2284655 \cdot 9$ | $230 \quad 6 \quad 41 \cdot 3$ | 24259.4 | 2785 | $10 \cdot 5$ | 839.4 |
| Thur. | 27 | 2372916.9 | 244540 '8 | $12850 \cdot 6$ | S. $0 \quad 48 \quad 55 \cdot 7$ | 11 \% | $940^{\circ} 6$ |
| Frid. | 28 | $25220 \quad 4 \cdot 8$ | $2594635 \cdot 8$ | S. $0 \quad 8 \quad 8 \quad 5 \cdot 2$ | N. 013255 | $12 \cdot 5$ | $1043 \cdot 8$ |
| Sat. | 29 | $\begin{array}{llll}267 & 12 & 37 & 2\end{array}$ | $2743711{ }^{2} 3$ | N. 11316.9 | $15 \% 14 \cdot 5$ | $13 \cdot 5$ | 1146 |
| Sun. | 30 | $\begin{array}{llll}281 & 59 & 20\end{array}$ | $28918 \quad 9 \quad 9$ | $2294 \%$ | $\begin{array}{lllll}3 & 3 & 9 & 4\end{array}$ | $14 \cdot 5$ | $1247^{\circ} 0$ |
| Mon. | 31 | $2963249 *$ | $3034234 \cdot 0$ | N.3. $33 \quad 54.5$ | N. $4 \quad 0 \quad 54.9$ | $15 \cdot 5$ | $1343 \cdot 5$ |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Hour. | Right A | Declination. | ing Dec. | Hour. | Ri | Declination. | Dift, in for 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | SUNDAY 9. |  |  |  | tuesday 11. |  |  |
|  |  |  |  |  | h m s ${ }^{\text {s }}$ |  |  |
| 0 | 1938.34 | 5 | 110.00 |  |  | $1930 \cdot 7$ |  |
| 1 | $\begin{array}{llll}0 & 21 & 32 \cdot 13\end{array}$ | $\begin{array}{lll}36 & 2 & 3\end{array}$ | 109.62 | 1 | $15347 \cdot 51$ | $15 \quad 280$ | 84. |
| 2 | $\begin{array}{lll}0 & 23 & 25\end{array} 93$ | 74700 | 109 | 2 | $15545 \times 37$ | 153625 |  |
| 3 | $\begin{array}{llll}0 & 25 & 19 & 76\end{array}$ | $5755 \cdot 4$ | 108 |  | $15743 \cdot 37$ | 1544473 |  |
| 4 | $\begin{array}{ll}0 & 2713 \\ 0 & 61\end{array}$ | $48 \cdot 4$ |  | 4 | $159+1 \cdot 50$ | $1 \begin{array}{llll}15 & 53 & 4 & 8\end{array}$ |  |
| 5 | $\begin{array}{lllllll}0 & 29 & 7 & 78\end{array}$ | 19390 | 108.08 | 5 | $2 \begin{array}{llll}2 & 1 & 39 & 77\end{array}$ | $\begin{array}{llll}16 & 1 & 18\end{array}$ |  |
| 6 |  | $830-271$ | $107 \cdot 60$ | 6 | $338 \cdot 18$ | $\begin{array}{llll}16 & 9 & 27\end{array}$ |  |
| 7 | (0) $3955 \cdot 33$ | $841 \quad 12 \cdot 7$ | $107 \cdot 18$ | 7 | $536 \cdot 74$ | $161732 \times 3$ |  |
| 8 | $\begin{array}{llllll}0 & 31 & 49 \\ 0 & 36 & 31\end{array}$ | 5155 | 10 |  | 2 l | $16 \quad 2533 \times 2$ |  |
| 9 | $\begin{array}{llllllllll}0 & 36 & 43 & 38\end{array}$ | 9 ¢ 36 '4 | $106 \cdot 35$ | d | 9 34:28 | 1633297 |  |
| 10 | $\begin{array}{llllll}0 & 38 & 37 & 38\end{array}$ | $91314 \cdot 1$ | $105 \cdot 88$ | 10 |  | 1641220 |  |
| 11 | $\begin{array}{llllllllll}0 & 40 & 31 & 49\end{array}$ | $92349 \cdot 7$ | $105 \cdot 45$ | 11 |  | $164910 \cdot 0$ |  |
| 12 | 0422564 | 934224 | 10 | 12 | 21515107 |  |  |
| 13 | 0 4. 19 | $94452 \cdot 4$ | $104 \cdot 68$ | 13 | $21731 \cdot 10$ | 17 4 33.0 |  |
| 14 | $04614 \cdot 11$ | $\begin{array}{lllll}9 & 55 & 19 & 6\end{array}$ | 10.4 -08 | 14 | $21930 \cdot 68$ | 171278 |  |
| 15 | $\begin{array}{lll}0 & 48 & 8 \cdot 42\end{array}$ | $\begin{array}{llll}10 & 5 & 44 \\ 10\end{array}$ | $103 \cdot 62$ | 15 | $22130 \cdot 40$ | 171938 |  |
| 16 | 0 50 2 | $\begin{array}{llll}10 & 16 & 5 & 8\end{array}$ | $103 \cdot 13$ | 16 | $2 \quad 23 \quad 30 \cdot 28$ | $17274 \cdot 1$ |  |
| 17 | (0) 515787 | $102624 \cdot 7$ | 10 | 17 | $\begin{array}{lllll}2 & 25 & 30 & 31\end{array}$ | $173425 \cdot 5$ |  |
| 18 |  | $103640 \% 7$ | $102 \cdot 18$ | 18 | $22730 \cdot 50$ | $174142 \cdot 3$ |  |
| 19 | $\begin{array}{llllllllllll}0 & 5 & 5 & 40 & 32\end{array}$ | 104653 's | $101 \cdot 6$ | 19 | $22930 \cdot 83$ | 17485.15 |  |
| 20 | $\begin{array}{lllllllllll}0 & 57 & 40\end{array}$ | 1057 | 10 | 20 | 2313132 | $\begin{array}{llll}17 & 56 & 2 \cdot 1\end{array}$ |  |
| 21 | $\begin{array}{lllll}0 & 59 & 35 & 68\end{array}$ | 117110 | $100 \cdot 70$ | 21 | $\begin{array}{lllllllllll}2 & 33 & 31 & 96\end{array}$ | $18 \quad 3 \quad 5 \%$ |  |
| 29 | $1 \begin{array}{lll}1 & 1 & 30 \cdot 47\end{array}$ | $111715 \%$ | $100 \cdot 18$ | 22 | $23532 \cdot 76$ | $\begin{array}{llll}18 & 10 & 3 & 2\end{array}$ |  |
| 23 | $1 \begin{array}{llll}1 & 3 & 25 & 34 \\ \end{array}$ | $\begin{array}{llll} \text { N. } 11 & 27 & 16 \end{array}$ | $99 \cdot 6$ | 23 | $23733 \%$ | N. $1816 \quad 56 \%$ |  |
|  | $\text { MONDAY } 10 .$ |  |  | WEDNESDAY 12. |  |  |  |
| 0 | $20 \cdot 30$ | N. 11137143 | 99'1 | 0 | $23934 \cdot 83$ | N,18 $23-45 \cdot 1$ | $i 38$ |
| 1 | $\begin{array}{llll}1 & 7 & 15 & 34\end{array}$ | $1147 \quad 9 \cdot 2$ | $98 \cdot 62$ | 1 | $24136 \cdot 10$ | 183029 |  |
| $\stackrel{1}{2}$ | $\begin{array}{llll}1 & 9 & 10 \cdot 47\end{array}$ | 1157009 | 98•10 | 2 | $\begin{array}{llllllllllllll}2 & 43 & 37 & 52\end{array}$ | $\begin{array}{llll}18 & 37 & 8 & 3\end{array}$ |  |
| 3 | 111508 | $12649 \%$ | 97-55 | 3 | $24539 \cdot 10$ | 184342 |  |
| 4 | $\begin{array}{llll}1 & 13 & 0 & 09\end{array}$ | 121634.8 | 97 |  | $24740 \cdot 83$ | $18 \quad 5011 \times 8$ | 6. |
|  | $\begin{array}{llllll}1 & 14 & 56 \cdot 39 \\ 1 & 16 & 1\end{array}$ | $12 \sim 616{ }^{12} 9$ | $96 \cdot 47$ | 5 | 2494273 | $\begin{array}{llllllllllllll}18 & 56 & 36\end{array}$ |  |
| 6 | $\begin{array}{llllll}1 & 1651 \\ 1 & 18 & 47\end{array}$ | $123555 \cdot 7$ | 95-92 | 6 | 25144.78 | 19 ¢ $55 \%$ |  |
| 8 | $\begin{array}{llll}1 & 18 & 47 \cdot 49\end{array}$ | 1245319 | 9585 | 7 | 2 5346 | 19) 9 |  |
| 9 | $\begin{array}{llll}1 & 20 & 43 \cdot 19 \\ 1 & 20 & 38\end{array}$ | $\begin{array}{llll}12 & 55 & 3 & 3\end{array}$ | -7 | 8 | $\begin{array}{lllll}2 & 55 & 49 & 35\end{array}$ | $19) 1519.1$ | $60 \%$ |
| 9 | $\begin{array}{llll}1 & 22 & 38 \\ 1 & 21 & 89\end{array}$ | $\begin{array}{llll}13 & 4 & 32 & 0 \\ 13 & 13 & 7\end{array}$ | $94 \times 0$ | 9 | $25751 \cdot 87$ | 1921234 | 590 $5^{2}$ |
| 10 |  | $\begin{array}{lllll}13 & 13 & 57 \\ 13\end{array}$ | 93.68 | 10 | 25935155 | 19) $2722 \cdot 5$ | is of |
| 11 | $\begin{array}{ll}1 & 2630 \cdot 91\end{array}$ | $132319 \%$ | $93 \cdot 05$ | 11 | $\begin{array}{llll}3 & 1 & 57 & 38\end{array}$ | 193316 |  |
| 12 | $1 \begin{array}{lll}1 & 28 & 27 \\ 1 & 30 & 08\end{array}$ | $\begin{array}{lllll}13 & 32 & 37 \\ 18 & 41 & \end{array}$ | g2. | 12 | 3 4 4 0 37 | $\begin{array}{llll}19 & 39 & 5 \cdot 3\end{array}$ | $55^{5}$ |
| 13 | $\begin{array}{lllll}1 & 30 & 23 & 27 \\ 1 & 29 & 10\end{array}$ | $\begin{array}{llll}13 & 41 & 52 \cdot 1\end{array}$ | $91 \cdot 8 \bar{i}$ | 13 | $\begin{array}{lllll}3 & 6 & 3 & 51\end{array}$ | 194148 | 56.8 |
| 14 | $\begin{array}{llll}1 & 32 & 19 & 62 \\ 1 & 3+16.118\end{array}$ | 13 51 3 3 <br> 14 0 10  | $91 \cdot 27$ | 14 | $\begin{array}{llll}3 & 8 & 6 & \text { s } 1\end{array}$ | $195027 \cdot 3$ | 55 \% |
| 15 | $\begin{array}{lllllllll}1 & 3+16.08 \\ 1 & 36 & 10\end{array}$ | $\begin{array}{llll}14 & 0 & 10 & \text { '8 } \\ 14 & 9 & 14\end{array}$ | 90:65 | 15 | $\begin{array}{llll}3 & 10 & 10 & \text { ¢ } 6\end{array}$ | 19) $56 \quad 0 \cdot 4$ | 54.6 |
| 16 | $\begin{array}{lllll}1 & 36 & 12 & 67 \\ 1 & 38 & 0.37\end{array}$ | $\begin{array}{lllll}14 & 9 & 14 & 7 \\ 14 & 18 & 15\end{array}$ | 90 | 16 | $\begin{array}{lllllllllllllll}3 & 12 & 13 & 86\end{array}$ | $20) 128$ |  |
| 17 | $\begin{array}{lll}1 & 36 & 9 \cdot 37 \\ 1 & 40 & 6 \cdot 19\end{array}$ | $\begin{array}{lllll}14 & 18 & 15 & 0 \\ 14 & 27 & 11 & 5\end{array}$ | $89 \cdot 42$ | 17 | $\begin{array}{llllll}3 & 14 & 17 & 62\end{array}$ | $\begin{array}{llll}20 & 6 & 50 & 7\end{array}$ |  |
| 18 | $\begin{array}{llll}1 & 40 & 6 \cdot 19\end{array}$ | 1427115 | 38:80 | 18 | $\begin{array}{lllllllll}3 & 16 & 21 & 53\end{array}$ | 201278 |  |
| 19 | $\begin{array}{lll}1 & 42 & 3\end{array} 14$ | $1436 \quad 4 \cdot 3$ | $88 \cdot 17$ | 19 | $\begin{array}{llll}3 & 18 & 25 & 59\end{array}$ |  |  |
| 20 | $1 \begin{array}{llll}1 & 44 & 0 & 02 \\ 1 & 45 & 27\end{array}$ | $144453 \cdot 3$ | 8752 | 20 | 3 3 29291 | 20) 22.25 | $60 \cdot 18$ |
| 21 | $\begin{array}{llll}1 & 45 & 57 & 42 \\ 1 & 47 & 54 \\ 1 & 7 & 74\end{array}$ | $\begin{array}{rrrrr}14 & 53 & 38 \cdot 4 \\ 15 & 0 & 19 & 8\end{array}$ | $86 \cdot 90$ | 21 | $\begin{array}{llll}3 & 22 & 34 \cdot 18\end{array}$ | $20-2726$ | 49 m |
| 22 | 1 47 54 <br> 1 49 52 | $\begin{array}{lrrrr}15 & 2 & 19 & 8 \\ 15 & 10 & 57 & \cdot 1\end{array}$ | 86 | 22 | $\begin{array}{llll}3 & 24 & 38 \cdot 69 \\ 3 & 26 & 12\end{array}$ | $203291 \%$ | 38 |
| 23 24 | 1 49 52  <br> 1 51 49 20 | $151057 \cdot 2$ $\times 151930 \cdot 7$ | $95 \cdot 58$ | 23 | $\begin{array}{lllllllll}3 & 26 & 43 & 36\end{array}$ | 2037117 | 4; 78 |
| 24 | $15149 \% 9$ | N. $15 \quad 19 \quad 30 \quad 7$ |  | 24 |  | N,20 $41 \begin{array}{lll}56\end{array}$ |  |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Hour | Right Ascension. | eclination. | Diff. Dee for $10^{\mathrm{mm}}$, | Hour. | Right Ascensio | Declination. | Din: Inem |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $T$ | $1 Y 13$. |  |  |  | AY 15. |  |
|  |  |  |  |  |  |  | $\stackrel{11}{2 \cdot 73}$ |
| 1 | $\begin{array}{lllll}3 & 28 & 48 & 17 \\ 3 & 30 & 53 & 13\end{array}$ | $2046 \quad 34 \cdot 7$ | 45 | 1 | $\begin{array}{llll}5 & 11 & 0 & 0 \\ 5 & 13 & 9 & 87\end{array}$ | 22 2 3158 | 9 |
| 2 | 3.3258123 | $2051 \quad 77$ | 44:58 | 2 | 5 151519 '68 | 2231354 | 90 |
| 3 | $35 \quad 3 \quad 47$ | 20055 | $43^{\circ} \mathrm{6}$ | 3 | $\begin{array}{llllll}5 & 17 & 29 & 53\end{array}$ | $2231 \quad 6 \cdot 0$ | 6.00 |
| 4 |  | 205956 | $42 \cdot 68$ |  | $\begin{array}{lllllll}5 & 19 & 39 & 41\end{array}$ | $223030 \%$ | 7.07 |
| 5 | $\begin{array}{llllllll}3 & 3 y & 14 & 40\end{array}$ | 214130 | 417 | 5 | 5 5 214943 | 2299476 | 8.17 |
| 6 | $34120 \cdot 07$ | $21 \quad 8 \quad 23.3$ | $40 \cdot 77$ | 6 | 5233597 | 22 2s 58.6 | 9 9 95 |
| 7 | 3 43 25 | 2112279 | 39 98 | 7 |  | 22.2831 | $10 \cdot 33$ |
| 8 | $\begin{array}{llllllll}3 & 45 & 31 & \text { '83 }\end{array}$ | $211696 \cdot 7$ | $38 \cdot 83$ | 8 | $\begin{array}{llllllllllll}5 & 28 & 19 & 28\end{array}$ | 22.2711 | $11 \cdot 43$ |
| 9 | $\begin{array}{lllllll}3 & 17 & 37\end{array}$ | $212019 \times 7$ | 37 | 9 | $\begin{array}{llllll}5 & 30 & 29 & 9 & 22\end{array}$ | $22.2552 \cdot 5$ | $12 \cdot 52$ |
| 10 | 3 49 44 | $2124 \quad 6 \cdot 8$ | 36 '8 | 10 | $53239 \cdot 24$ | $22.2437 \cdot 4$ | $13 \cdot 60$ |
| 11 | $35150 \cdot 48$ | $212748 \cdot 1$ | $35 \cdot 90$ | 11 | $5344 y \cdot 27$ | $22.2315 \quad 8$ | 68 |
| 12 | $53.56 \cdot 97$ | $213193 \cdot 5$ | 34.92 | 12 | 5365931 | $22.2147 \%$ | $15 \cdot 75$ |
| 13 | $3 \begin{array}{llll}3 & 56 & 3 & 58\end{array}$ | $213453 \cdot 0$ | 34.9.9: | 13 | $\begin{array}{llll}5 & 39 & 9 & 36\end{array}$ | 22.2013 .0 | $16 \cdot 87$ |
| 14 | $35810 \cdot 32$ | $213816 \cdot 5$ | $32 \cdot 98$ | 14 | 54119.41 | 22.1831 .8 | $17 \cdot 15$ |
| 15 | $\begin{array}{lllll}4 & 0 & 17 & 19\end{array}$ | 214134.1 | $31 \cdot 98$ | 15 | $543 \quad 29 \cdot 46$ | 221644 | 19 |
| 16 | $4 \underset{\sim}{2} 24 \cdot 18$ | 2144457 | $30 \cdot 93$ | 16 | $54539 \cdot 50$ | 221449.8 | 12 |
| 17 |  | 214751 | $29 \cdot 92$ | 17 | $54749 \cdot 55$ | 221249.1 | 1-22 |
| 18 | 463853 | 215050 | 28.92 | 18 | $54959 \cdot 58$ | 2210418 | 22 28 |
| 19 | 45 | $215344 \cdot 3$ | $27 \cdot 90$ | 19 | $5 \begin{array}{lll}5 & 52 & 9\end{array} 60$ | 22888. | 23.38 |
| 20 | $10 \quad 53 \cdot 35$ | 2156317 | $26 \cdot 88$ | 20 | 555419 '62 | 22.67818 | 24.45 |
| 21 | $\begin{array}{llll}4 & 13 & 0 & 93\end{array}$ | $215913 \%$ | $25 \cdot 87$ | 21 | $\begin{array}{lllll}5 & 56 & 29 & 61\end{array}$ | 22.341 .1 | $25 \cdot 53$ |
| 22 | $15 \quad 8 \cdot 69$ | $22148 \% 2$ | 24:83 | 22 | $5{ }_{5}^{5} 5839 \cdot 59$ | 22.1789 | 6 |
| 23 | $\begin{array}{r} 1716 \cdot 13 \\ F R I \end{array}$ | $\begin{aligned} & \text { N. } 22 \text { 4 } 17 \because 2 \\ & D, A Y 14 . \end{aligned}$ | $28 \cdot 88$ | 33 | $\begin{array}{rrr} 6 & 0 & 49 \\ & S U 4 \\ & S U N D \end{array}$ | $\begin{array}{lll} \text { N. } 21 & 58 & 28 \\ A Y & 16 . \end{array}$ | 7.68 |
| 0 | 192134 | N. $226840^{\circ} \mathrm{l}$ | $22 \cdot 78$ |  | $259 \cdot 47$ | $\begin{array}{llll}\mathrm{N} .21 & 55 & 42\end{array}$ | 4 77 |
| 1 | 42132.36 | $22 \quad 856$ | $21 \cdot 75$ |  | $\begin{array}{llll}6 & 5 & 9 & 37\end{array}$ | $215249{ }^{1} 5$ | $29 \cdot 83$ |
| 2 | 42340 | $2211 \quad 7 \cdot 3$ | $20 \cdot 72$ | 2 | $\begin{array}{llll}6 & 7 & 19 & 25\end{array}$ | $214950 \cdot 5$ | 30-90 |
| 3 | $42548 \cdot 70$ | $221311 \%$ | $19 \%$ | 3 | $\begin{array}{llll}6 & 9 & 29 & 09\end{array}$ | $214645 \cdot 1$ | $1 \cdot$ |
| 4 | $42757 \cdot 02$ | 221509 | . 62 | 4 | $6{ }_{6}^{6} 1138889$ | $214333 \cdot 3$ | $33 \cdot 05$ |
| 5 | $430 \quad 5 \cdot 41$ | $2217 \quad 13$ | $17 \%$ | 5 | $\begin{array}{llll}6 & 13 & 48 & 66\end{array}$ | $214015{ }^{\circ} 0$ | $34 \cdot 10$ |
| 6 | $43213 \cdot 95$ | $221846 \cdot 8$ | $16 \cdot 5$ | 6 | $\begin{array}{llllllllllll}6 & 15 & 58 & 39\end{array}$ | $213650 \cdot 4$ | $35 \cdot 17$ |
| 7 | $43422 \cdot 55$ | 232026 | $15 \cdot 4:$ | 7 | $\begin{array}{llll}6 & 18 & 8 \cdot 07\end{array}$ | $\begin{array}{lllll}21 & 33 & 19 & 4\end{array}$ | 20 |
| 8 | $43631 \cdot 24$ | 22.21589 | $14 \cdot 42$ | 8 | $62017 \cdot 71$ | $212942 \cdot 1$ | 37-28 |
|  | $43840 \% 1$ | $22.2325 \cdot 4$ | $13 \cdot 37$ | 9 | $622.27-31$ | $212558 \cdot 1$ | 835 |
| 10 | $44048 \cdot 87$ | $222445 \%$ | $12 \cdot 30$ | 10 | $6 \quad 2436 \cdot 85$ | 212288 | $4 \cdot 38$ |
| 11 | $44257 \cdot 81$ | 222559.4 | $11 \cdot 25$ | 11 | $6 \quad 2646 \quad 34$ | $21 \quad 1812 \cdot 0$ | $40 \cdot 45$ |
| 12 | $445 \quad 6$ '89 | 22.276 | $10 \cdot 14$ | 12 | $\begin{array}{lllllllllll}6 & 28 & 55 & 78\end{array}$ | 211490 | $11 \cdot 50$ |
| 13 | $44715{ }^{\circ} 91$ | $22.88{ }^{2} 0$ | $9 \cdot 10$ | 13 | $\begin{array}{llll}6 & 31 & 5 \cdot 16\end{array}$ | $21 \begin{array}{lll}210 & 0 \cdot 3\end{array}$ | 2 |
| 14 | 4492508 | $22.29 \quad 2 \cdot 6$ | 03 | 14 | $\begin{array}{lllll}6 & 33 & 14 & 48\end{array}$ | $21.545 \cdot 1$ | 43.57 |
| 15 | 4513431 | $22 \quad 2950 \%$ | $6 \cdot 97$ | 15 | $\begin{array}{llllll}6 & 35 & 23 & 74\end{array}$ | $21 \quad 123 \cdot 7$ | 4 |
| 16 | $45343 \cdot 61$ | $223032 \cdot 6$ | $5 \cdot 90$ | 16 | $63732 \cdot 93$ | 205656 | $45 \cdot 65$ |
| 17 | 455552.97 | $22318{ }^{2} 0$ | -42 | 17 | $\begin{array}{llllllllll}6 & 39 & 42\end{array}$ | $205222 \cdot 1$ | 6. |
| 18 | $458 \quad 2 \cdot 40$ | $223136 \%$ | $\cdot 75$ | 18 | $64151 \cdot 13$ | 204742.0 | $47 \%$ |
| 19 | $5{ }_{5}^{5} 00111$ 's8 | 22.3159 .4 | $2 \cdot 67$ | 19 | $6440 \cdot 12$ | $204255 \cdot 8$ | $48 \%$ |
| 20 | $5 \quad 2 \quad 21 \cdot 12$ | $223215 \cdot 4$ | $1 \cdot 60$ | 20 | 646 9'04 | $203853 \cdot 1$ | 4975 |
| 21 | $5431 \cdot 02$ | $223295 \%$ | $0 \cdot 50$ | 21 | $648 \quad 17 \cdot 89$ | 2033 4 9 | $50 \% 7$ |
| 22 | $5 \quad 6 \quad 40 \cdot 66$ | $223298 \cdot 0$ | $0 \cdot 57$ | 29 | $6 \quad 50 \quad 26 \cdot 66$ | $20280 \cdot 3$ | 51 |
| 23 | $\begin{array}{lllll}5 & 8 & 50 & 35\end{array}$ | $223294 \%$ | $\cdot 65$ | 23 | $6 \quad 52 \quad 35 \cdot 36$ | 2022496 | $52 \times 80$ |
| 24 | $511 \quad 0 \cdot 09$ | N.22 32 147 |  | 24 | $65443 \% 8$ | N. 2017 17 8 <br> 8   |  |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DEGLINATION.

| Hour. | Right Ascension. | Declination. | Dif. Dec, for $10^{\mathrm{m}}$. | Hour. | Right Ascension. | Declination. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

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23

$\begin{array}{llllllllll}13 & 39^{\mathrm{m}} & 37^{\prime \prime} \cdot 32 & \text { S. } 14^{\circ} & 23^{\prime} & 15^{\prime \prime} \cdot 2 & 107 \cdot 57\end{array}$ $\begin{array}{lllllllll}13 & 41 & 58 & 71 & 14 & 34 & 0.6 & 106 & 78\end{array}$ $13 \quad 4420 \cdot 45$ $\begin{array}{llllll}14 & 44 & 41 & 3 & 105 & \text { '98 }\end{array}$ $134642 \cdot 56$ $\begin{array}{lllll}14 & 55 & 17 & \cdot 2 & 105\end{array} \cdot 15$ $13.49 \quad 5 \cdot 03$ $13 \quad 51 \quad 27: 85$ $1353 \quad 511^{\circ} 04$ $\begin{array}{lllll}7 & 13 & 56 & 14 & 60\end{array}$ $\begin{array}{lllll}13 & 58 & 38 & 52\end{array}$ $\begin{array}{lll}14 & 1 & 2\end{array} 80$ $\begin{array}{lll}14 & 3 & 27 \cdot 45\end{array}$ $\begin{array}{llll}14 & 5 & 52 & 46\end{array}$ | 14 | 8 | 17 |
| :--- | :--- | :--- |
|  | 84 |  | $\begin{array}{llll}14 & 10 & 43 & 58\end{array}$ | 14 | 13 | 9 |
| :--- | :--- | :--- |
| 14 | 69 |  |

$\begin{array}{llll}14 & 15 & 36 & \cdot 17\end{array}$

$\begin{array}{llllll}15 & 5 & 48 & 1 & 104 \cdot 32\end{array}$ $\begin{array}{lllll}15 & 16 & 14 & 0 & 103 \cdot 47\end{array}$ $\begin{array}{lllllll}15 & 26 & 34 & 8 & 102 & 60\end{array}$ $\begin{array}{lllllll}15 & 36 & 50 & 4 & 101 & 72\end{array}$ $\begin{array}{lllll}15 & 47 & 0 & 7 & 100 \% 82\end{array}$ | 15 | 57 | 5 | 6 |
| :--- | :--- | :--- | :--- | $99 \cdot 90$ $\begin{array}{lllll}16 & 7 & 5 & \cdot 0 & 98\end{array} \cdot 97$ | 16 | 16 | 58 | 8 |
| :--- | :--- | :--- | :--- | $98 \cdot 02$ $1626.46 \cdot 9 \quad 97 \cdot 05$ | 16 | 36 | 29 | 2 | 96 |
| :--- | :--- | :--- | :--- | :--- | $\begin{array}{llll}16 & 46 & 5 & 7 \\ 95 & 98\end{array}$ $\begin{array}{lllll}16 & 55 & 36 & 2 & 94 \cdot 07\end{array}$ $\begin{array}{lllll}17 & 5 & 0 & 6 & 93 \cdot 05\end{array}$ $\begin{array}{lll}14 & 20 & 30\end{array} \cdot 21$ $171418 \cdot 9$ 172330 '8 $91 \cdot 98$ $\begin{array}{llll}14 & 29 & 57 & 78 \\ 14 & 05 & 25 & 71\end{array}$ $173236 \cdot 5$ | 17 | 41 |
| :--- | :--- |
| 17 | 35 | | 17 | 50 | 28 | $\cdot 3$ |
| :--- | :--- | :--- | :--- |
| 7 | 87 | 67 |  | | 17 | 59 | 14 | 3 | 86 |
| :--- | :--- | :--- | :--- | :--- |
| 55 |  |  |  |  | | 23 | 14 | 35 | 21 | 03 | S. 18 | 7 | 53 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | WEDNESDAY 26.

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14
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16
17
18
19
20
2
2
2
2

| 24 | 15 | 39 | 23 | 62 | S. 21 | 3 | 24 | $\cdot 2$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |


$84 \cdot 25$ $83 \cdot 08$ 81:90 $80 \cdot 72$ $79 \div 8$ $78 \cdot 25$ $77^{\circ} 02$ $75 \%$ 74'48 $73 \cdot 18$ $71 \cdot 90$ $70: 57$ $69 \cdot 23$ $67 \cdot 90$ $66 \cdot 53$ $65 \cdot 17$ $63 \cdot 77$ $62 \cdot 38$ $60 \cdot 95$ $59 \cdot 53$ $58 \cdot 10$ $56 \cdot 65$ $55 \cdot 18$ $53 \cdot 72$

THURSDAY 27.

FRIDAY 28.

| 0 | 16 | 43 | 20 | 54 | S. 22 | 25 | 29 | 8 | 13 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | 16 | 87 |  |  |  |  |  |  |  |


| 1 | $1646 \quad 2 \cdot 12$ | $22 \quad 2653 \cdot 0$ | 12918 |
| :---: | :---: | :---: | :---: |
| 2 | $164843 \cdot 76$ | $22.286 \cdot 1$ | $10 \% 5$ |
| 3 | $16 \quad 5125 \cdot 45$ | 2289 9'2 | $8 \times 3$ |
| 4 | $\begin{array}{llllllllll}16 & 54 & 7 & 19\end{array}$ | 2230 | 717 |
| 5 | $16 \quad 5648 \cdot 96$ | $223045 \cdot 2$ | 549 |
| 6 | $1659 \quad 30 \cdot 76$ | $223118{ }^{\circ}$ | 3.80 |
| 7 | $\begin{array}{llll}17 & 2 & 12 & 57\end{array}$ | $223140 \%$ | a 10 |
| 8 | $\begin{array}{llll}17 & 4 & 54 & 39\end{array}$ | $223153 \cdot 4$ | $0 \times 4$ |
| 9 | $17 \quad 736 \cdot 21$ | 223156.0 | 127 |
| 10 | $171018 \quad 02$ | $223148 \cdot 4$ | 18.98 |
| 11 | $17 \quad 12 \quad 59$ '80 | 223130 '8 | $4 \cdot 62$ |
| 12 | $171541 \cdot 56$ | 223131 | 630 |
| 13 | 171823.28 | $223025 \cdot 3$ | 7.95 |
| 14 | 17214.95 | $22.2937 \cdot 4$ | 0.65 |
| 15 | $17 \quad 2346 \cdot 56$ | 22.8839 .5 | 11'32 |
| 16 | $172628 \cdot 10$ | 222731.6 | 13.40 |
| 17 | $\begin{array}{llll}17 & 29 & 9 & 57\end{array}$ | $222613 \%$ | 14.67 |
| 18 | $173150 \cdot 95$ | $292445 \%$ | 1639 |
| 19 | $173432 \times 24$ | $22.83-7 \cdot 7$ | 17.93 |
| 20 | $17 \quad 3713 \cdot 42$ | $222119 \cdot 8$ | 1968 |
| 21 | $173954 \cdot 50$ | $221922 \cdot 0$ | 21.28 |
| 22 | $174235 \cdot 45$ | $221714 \cdot 3$ | 22988 |
| 23 | $174516 \cdot 27$ | $221456 \cdot 7$ | $24 \times 57$ |
| 24 | $174756 \cdot 95$ | .22 12 |  |


| 24 | 17 | 47 | 56 | 95 | S. 22 | 12 | 29 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |$|$

$$
\begin{aligned}
& \begin{array}{lll|llll}
15 & 42 & 1 & 120 & 21 & 8 & 37 \\
\hline
\end{array} \\
& 154439{ }^{\circ} 03 \\
& 1547 \quad 17 \text { '11 } \\
& \begin{array}{|l|l|l|l|l}
15 & 49 & 55 & 42
\end{array} \\
& \begin{array}{l|llll}
5 & 15 & 52 & 33 & 97 \\
6 & 15 & 55 & 12 & 74
\end{array} \\
& \begin{array}{lllllll}
7 & 15 & 57 & 51 & 73
\end{array} \\
& \begin{array}{lllll}
8 & 16 & 0 & 30 & \circ 93
\end{array} \\
& 21 \quad 1341 \cdot 9 \\
& \begin{array}{llll}
21 & 18 & 37 & \cdot 2 \\
21 & 23 & 23 & -3
\end{array} \\
& \begin{array}{lll}
21 & 28 & 0-3
\end{array} \\
& 2132 \quad 28 \cdot 1 \\
& 213646 \cdot 5 \\
& 2140 \quad 55 \cdot 6 \\
& 214455 \cdot 3 \\
& 2148 \quad 45 \quad 5 \\
& 21 \quad 52 \quad 26 \cdot 2 \\
& \begin{array}{llll}
21 & 55 & 57 & 4 \\
\hline
\end{array} \\
& 21 \quad 59 \quad 18 \text { '9 }
\end{aligned}
$$

$$
\begin{aligned}
& \begin{array}{lllll}
22 & 8 & 25 & -4 & 2742
\end{array} \\
& \begin{array}{llll}
22 & 11 & 8 & 1 \\
25 \%
\end{array} \\
& \begin{array}{llll}
22 & 13 & 40 & 9 \\
23 & 83
\end{array} \\
& 29 \begin{array}{lll}
16 & 3 \cdot 9 & 22 \cdot 18
\end{array} \\
& 22 \quad 18177^{\circ} 0 \\
& 222020 \cdot 1 \quad 18: 87 \\
& \begin{array}{l|llllllll}
22 & 16 & 37 & 57 & 61 & 22 & 22 & 13 & 3 \\
\hline
\end{array} 17 \% 22
\end{aligned}
$$

## MEAN TIME.

## THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Hours | Right Ascension. | Declination. | $\begin{aligned} & \text { Dirr. Dec, } \\ & \text { for } 10 \mathrm{~m}, \end{aligned}$ | Hour. | Right Ascension. | Declination. | Diff. Dec. for $10^{\mathrm{m}}$. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | AY 29. |  |  |  | $1 Y 30$. |  |
|  |  |  |  |  | \% |  |  |
| 0 | 17475695 | S. $22.122^{12} \times 18$ |  | 0 |  |  | $62 \cdot 58$ $63 \cdot 95$ |
| 1 | $\begin{array}{llllllll}17 & 50 & 37 & 49\end{array}$ | $\begin{array}{llll}22 & 9 & 52 \cdot 1 \\ 29 & 7 & 5\end{array}$ | $27 \cdot 82$ | 1 |  | 20 20 17.9 <br> 20 13 54 | $63 \cdot 95$ $65 \cdot 30$ |
| 2 | $\begin{array}{llll}17 & 53 & 17 & 87\end{array}$ | 22785 | $29^{\prime 2} 4$ | 2 | $185620 \cdot 10$ | 20 0 0 13 | $65 \cdot 30$ $66 \cdot 65$ |
| 3 | $\begin{array}{llllllll}17 & 55 & 58 & 09\end{array}$ | 22.488 | $31 \times 5$ | 3 | $\begin{array}{lllllll}18 & 58 & 54 & 16\end{array}$ | 20 7 $22 \cdot 4$ | 66.65 |
| 4 | $\begin{array}{llllllllllll}17 & 58 & 38\end{array}$ | 22 1 $2 \cdot 2$ | $32 \cdot 65$ | 4 | $\begin{array}{llll}19 & 1 & 27.90\end{array}$ | $\begin{array}{llll}20 & 0 & 42 \cdot 5\end{array}$ | $67 \cdot 97$ |
| 5 | $\begin{array}{lllll}18 & 1 & 18 & 00\end{array}$ | $215746 \cdot 3$ | $34 \cdot 23$ | 5 | $\begin{array}{llll}19 & 4 & 1 & 30\end{array}$ | $195354 \cdot 7$ | $69 \cdot 27$ |
| 6 | $\begin{array}{llll}18 & 3 & 57 & 67\end{array}$ | $215420 \cdot 9$ | $35: 83$ | 6 | $196634 \cdot 35$ | $194659 \cdot 1$ | $70 \cdot 58$ |
| 7 | $\begin{array}{llll}18 & 6 & 37 & 15\end{array}$ | $215045 \cdot 9$ | $37 \cdot 42$ | 7 | $\begin{array}{llll}19 & 9 & 7 & 07\end{array}$ | 193955.6 | 71 |
| 8 | 18 9 <br> 16 16 | $21471 \%$ | $38.97{ }^{\circ}$ | 8 | $\begin{array}{lllll}19 & 11 & 39 & 43\end{array}$ | $193244 \cdot 5$ | $73 \cdot 12$ |
| 9 | 18, 11 ' $55 \cdot 48$ | $2143 \quad 76$ | 40 -53 | 9 | $19 \quad 14 \quad 11 \cdot 44$ | 192525.8 | 74:37 |
| 10 | $\begin{array}{llllllllll}18 & 14 & 34 & 32\end{array}$ | 21394.4 | 42.08 | 10 | $191643 \cdot 10$ | 191759.6 | 75 |
| 11 | $\begin{array}{lllllll}18 & 17 & 12 & 93\end{array}$ | 213451.9 | $43 \cdot 6$ | 11 | $\begin{array}{lllllllllll}19 & 19 & 14 & 39\end{array}$ | 191025.9 | $76 \cdot 82$ |
| 12 | $\begin{array}{lllllllll}18 & 19 & 51 & 31\end{array}$ | $213030 \cdot 1$ | $45 \cdot 15$ | 12 | $192145 \cdot 32$ | $19 \quad 245 \cdot 0$ | 78.0 |
| 13 | $18 \quad 22 \quad 29 \times 44$ | $2125 \quad 59 \cdot 2$ | $46 \cdot 67$ | 13 | $\begin{array}{llllllll}19 & 24 & 15 & 88\end{array}$ | 185456 '9 | 79.22 |
| 14 | $\begin{array}{llll}18 & 25 & 7 * 33\end{array}$ | 21 21 19  | $48 \cdot 18$ | 14 | 192646.07 | $1847 \quad 16$ | $30 \cdot 38$ |
| 15 | $182744 \cdot 95$ | $\begin{array}{llll}21 & 16 & 30 \cdot 1\end{array}$ | $49 \cdot 68$ | 15 | $\begin{array}{lllllllllll}19 & 29 & 15 & 89\end{array}$ | $\begin{array}{llll}18 & 38 & 59 & 3 \\ 18 & 30 & 50\end{array}$ | $81 \cdot 53$ |
| 16 | $\begin{array}{llllllllllll}18 & 30 & 22 & 32\end{array}$ | $211132 \cdot 0$ | $51 \cdot 15$ | 16 | $193145 \cdot 33$ | $183050 \cdot 1$ | 82.68 |
| 17 | $\begin{array}{llllll}18 & 32 & 59 & 41\end{array}$ | $21 \quad 625 \cdot 1$ | $52 \cdot 63$ | 17 | $193414 \times 39$ | 182234.0 | $83 \cdot 80$ |
| 18 | $\begin{array}{llll}18 & 35 & 36 & \cdot 23\end{array}$ | $\begin{array}{llll}21 & 1 & 9 & 3\end{array}$ | $54 \cdot 08$ | 18 | 193643 '07 | $181411 \cdot 2$ | $84 \cdot 92$ |
| 19 | $\begin{array}{llllllllll}18 & 38 & 12 & 76\end{array}$ | 205544.8 | $55 \cdot 53$ | 19 | $193915 \cdot 37$ | $\begin{array}{llll}18 & 5 & 41 \%\end{array}$ | 86 \% 00 |
| 20 | $18 \quad 4049{ }^{\prime \prime} 01$ | 205011.6 | $56 \cdot 97$ | 20 |  | $\begin{array}{lllll}17 & 57 & 5 \\ 17 & 78\end{array}$ | 87.08 |
| 21 | 18.43 24*96 | $\begin{array}{llll}20 & 44 & 29 & 8\end{array}$ | 58 -40 | 21 | 19446882 | 17 <br> 17 <br> 17 <br> 18 $23 \cdot 2$ | $88 \cdot 13$ |
| 22 | $18 \quad 46 \quad 0 \quad 61$ | $\begin{array}{lllll}20 & 38 & 39 & 4\end{array}$ | 59 -80 | 22 | $194633 \cdot 96$ | $\begin{array}{llll}17 & 39 & 34 \cdot 4\end{array}$ | $9 \cdot 18$ |
| 93 | $\begin{array}{llllllllllllllll}18 & 48 & 35 & 96\end{array}$ | $20 \quad 3240 \%$ | $61 \cdot 20$ | 23 | $1949 \quad 0 \cdot 71$ | 17 30 39 | 90 |
| 24 | $18 \quad 51 \quad 10$ \%9 | S. 202633.4 |  | 24 | 195127 '07 | S. $172138{ }^{\prime}$ |  |

PHASES OF THE MOON.



| MEAN TIME. |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | THE SUN'S <br> Apparent |  | Logarithm of the Radius Vector of the Earth. | THE MOON'S |  |  |  |
|  | Longitude. | Latitude. |  | Semidi | meter. | Horizonta | Parallax. |
|  | Noon. | Noon. | Noon. | Noon. | Midnight. | Noon. | Midnight, |
| 1 |  | N. $0^{\prime \prime} \cdot 69$ | 0.0072255 | $16^{\prime} \quad 14^{\prime \prime} \cdot 8$ | $16^{\prime} \mathrm{cc}^{\prime \prime} 8^{\prime \prime} 8$ | $59^{\prime} 37^{\prime \prime} \cdot 4$ | $59^{\prime} 15^{\prime \prime} \cdot 1$ |
| 2 | $1003647 \cdot 5$ | 0 '78 | $0 \cdot 0072268$ | $\begin{array}{ll}16 & 2 \cdot 1\end{array}$ | $1555{ }^{\circ} 0$ | $5850 \cdot 6$ | 58 24.6 |
| 3 | $1013357^{\circ} 9$ | 0 -86 | $0 \cdot 0072267$ | $1547 \%$ | $1540 \cdot 4$ | $5757{ }^{\circ} 9$ | $5730 \cdot 9$ |
| 4 | $\begin{array}{llll}102 & 31 & 8.4\end{array}$ | $0 \cdot 90$ | $0 \cdot 0072251$ | 1533.1 | $1526 \cdot 0$ | $57 \quad 4 \cdot 3$ | $5638 \cdot 1$ |
| 5 | $\begin{array}{lllllll}103 & 28 & 19 & 3\end{array}$ | $0 \cdot 91$ | $0 \cdot 0072217$ | $1519 * 3$ | $15 \quad 13$ \% | $56 \quad 13 \cdot 4$ | $55 \quad 50 \cdot 3$ |
| 6 | $10425 \quad 30 \cdot 6$ | $0 \cdot 89$ | $0 \cdot 0072165$ | $15 \quad 7 \%$ | $15 \quad 20$ | $55 \quad 29 \cdot 1$ | 55 10  |
| 7 | $105 \quad 2242{ }^{10}$ | $0 \cdot 85$ | $0 \cdot 0072095$ | $1457{ }^{5}$ | 1453.6 | 5453 | $\begin{array}{llll}54 & 39 & 3\end{array}$ |
| 8 | 1061954 3 | $0 \cdot 77$ | $0 \cdot 0072005$ | $1450 \cdot 4$ | $14.47 \cdot 9$ | $5427 \cdot 5$ | 5418 |
| 9 | $10717 \quad 6 \cdot 9$ | 0.67 | $0 \cdot 0071893$ | $1446 \%$ | $1444 \cdot 8$ | $5411 \cdot 5$ | $54 \quad 71$ |
| 10 | $10814 \quad 20 \cdot 1$ | $0 \cdot 56$ | $0 \cdot 0071759$ | $1444 \cdot 3$ | $1444 \cdot 3$ | $54 \quad 5$ | $54 \quad 5 \cdot 3$ |
| 11 | $10911133 \cdot 8$ | $0 \cdot 43$ | $0 \cdot 0071603$ | 1445 \% | $1446 \cdot 2$ | $54 \quad 7 \cdot 6$ | $54 \quad 12 \cdot 1$ |
| 12 | $\begin{array}{llll}110 & 8 & 47\end{array}$ | $0 \cdot 30$ | $0 \cdot 0071421$ | $1447{ }^{\prime} 9$ | $1450 \cdot 0$ | 5418 | 5426 0 |
| 13 | $\begin{array}{llr}111 & 6 & 2 \\ 112\end{array}$ | 0.17 | $0 \cdot 0071214$ | $1452 \cdot 5$ | $1455 \cdot 4$ | $5435 \cdot 1$ | 5445 |
| 14 | $1128317 * 6$ | N. $0 \cdot 05$ | $0 \cdot 0070981$ | $1458 \cdot 5$ | $15 \quad 2 \cdot 0$ | $5457 \cdot 2$ | $55 \quad 909$ |
| 15 | $\begin{array}{llll}113 & 0 & 33\end{array}$ | S. $0 \cdot 06$ | $0 \cdot 0070721$ | $\begin{array}{lll}15 & 5 & 6\end{array}$ | $15 \quad 97$ | $5523 \cdot 3$ | $5537 \%$ |
| 16 | $1135749 \times 1$ | $0 \cdot 14$ | $0 \cdot 0070435$ | $15 \quad 13.4$ | $\begin{array}{llll}15 & 17 & 4\end{array}$ | 55.51 .9 | $56 \quad 6.6$ |
| 17 | $\begin{array}{llll}114 & 55 & 5 & 5\end{array}$ | $0 \cdot 20$ | $0 \cdot 0070123$ | 15 21.5 | 15257 | $5621 \cdot 8$ | $5637 \cdot 1$ |
| 18 | 1155222 | $0 \cdot 23$ | $0 \cdot 0069787$ | $1529 \cdot 8$ | $\begin{array}{llll}15 & 3 & 4 & 1\end{array}$ | $56 \quad 52 \cdot 3$ | $57 \quad 77$ |
| 19 | $1164939 \cdot 2$ | $0 \cdot 23$ | $0 \cdot 0069426$ | $1538 \cdot 2$ | $1542 \cdot 3$ | 5729.8 | 57378 |
| 20 | $11746 \quad 56 \cdot 6$ | $0 \cdot 19$ | $0 \cdot 0069041$ | $15 \quad 46 \cdot 3$ | $15 \quad 50 \quad 3$ | $5752 \cdot 7$ | $58 \quad 7 \cdot 4$ |
| 21 | $1184414 \cdot 3$ | $0 \cdot 14$ | $0 \cdot 0068634$ | $15 \quad 54 \cdot 3$ | $15 \quad 58$ '1 | 5821.9 | 5836 |
| 22 | $1194132 \cdot 3$ | S. 0 -06 | $0 \cdot 0068204$ | $\begin{array}{lll}16 & 1 & 8\end{array}$ | $\begin{array}{ll}16 & 5\end{array}$ | $58 \quad 49$ '5 | $59 \quad 27$ |
| 23 | $12038 \quad 50 \cdot 7$ | N. $0 \cdot 05$ | $0 \cdot 0067755$ | $\begin{array}{lll}16 & 8 \cdot 7\end{array}$ | $1611{ }^{16} 7$ | 59) $14 \cdot 7$ | 59257 |
| 24 | $\begin{array}{llll}121 & 36 & 9 \cdot 5\end{array}$ | $0 \cdot 18$ | $0 \cdot 0067287$ | $1614 \times$ | $1616 \%$ | $5935 \cdot 3$ | $5943 \cdot 3$ |
| 25 | $1223328 \cdot 7$ | $0 \cdot 31$ | $0 \cdot 0066803$ | $1618{ }^{\circ} 0$ | 1619 '0 | 5949 '1 | $5952 \cdot 8$ |
| 26 | 12330484 | 0*44 | $0 \cdot 0066302$ | $\begin{array}{llll}16 & 19 & 4\end{array}$ | $1619{ }^{\circ} 0$ | 5954.0 | 5952 |
| 27 | $124 \quad 28 \quad 8 \%$ | $0 \cdot 56$ | $0 \cdot 0065788$ | $1617 \cdot 7$ | 1615 \% | 59479 | $5940 \cdot 3$ |
| 28 | $\begin{array}{lllll}125 & 25 & 29 & 5\end{array}$ | 0.68 | $0 \cdot 0065260$ | 1612 's | $16 \quad 9{ }^{16}$ | 5929.9 | 59170 |
| 29 | $126 \quad 2251 \cdot 2$ | $0 \cdot 78$ | $0 \cdot 0064718$ | $16 \quad 50$ | $16 \quad 16$ | $59 \quad 1 \cdot 3$ | $58 \quad 43 \cdot 4$ |
| 30 31 | 19720 $12013 \cdot 8$ | $0 \cdot 85$ | $0 \cdot 0064165$ | $15 \cdot 5.4$ | 15 49 <br>   | $5823 \cdot 5$ | 58 ¢ $2 \cdot 4$ |
| 31 | $12817 \quad 37 \cdot 3$ | $0 \cdot 90$ | 0 -0063599 | $1542 \times 8$ | $1536 \cdot 6$ | $5739 \cdot 8$ | $5717 \cdot 0$ |
| 32 | $129 \quad 15 \quad 1 \quad 8$ | N. 0 '92 | $0 \cdot 0063020$ | $15 \quad 30 \quad 3$ | $1524: 2$ | $5654 \%$ | 5631 |

## MEAN TIME.

|  |  | THE MOON'S |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Longitude. |  | Latitude. |  | Age. <br> Noon. | Meridian <br> Passage. |
|  |  | Noon. | Midnight. | Noon. | Midnight. |  |  |
| Mon. | 1 | 296 $32^{\prime}{ }^{\prime} 49^{\prime \prime} \cdot 0$ | 303 ${ }^{\circ} 42^{\prime} 34^{\prime \prime} \cdot 0$ | N. $313354 \cdot 5$ |  | $15{ }^{\text {d }} \cdot 5$ | $\begin{array}{ccc}\mathrm{h} & \mathrm{m} \\ 13 & 43\end{array}$ |
| Tues, | 2 | $3104648 \cdot 7$ | $\begin{array}{llll}317 & 45 & 5 & 3\end{array}$ | 423507 | 44229 's | 16.5 | 1435 \% |
| Wed. |  | $32437 \quad 5 \cdot 4$ | $3312239 * 3$ | $45646 \cdot 2$ | $\begin{array}{llll}5 & 6 & 39\end{array}$ | $17 \cdot 5$ | 1524 '4 |
| Thur. | 4 | 338 1 46 '5 | $3443434 \cdot 4$ | $\begin{array}{llll}5 & 12 & 12 & 7\end{array}$ | $\begin{array}{llll}5 & 13 & 35\end{array}$ | $18 \cdot 5$ | $16 \quad 10 \cdot 4$ |
| Frid. | 5 | $351 \quad 117 \cdot 3$ | $3572216 \times 2$ | 5 10 57 | $\begin{array}{lllll}5 & 4 & 31 & 1\end{array}$ | $19 \cdot 5$ | $1654 \cdot 7$ |
| Sat. | 6 | $33756 \cdot 8$ | $948 \quad 48 \cdot 9$ | 45431.4 | $44112 \cdot 8$ | $20 \cdot 5$ | $1738 \cdot 3$ |
| Sun. | 7 | $\begin{array}{llll}15 & 55 & 25 & 7\end{array}$ | 215882.2 | $42450 \cdot 5$ | $4 \quad 5 \quad 40 \cdot 2$ | 21.5 | 1822 |
| Mon. | 8 | $275814 \cdot 8$ | $\begin{array}{llll}33 & 55 & 41 & 0\end{array}$ | $\begin{array}{lllllll}3 & 43 & 57\end{array}$ | 31956 '9 | $22 \cdot 5$ | $19 \quad 6 \cdot 9$ |
| Tues. | 9 | 39 51 17 | $4545 \quad 42: 2$ | 25355 | $226 \quad 76$ | $23 \cdot 5$ | 1952.9 |
| Wed. | 10 | $\begin{array}{llll}51 & 39 & 29 & 9\end{array}$ | $57 \quad 3315 \cdot 1$ | $\begin{array}{llll}1 & 56 & 49 & 9\end{array}$ | 126186 | 24.5 | $20.40 \cdot 5$ |
| Thur. | 11 | $\begin{array}{llll}63 & 27 & 30^{\circ} 9\end{array}$ | $692247 \%$ | N.0 54 | N. 02242.9 | $25 \cdot 5$ | 2129.4 |
| Frid. | 12 | $75 \quad 1933 \cdot 5$ | $81 \quad 1814 \cdot 1$ | S. 0 O 9 9 45 '8 | S. 0 42 16 4 | 26 \% | 2219 |
| Sat. | 13 | $871912 \cdot 1$ | $93 \sim 246 * 9$ | 11428.9 | 146 | $27 \cdot 5$ | $23 \quad 9 \cdot 1$ |
| Sun. | 14 | $99 \quad 2914.9$ | 105 38585 | ${ }_{2} 1_{1} 1636 \cdot 1$ | 2 45 47 <br>    | $28 \cdot 5$ | $23 \quad 58 \cdot 5$ |
| Mon. | 15 | $1115140 \cdot 3$ | $118 \quad 754 \cdot 6$ | $\begin{array}{lllll}3 & 13 & 13\end{array}$ | $33834 \cdot 0$ | 29.5 | ठ |
| Tues. | 16 | $1242736:$ | $130 \quad 5046 \times$ | 4 1 25  | $42127 \times$ | $0 \cdot 9$ | $047 \cdot 1$ |
| Wed. | 1.7 | $13717 \quad 25 \cdot 5$ | $1434730 \cdot 3$ | 4 38 20 | $45146 \cdot 2$ | $1 \cdot 9$ | 134.6 |
| Thur. | 18 | $\begin{array}{llllll}150 & 20 & 57 & 8\end{array}$ | $1565743 \cdot 5$ | $\begin{array}{lll}5 & 1 & 29\end{array}$ | $\begin{array}{llll}5 & 7170\end{array}$ | 29 | 2214 |
| Frid. | 19 | $1633742 \cdot 7$ | $1702050 \%$ | $\begin{array}{lllll}5 & 8 & 58\end{array}$ | $\begin{array}{lll}5 & 6 & 26 \cdot 4\end{array}$ | $3 \cdot 9$ | $3 \quad 8 \quad 2$ |
| Sat. | 20 | $\begin{array}{llll}177 & 7 & 2 \cdot 4\end{array}$ |  | $\begin{array}{lllll}4 & 59 & 37 & 5\end{array}$ | $44831 \% 6$ | $4 \cdot 9$ | $355 \%$ |
| Sun. | 21 | $1904820 \cdot 4$ | $1974318 \cdot 5$ | $43313{ }^{\circ} \mathrm{O}$ | $\begin{array}{lllllllllll}4 & 13 & 49 & 6\end{array}$ | $5 \cdot 9$ | $444 \cdot 6$ |
| Mon. | 22 | $20441 \quad 3 \cdot 7$ | $2114131 \cdot 3$ | $\begin{array}{lllll}3 & 50 & 33 & 3\end{array}$ | 3 23 40 | 6.9 | 536 |
| Tues. | 23 | $2184435 \cdot 4$ | 225508081 | $\begin{array}{llll}2 & 53 & 32\end{array}$ | 220343 | $7 \cdot 9$ | $630{ }^{6} 9$ |
| Wed. | 24 | 232 5759 -5 | 210 | $14513 \cdot 8$ | S. 18847 | 8.9 | 728 |
| Thur. | 25 | 247191994 | $2543248 \cdot 7$ | S. $0 \quad 2942$ | N.0 0914.9 | $9{ }^{\circ} 9$ | $8 \quad 293$ |
| Frid. | 26 | $261+656 \cdot 6$ | 2691331.6 | N. 048680 | 12610.9 | 10.9 | $930 \%$ |
| Sat. | 27 | $27615 \quad 57 \%$ | $283 \quad 2935 \cdot 4$ | $2 \quad 2 \quad 48 \cdot 4$ | $23720 \cdot 4$ | $11 \%$ | 1031.0 |
| Sun. | 28 | $2904142 \cdot 0$ | $2975134 \cdot 1$ | $\begin{array}{llll}3 & 9 & 11 & 7\end{array}$ | $33751 \times 0$ | $12 \cdot 9$ | 1128.6 |
| Mon. | 29 | 3045829 | $\begin{array}{lllll}312 & 1 & 45 & 7\end{array}$ | $\begin{array}{lllll}4 & 2 & 52 & 3\end{array}$ | 4 | $13 \cdot 9$ | $1222 \cdot 8$ |
| Tues. | 30 | 319 0 47 | $325 \quad 55 \quad 1 \quad 8$ | $44047{ }^{1} 1$ | $4{ }_{4}^{4} 518 \quad 6$ | $14 \cdot 9$ | $13 \quad 13$ \% |
| Wed. | 31 | $332444^{\prime} 0$ | $339 \quad 2735 \quad 7$ | 51128.5 | $\begin{array}{lllll}5 & 5 & 19\end{array}$ | $15 \cdot 9$ | 14 1 1 '5 |
| Thur. | 32 | $346 \quad 5 \quad 26 \cdot 6$ | $3523733 \cdot 7$ | N.5 54588 | N. 5 5 0 3 $37 \times$ | $16 \cdot 9$ | $1447 \cdot 4$ |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Hour. | Right Ascensio | eclination. | $\begin{aligned} & \text { r. Dec. } \\ & \text { com. } \end{aligned}$ | Hour. | Right Ascensio | Declination. | Dif. Des |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | TUESDAY 9. |  |  |  | THURSDAY 11. |  |  |
| 0 | h m s | N. $17^{\circ} 311^{\prime} 41^{\prime \prime} \cdot 8$ | $73 \cdot 00$ | 0 |  | $214536 \cdot 6$ | $0{ }^{0}$ |
| 1 | $22756 \cdot 71$ | 173859 '8 | 72 | 1 | $\begin{array}{llll}4 & 7 & 5 & 96\end{array}$ | $214836 \cdot 9$ | 29.05 |
| 2 | $22957: 30$ | $174613 \cdot 1$ | $71 \cdot 4$ | 2 | 4 9 $13 \times 6$ | $215131 \% 2$ | 23.05 |
| 3 | 23158.03 | 175321.8 | 70 | 3 | $41120 \% 8$ | 215419.5 | 27.02 |
| 4 | $233 \quad 58.91$ | $\begin{array}{lll}18 & 0 & 25\end{array}$ | $69 \cdot 8$ | 4 | 41328.22 | $2157 \quad 1.6$ | 26.02 |
| 5 | $\begin{array}{lllllllllll}2 & 35 & 59 & \\ 2\end{array}$ | $18 \quad 7248$ | $9^{\circ} 07$ | 5 | $41535 \% 8$ | 2159377 | $24 \cdot 98$ |
| 6 | 238107 | $181419 \cdot 2$ | $68 \cdot 27$ | 6 | 4174365 | 22.876 | $23 \cdot 93$ |
| 7 | $\begin{array}{lll}240 & 2 & 37\end{array}$ | 18918 | $67 \%$ | 7 | 419515154 | 22431 | $22 \cdot 95$ |
| 8 | $\begin{array}{lll}2 & 42 & 3 \\ 8 & 80\end{array}$ |  | $6 \cdot 63$ | 8 | 215975 | $22 \quad 649$ | $21 \cdot 90$ |
| 9 | $244 \quad 5 \cdot 38$ | $18 \quad 3433 \cdot 3$ | \% | 9 | $24 \quad 765$ | 22 | 20-85 |
| 10 | $246 \quad 710$ | 184188 | $64 \cdot 95$ | 10 | $42615 \cdot 86$ | 22115 | 19888 |
| 11 | $248 \quad 8 \cdot 96$ | $184738 \cdot 1$ | $64 \cdot 17$ | 11 | $42824 \cdot 19$ | $22 \begin{array}{lll}23 & 4 & 8\end{array}$ | 18 80 |
| 12 | $250 \quad 10 \cdot 97$ | $18543 \cdot 1$ | 3 33 | 12 | 43032.61 | $221457 \cdot 6$ | 17.75 |
| 13 | $25213 \cdot 12$ | $190023 \cdot 1$ | $62 \cdot 4$ | 13 | $43241 \cdot 14$ | 221644 | 16.72 |
| 14 | $25415 \cdot 42$ | $19638 \cdot 0$ | $61 \cdot 6$ | 14 | $43449 \cdot 76$ | 22182 | $15 \cdot 67$ |
| 15 | 2 $5617 \quad 178$ | $191247 \cdot 9$ | $60 \%$ | 15 | 43658.49 | $22 \quad 1958 \cdot 4$ | 14.60 |
| 16 | $2 \begin{array}{llll}58 & 20 & 45\end{array}$ | 19 18 59 | $59 \cdot 93$ | 16 | $439 \quad 7 \times 31$ | 222126.0 | 13.55 |
| 17 | $\begin{array}{llll}3 & 0 & 23 & 19\end{array}$ | 192452 | 59.08 | 17 | $44116: 22$ | 22.22473 | 12.50 |
| 18 | 3 - $26 \cdot 07$ | $193046 \cdot 7$ | $58 \cdot 22$ | 18 | $44325 \cdot 22$ | 2924 | 11.43 |
| 19 | $\begin{array}{llll}3 & 4 & 29 & 10\end{array}$ | $193636 \%$ | 57.3 | 19 | $\begin{array}{lllllllll}4 & 45 & 34 & 32\end{array}$ | $22.25 \quad 10 \cdot 9$ | 10 '38 |
| 20 | $\begin{array}{llll}3 & 6 & 32 & \cdot 27\end{array}$ | $194220{ }^{\circ}$ | $36 \cdot 4$ | 20 | $447 \quad 43 \cdot 49$ | $22 \quad 2613 \cdot 2$ | 932 |
| 21 | $\begin{array}{lllll}3 & 8 & 35 & 58\end{array}$ | 194758 's | $55 \cdot 58$ | 21 | $44959 \cdot 76$ | 22 $277^{9} \cdot 1$ | 8 -23 |
| 22 | $\begin{array}{llll}3 & 10 & 39\end{array}{ }^{\circ} 05$ | $195332 \cdot 3$ | 94 ${ }^{54}$ | 22 | $452 \quad 2 \cdot 10$ | $22.2758 \cdot 5$ |  |
| 23 | $31242 \% 66$ | N. $1959 \quad 0 \%$ | 3-80 | 23 | 4 5t 11.53 | .22 2841. |  |
|  | WEDNESDAY 10. |  |  |  | FRIDAY 12. |  |  |
| 0 | $31446 \cdot 41$ | N. 20 4 23:4 | -92 | 0 | $45621 \cdot 03$ | N.22 29 18 -2 | 5 03 |
| 1 | $\begin{array}{llll}3 & 16 & 50 & 31\end{array}$ | $20 \quad 9 \quad 40 \cdot 9$ | 52.02 | 1 | $45830 \cdot 61$ | $22.2948 \cdot 4$ | $3 \cdot 95$ |
| 2 | $31854 \cdot 3$ | $201453 \cdot 0$ | $51 \cdot 12$ | 2 | $040 \div$ | $223012 \cdot 1$ | 2 's8 |
| 3 | $32058 \cdot 54$ | 2019597 | $50 \cdot 2$ | 3 | ¢ 49.97 | $223029 *$ | 1-80 |
| 4 | 3 23 2 | 2025009 | 9 | 4 | $459 \cdot 76$ | 223040 | 0 -72 |
| 5 | $\begin{array}{lll}3 & 25 & 7 \\ 3 & 35\end{array}$ | $202956 \%$ | 48 |  | $\begin{array}{llll}5 & 7 & 9 & 61\end{array}$ | 22 $3044 \cdot 5$ | 0\% |
| 6 | $32711 \cdot 97$ | 203446 '8 | 77 | 6 | $\begin{array}{lllll}5 & 9 & 19 & 52\end{array}$ | 29 $3042 \times 3$ | $1 \cdot 45$ |
|  | $32916 \cdot 73$ | 2039315 | $46 \cdot 62$ | 7 | $51129 \cdot 49$ | 22 $3033 \times$ | 2 53 |
| 8 | 33121.64 | $204410 \%$ | $45 \cdot$ |  | 513395 | $22.3018 \cdot 4$ | $3 \cdot 62$ |
|  | $3 \quad 3326 \cdot 68$ | $204844 \cdot 1$ | 44.63 | 9 | $\begin{array}{llll}5 & 15 & 49\end{array} 60$ | 22.29567 | 4\%0 |
| 10 | $\begin{array}{lllll}3 & 35 & 31 & 87\end{array}$ | 205311.9 | $43 \cdot 72$ | 10 | $\begin{array}{lllllllll}5 & 17 & 59 & 73\end{array}$ | $\underline{29} 298$ | 5 50 |
| 11 | $\begin{array}{llll}3 & 37 & 37 & 20\end{array}$ | $205734 \cdot 2$ | 42.75 | 11 | 520991 | $22.2853 \cdot 7$ | 6 288 |
| 12 | $\begin{array}{llll}3 & 39 & 42 & 67\end{array}$ | $21 \quad 150 \%$ | 41 'so | 12 | 5 2e $20 \cdot 14$ | $22.8812 \cdot 4$ | $7 \mathrm{~g} \mathrm{~g}^{\prime}$ |
| 13 | $34148 \cdot 28$ | 21615 | 40-85 | 13 | 5 2. $30 \cdot 41$ | 229724 | 07 |
| 14 | 34354.02 | $2110 \quad 6.6$ | $39 \cdot 90$ | 14 | $52640 \cdot 73$ | $22 \sim 630 \cdot 1$ | $10 \% 5$ |
| 15 | $\begin{array}{lllll}3 & 45 & 59 & 90\end{array}$ | $21146 \%$ | $38 \cdot 92$ | 15 | 528.51 .08 | $29.2599 \cdot 2$ | $11 \cdot 25$ |
| 16 | 3 48 5 | $\begin{array}{lllll}21 & 17 & 59 & 5\end{array}$ | $37 \cdot 97$ | 16 | $\begin{array}{llll}5 & 31 & 1 & 46\end{array}$ | 292421 | 1235 |
| 17 | $\begin{array}{llllllllllll}3 & 50 & 12 & 06\end{array}$ | 2121473 | 36.98 | 17 | $\begin{array}{llllll}5 & 33 & 11 & 88\end{array}$ | 22.237 | . $13 \cdot 48$ |
| 18 | $3 \begin{array}{llllllll}3 & 52 & 18 & 35\end{array}$ | 212529.2 | $36 \cdot 00$ | 18 | $535 \quad 22 \times 33$ | $22.2147 \%$ | 4 583 |
| 19 | 35424.76 | $\underline{21} 2995$ | $35 \cdot 0$ | 19 | $53732 \cdot 80$ | 22.2019 .8 | $15 \cdot 62$ |
| 20 | 35663131 | 213235 ! | 34'03 | 20 | $53943 \cdot 30$ | 221846 1 | $16 \%$ |
| 2 | $\begin{array}{lllllll}3 & 58 & 37-98\end{array}$ | 213559.6 | 38.05 | 21 | $54153 \cdot 82$ | $22 \begin{array}{lll}2 & 17 & 5\end{array}$ | 1780 |
| 22 | $4 \quad 0 \quad 4479$ | 2139179 | 32 '05 | 22 | $544 \quad 436$ | $\begin{array}{lllll}22 & 15 & 18\end{array}$ | $18 \cdot 92$ |
| 23 | $4 \quad 251 \cdot 72$ | $214230 \%$ | 31.07 | ¢3 | $54614 \cdot 91$ | $221325 \cdot 4$ | $20 \cdot$ |
| 24 | $\begin{array}{lllll}4 & 4 & 58 & 78\end{array}$ | N.21 $4536 \cdot 6$ |  | 24 | $54825 \cdot 48$ | N.22 $11 \times 5$ |  |

THE MOON'S RIGHT ASCENSION AND DECLINATION.

| H0 | Right A scens | Declinatio |  | Hour. | Right Ascension. | Declinatio | Iff. Dec. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | SATURDAY 13. |  |  |  | MONDAY 15. |  |  |
|  |  |  |  |  | / | - ${ }^{11}$ |  |
| 0 | 54825 | N. $2211125{ }^{\prime} 4$ | 21. | 0 | $\begin{array}{llll}7 & 32 & 19 & 48\end{array}$ | N. 1830 8 0 |  |
| 1 | $\begin{array}{llll}5 & 50 & 36 & 06\end{array}$ | $\begin{array}{llll}22 & 9 & 18 & 8\end{array}$ | 22 | 1 | $73427 \cdot 81$ | $\begin{array}{llll}18 & 23 & 2 & 3\end{array}$ |  |
| 9 | $5 \quad 524$ | 22.75 | 23 -27 | 2 | $\begin{array}{llll}7 & 36 & 36 & 05\end{array}$ | $\begin{array}{llll}18 & 15 & 50 & 9\end{array}$ |  |
| 3 |  | 22 $446 \cdot 1$ | 24 | 3 | $\begin{array}{llllllllll}7 & 38 & 44 & 19\end{array}$ | $18 \quad 8 \quad 33 \cdot 9$ |  |
| 4 | $\begin{array}{llll}5 & 57 & 7 & 83\end{array}$ | 22 2 19'8 | 26 | 1 | 7405205 | $18 \quad 1 \begin{array}{lll}18 & 11\end{array}$ | 74.68 |
|  | $55_{5}^{5} 59.18 \cdot 42$ | 215947 | 26 | 5 | 7430021 | $17 \quad 53 \quad 43 \cdot 2$ | -60 |
| 6 | 6 1-129 * 02 | $2157 \quad 7 \cdot 8$ | 27.65 | 6 | $\begin{array}{lllll}7 & 45 & 8 & 08\end{array}$ | $17 \quad 46 \quad 9 \cdot 6$ | 52 |
|  | $\begin{array}{llll}6 & 3 & 39\end{array}$ | 215421.9 | 2872 | 7 | $\begin{array}{lllllllll}7 & 47 & 15 & 86\end{array}$ | $173830 \cdot 5$ | 43 |
| 8 | $\begin{array}{llll}6 & 5 & 50 & 18\end{array}$ | $\begin{array}{llll}21 & 51 & 99 & 6\end{array}$ | 29 '8: | 8 | $74923 * 5$ | $\begin{array}{llll}17 & 30 & 45\end{array}$ | -32 |
| 9 | $\begin{array}{lrrr}6 & 8 & 0 & 75\end{array}$ | $\begin{array}{lllllll}21 & 48 & 30 & 7\end{array}$ | $30 \cdot 90$ | 9 |  | 172256.0 | 22 |
| 0 | $\begin{array}{llll}6 & 10 & 11 & 30\end{array}$ | $\begin{array}{llll}21 & 4 & 5 & 25\end{array}$ | $31 \cdot 97$ | 10 | $\begin{array}{lllll}7 & 53 & 38 & 63\end{array}$ | $\begin{array}{llll}17 & 15 & 0 \cdot 7\end{array}$ | '12 |
| 11 | $\begin{array}{llll}6 & 12 & 21 & 1 \\ 6\end{array}$ | $214213 \cdot 5$ | $33 \cdot 07$ | 11 | $75546 \cdot 03$ | $17 \quad 700$ | -98 |
| I2 | 6 6-14 32 *35 | $21 \begin{array}{llll}21 & 38 & 55 & 1\end{array}$ | 3.4 '15 | 12 | $\begin{array}{llllll}7 & 57 & 53 & 33\end{array}$ | $\begin{array}{llll}16 & 58 & 54\end{array}$ | -87 |
| 13 | $\begin{array}{llll}6 & 16 & 42 & 85\end{array}$ | $213530 \cdot \underline{\square}$ | 35.22 | 13 | $8 \quad 0 \quad 0 \cdot 54$ | $1650 \quad 42 \cdot 9$ | 72 |
| 14 | $\begin{array}{llll}6 & 18 & 53\end{array}$ | $213158 \cdot 9$ | $36 \cdot 30$ | 15 | $8 \quad 2 \quad 7 \cdot 65$ | $16 \quad 42 \quad 26 \cdot 6$ | . 60 |
| 5 | $\begin{array}{llll}6 & 21 & 3 & 76\end{array}$ | $21 \quad 28 \quad 21 \cdot 1$ | $37 \cdot 37$ | 5 | $8 \quad 4 \quad 14 \quad 66$ | $1634 \quad 5{ }^{16}$ | $\cdot 45$ |
| 16 | $6 \begin{array}{lll}6 & 23 & 14\end{array} 18$ | 212436.9 | $38 \cdot 48$ | 6 | $8 \quad 621.58$ | $\begin{array}{lllll}16 & 25 & 38 & 3\end{array}$ | '30 |
| 17 | $\begin{array}{lllll}6 & 25 & 24 & 57\end{array}$ | $\begin{array}{llll}21 & 20 & 46 \cdot 3\end{array}$ | 3 | 17 | 88888.40 | $\begin{array}{llll}16 & 17 & 6 & 5\end{array}$ | '13 |
| 18 | $\begin{array}{llll}6 & 27 & 31 & \\ 6 & 29 & 9\end{array}$ | 21 16 49  | $40 \cdot 59$ | 18 | $\begin{array}{lllll}8 & 10 & 35 & 12\end{array}$ | $\begin{array}{llll}16 & 8 & 29\end{array}$ | '98 |
| 19 | $\begin{array}{llll}6 & 29 & 45 & 24\end{array}$ | $\begin{array}{llll}21 & 12 & 45 & 7\end{array}$ | $41 \cdot 6$ | 9 | $\begin{array}{llllllll}8 & 12 & 41 & 75\end{array}$ | $\begin{array}{llll}15 & 59 & 47 & 8\end{array}$ | '80 |
| 20 | $\begin{array}{llllllllllllllll}6 & 31 & 55 & 52\end{array}$ | 21 8 35  <br> 1    | 42 7 70 | 20 | 8 8 14 48 28 | 155110 | . 62 |
| , | $\begin{array}{llll}6 & 34 & 5\end{array}$ | $21 \quad 4 \quad 197$ | $43 \cdot 77$ | 1 | 881651.71 | $\begin{array}{llll}15 & 42 & 9 & 3\end{array}$ | '45 |
| 9 | $\begin{array}{llll}6 & 36 & 15 & * 95\end{array}$ | 2085957 | 4.1 | 22 | $\begin{array}{llll}8 & 19 & 1 & 04\end{array}$ | $\begin{array}{lllllllllll}15 & 33 & 12 & 6\end{array}$ | -25 |
| 93 | $63826 \cdot 11$ |  | 45 | 23 | 821728 | N. 15 24 11 1 | '05 |
|  | SUNDAY 14, |  |  | TUESDAY 16. |  |  |  |
| 0 | $6{ }_{6} 40 \times 36: 21$ | N.20 50 50 * 9 | 46 | 0 | $8 \quad 23 \quad 13 \cdot 42$ | $\begin{array}{llll}\text { N. } 15 & 15 & 4 & 8\end{array}$ | -85 |
| 1 | $6 \cdot 4246 \cdot 27$ | 20) 46 | $47 \cdot 97$ | 1 | $\begin{array}{llll}8 & 25 & 19 & 46\end{array}$ | $\begin{array}{lllll}15 & 5 & 53 & 7\end{array}$ | -63 |
| 8 | $64^{6} 4456 \div 27$ | $204123 \cdot 6$ | $49^{\circ} 0$ | 2 | $8897 \quad 25 \cdot 41$ | $145637^{\circ} 9$ | -42 |
| 3 | $647 \quad 6 \cdot 29$ | $\begin{array}{llll}20 & 36 & 29 & 5\end{array}$ | 5 | 3 | $\begin{array}{lllllllllllllllllll}8 & 29 & 31 & 27\end{array}$ | $144717 *$ | 4'18 |
| 4 | $\begin{array}{llll}6 & 49 & 16 \cdot 11\end{array}$ | $\begin{array}{lllll}20 & 31 & 29 & 9\end{array}$ |  | 4 | $883137 \cdot 03$ | $143752 \cdot 3$ | $94 \cdot 95$ |
| 5 | 6 51 95 5 <br> 6 50 5  | $2026 \quad 22$ |  | 5 | \& $33.42 \cdot 69$ | 142892 | 5 70 |
| 6 | $\begin{array}{llll}6 & 53 & 35 & 73\end{array}$ | $20 \quad 21 \quad 9 \cdot 9$ | 53 | 6 | $883548 \cdot 96$ | $\begin{array}{lllllllllllll}14 & 18 & 48 & 4\end{array}$ | $6 \cdot 45$ |
| 7 | $\begin{array}{llll}6 & 55 & 45 & \cdot 14 \\ 6 & 5 & 5 & 5\end{array}$ | 20 15 51 0 <br> 0 10 0 0 | $54 \cdot 1$ | 7 | $\begin{array}{lllll}8 & 37 & 53 & 74\end{array}$ | $\begin{array}{llll}14 & 9 & 9 & 7\end{array}$ | $7 \times 20$ |
| 8 | $\begin{array}{llll}6 & 57 & 55 & 10\end{array}$ | 20 $10 \sim 5$ | $55 \cdot 20$ | 8 | $883959 \cdot 13$ | $\begin{array}{lll}13 & 59 & 26 \cdot 5\end{array}$ | 7'93 |
|  | 7 0) $4 \cdot 68$ | 20 4 $54 \cdot 7$ | $56 \cdot 2$ | , | $8 \quad 42 \quad 4 \cdot 43$ | $134938 * 9$ | -67 |
| 10 | 7 ¢ 14:30 | $19) 5917 \cdot 4$ | $57 \cdot 28$ | 10 | $8.44 \quad 9.64$ | $\begin{array}{lllll}13 & 39 & 46\end{array}$ | $99 \cdot 38$ |
| 11 | $7423 \cdot 65$ | 19533140 | $58 \cdot 25$ | 11 | $88.4614 \cdot 76$ | $\begin{array}{llllll}13 & 29 & 50\end{array}$ | $100 \cdot 08$ |
| 12 | $7 \quad 6 \quad 33{ }^{\prime} 03$ | $194744 \cdot 5$ | $59 \cdot 25$ | 12 | 8 ¢ $4819 \cdot 79$ | $\begin{array}{llll}13 & 19 & 50\end{array}$ | $100 \cdot 80$ |
| 13 | 7 \% 8 42 34 | $194149{ }^{\circ} 0$ | -25 | 13 | $8 \quad 5024 \cdot 73$ | $\begin{array}{lll}13 & 9 & 45\end{array}$ | -48 |
| 14 | $71051 \cdot 57$ | $193547 \times$ | -25 | 14 | $85299 \cdot 59$ | $125936 *$ | -17 |
| 15 | $\begin{array}{llll}7 & 13 & 0 & 72\end{array}$ | $19 \quad 2940{ }^{\circ} 0$ | 62 | 1.5 | $8 \quad 5434 \cdot 36$ | $124923 \cdot 4$ | .87 |
| 16 | $\begin{array}{llll}7 & 15 & 9 & \text { '80 }\end{array}$ | $19 \times 3 \leq 6 \cdot 5$ | -28 | 16 | 8 $56 \quad 39$ '05 | $1239 \quad 6 \cdot 2$ | 5 |
| 17 | 77 17 18 | $19 \quad 17 \quad 7 \quad 2$ | -22 | 17 | \$ 5S $43 \cdot 66$ | $12 \mathrm{~m} 45 \cdot 1$ | '20 |
| 18 | $\begin{array}{lllll}7 & 19 & 97 & 71\end{array}$ | $19 \quad 10419$ | $65 \cdot 0$ | 18 | $90048 \cdot 18$ | $\begin{array}{lllll}12 & 18 & 19\end{array}$ | '83 |
| 19 | $\begin{array}{llll}7 & 91 & 36 & 55\end{array}$ | $19) 410 \cdot 7$ | '15 | 19 | 9 2 52 62 | $12750{ }^{\prime} 9$ | $105 \cdot 50$ |
| 80 | $\begin{array}{llllll}7 & 23 & 45 & 30\end{array}$ | $\begin{array}{llllllllll}18 & 5 & 5 & 33 & 8\end{array}$ | $67 \cdot 13$ | 20 | 9) $456 \cdot 99$ | $115717 \%$ | $106 \cdot 12$ |
| 91 | $\begin{array}{llll}7 & 95 & 53\end{array}$ | IS 50518 | $68 \cdot 10$ | 21 | 9) 7 1 2s | $114641 \%$ | $106 \cdot 77$ |
| 9 | $\begin{array}{lll}7 & 28 & 2 \cdot 57\end{array}$ | 1844 | 69.05 | 29 | $9 \quad 9 \quad 5 \cdot 49$ | 113600 | 107'38 |
|  | 7 30 11 07 <br> 7 0 10  | $\begin{array}{llll}18 & 37 & 8 \cdot 1\end{array}$ | $70 \cdot 02$ | 23 | $\begin{array}{llll}9 & 11 & 9 & 62\end{array}$ | $\begin{array}{llll}11 & 25 & 16 & 3\end{array}$ | 108 '00 |
| 94 | $73219 \cdot 48$ | N.18 30 8 \% |  | 24 | $\begin{array}{llll}9 & 13 & 13 & 69\end{array}$ | N. 111428.3 |  |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

|  | Righ | Declination. | $\operatorname{mec}$ | I | Rit | Declination. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
|  | $16^{21} 42 \cdot 78$ | 22.2904 | 27.03 | 0 | 182653 | $211556 \%$ | 47288 |
|  | $162418 \cdot 55$ | $22.50 \%$ | 25.50 | 1 | $182927 \cdot 53$ | 211112.9 | $48 \% 8$ |
| 2 | 162654.45 | $22 \mathrm{7} 35 \%$ | 23.98 | 2 | 18321.65 | $21 \quad 6 \quad 20 \cdot 5$ |  |
| 3 | $16 \quad 2930.49$ | $2{ }^{2} \times 7959.5$ | $22 \cdot 4$ | 3 | $183435 \cdot 57$ | $21 \quad 1 \quad 19.6$ |  |
| 4 | 1632.6 .65 | $221214 \cdot 1$ | 20 |  | $\begin{array}{lllll}18 & 37 & 9 & 27\end{array}$ | ${ }_{20} 5^{56} 10 \cdot 1$ |  |
|  | $163442 \cdot 94$ | $221419 \cdot 4$ | 19 '3 |  | 18394276 | $2050-52$ |  |
| 6 | 16371934 | $221615 \cdot 4$ | 17.78 | 6 | 18421602 | 204525 |  |
| 7 | $163955 \cdot 84$ | $2218 \quad 2 \cdot 1$ | $16 \cdot 23$ |  | $184449 \cdot 04$ | 203950 |  |
|  | $164232 \cdot 45$ | $221939 \cdot 5$ | 14. |  | 1847 21.84 | 2034 |  |
|  | $1645 \quad 9 \cdot 15$ | 22.2176 | $13 \cdot 10$ |  | 184954. | 202816 | 59 |
| 10 | $164745 \cdot 93$ | 22.29261 | ${ }^{1} 5$ |  | 185226.69 | 20.2217 |  |
| 11 | $165022 \cdot 80$ | 292335.2 | $9 \cdot 97$ | 11 | $1854{ }^{18} 58 \cdot 75$ | 20169 |  |
| 19 | 165259 | $22.245^{\circ}$ |  | 12 | $185730 \cdot 54$ | $20 \quad 953$ |  |
| 13 | $16 \quad 55 \cdot 36 \cdot 73$ | $222595 \cdot 3$ | 6-82 | 13 | 1900208 | $20 \quad 3 \quad 30$ |  |
| 14 | 165813 '78 | $22.26 \quad 6 \cdot 2$ | 5-22 | 14 | $19 \sim 2$19 3 | 195658 |  |
| 15 | 17 O 50 | $222637 \cdot 5$ |  |  | $\begin{array}{llll}19 & 5 & 4.36\end{array}$ | 195019 |  |
| 16 | 17 3 <br> 17  <br>  03 | $222659 \cdot 4$ | 2.07 | 16 | $19 \quad 735 \cdot 09$ | 194332 |  |
|  | $17 \quad 6 \quad 5 \cdot 0$ | $229711 \cdot 8$ |  |  | $1910 \quad 5 \cdot 54$ | 193637 |  |
| 18 | $\begin{array}{llll}17 & 8 & 42 \cdot 40\end{array}$ | $22.2714 \cdot 7$ |  | 18 | $191235 \cdot 72$ | 192935 |  |
| , |  | 22.2781 |  |  | $1915 \quad 5 \cdot 60$ | 192225 |  |
| 20 | 17135685 | $222652 \cdot 0$ |  |  | $191735 \cdot 20$ | 1915 |  |
| 21 | 171634.08 | $22.266^{\circ}$ |  |  | $1920{ }^{19} 50$ | 19743 |  |
| $\xrightarrow{22}$ |  | $\begin{array}{llll}22 & 25 & 51 \\ 02 & 25 & 6\end{array}$ | ${ }^{7} 43$ |  | $192933 \cdot 51$ | 19011 |  |
| 23 | $\begin{array}{r} 172148.53 \\ \text { FRID. } \\ \text { F } \end{array}$ | $\begin{aligned} & \text { S. } 22.256 \\ & D A Y 26 . \end{aligned}$ | 9.02 | 23 | $1925 \quad 2 \cdot 23$ | 185232 $1 Y 28$. | 77 |
|  | 172425.72 | 5.22 .2412 |  |  | 19.730 .63 | $1844.46 \cdot 4$ |  |
|  | $17 \quad 27 \quad 2 \% 89$ | 2223 | 12.18 |  | 19295873 | 183653 |  |
| 2 | 1729 $40 \cdot 02$ | 22 21 55 <br> 20 9 9 <br> 20   | 13.77 3.73 |  | 193226.53 | 18.885 |  |
|  | 173217 | $\begin{array}{llllll}22 & 20 & 33 & 3\end{array}$ | 16 |  | 193454.01 | 182045 |  |
|  | $173454 \cdot 16$ | $22 \begin{array}{lll}19 & 1 \cdot 3\end{array}$ | 16 |  | $193721 \cdot 18$ | 181232 |  |
|  | $173731 \cdot 14$ | $221719{ }^{2} 9$ | $18 \cdot 47$ |  | 193948.04 | $\begin{array}{lll}18 & 4 & 11 \\ 17 & 51\end{array}$ |  |
|  | 17408.06 | $22 \quad 15 \quad 29$ | 20 0\% |  | 19421457 | 175544 |  |
|  |  |  | \% |  | 19444079 | 17 <br> 17 <br> 17810 |  |
|  | 174521 174758 | $\begin{array}{llll}22 & 11 & 19 \\ 22 & 9 & 0\end{array}$ | -15 |  | $\begin{array}{llll}19 & 47 & 6.69 \\ 19 & 49 & 30.26\end{array}$ | 173830 |  |
| 10 | $175034 \cdot 93$ | 22 | ${ }_{26}^{24}$ |  | 1951957 | 17 <br> 17 <br> 17 <br> 170 |  |
| 11 | 17531141 | 22.354 .4 | $27 \cdot 8$ | 11 | 195422.43 | 171152 |  |
| 12 | 17554778 | 22.176 | ${ }^{29}$ | 12 | $195647 \cdot 01$ | 17.247 |  |
| 13 | $\begin{array}{ll}17 & 58 \\ 18 & 24 \cdot 03\end{array}$ | 21 <br> 21 <br> 21 <br> 1 111.5 | 30 | 13 | $1959911 \cdot 27$ | 165336 16 |  |
| 14 | $\begin{array}{llll}18 & 1 & 0.17\end{array}$ | $\begin{array}{llll}21 & 55 & 6 \cdot 3\end{array}$ | 32 | 14 | 20 1 $35 \cdot 20$ | 164419 |  |
| 15 | $\begin{array}{llll}18 & 3 & 36 \cdot 17\end{array}$ | 215151.9 | $33 \cdot 5$ | 15 | 20 ${ }^{\text {a }}$ | 163457 |  |
| 16 | $18 \quad 6 \quad 12 \cdot 04$ | 214828.3 | -35-4 | 16 | $20 \quad 622 \cdot 06$ | 162528 |  |
| 17 | $\begin{array}{lllll}18 & 8 & 47 & 76\end{array}$ | $214455 \cdot 7$ | ${ }_{36} \cdot 9$. | 17 | 8 44:99 | 161554 |  |
| 18 |  | $214114 \cdot 0$ | $38 \cdot 4$ | 18 | $201117 \cdot 59$ | $16 \quad 614$ |  |
| 19 | 181358.74 | $213723 \cdot 4$ | 39.95 | 19 | $2013 \quad 29 \cdot 85$ | 15 |  |
| 20 | $181633 \cdot 98$ | ${ }_{21} 133 \quad 23 \cdot 7$ | 41.42 | 0 | $\begin{array}{llllllllll}20 & 15 & 51 & 77 \\ 20\end{array}$ | $\begin{array}{llllll}15 & 46 & 39\end{array}$ |  |
| 21 | $1819 \quad 9 \% 6$ | 212915 -2 | 42-90 | 21 | $2018 \quad 13 \quad 36$ | $153643 \times 8$ |  |
| 22 | $182143 \cdot 96$ | 212457.8 | ${ }^{-4437}$ | 22 | 202034 * | 1526 42 9 |  |
| 23 | $\begin{array}{llll}18 & 24 & 18.67\end{array}$ | 212031.6 |  | 23 | 202255.5 | 151637 |  |
|  | 2653 | $5.211556 \%$ |  |  | 2025 | S. $15 \quad 6 \quad 26.0$ |  |

## MEAN TIME.

## THE MOON'S RIGHT ASCENSION AND DECLINATION.



| MEAN TMME. |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | THE SUN'S Apparent |  | Logarithm of the Radius Vector of the Earth. | THE MOON'S |  |  |  |
|  | Longitude. | Latitude. |  | Semidiameter. |  | Iforizontal Parallax, |  |
|  | Noon. | Noon. | Noon. | Noon. | Mithight. | Nonn. | Midnight. |
|  |  | N. $0^{\prime \prime} \cdot 92$ | $0 \cdot 0063020$ | $15^{\prime} \quad 300^{\prime \prime} \cdot 3$ |  | 5654 \% | $56.31 \cdot 5$ |
| 2 | 13012974 | $0 \cdot 90$ | 0 0 0062429 | $\begin{array}{ll}15 & 18 \\ 15 & 18 \\ 15 & 7\end{array}$ | $\begin{array}{ll}15 & 24 \cdot 2 \\ 15 & 12.1\end{array}$ | 56 56 56 99.3 | $\begin{array}{llll}56 & 31 & 5 \\ 55 & 48 \\ 5 & \end{array}$ |
| 3 | 131954 | 0 '86 | 0'0061823 | $15 \quad 71$ | $\begin{array}{rrrr}15 & 2\end{array}$ | 5528 | 55 5 5 1111 |
| 4 | 132 7 29 <br> 132 2  | $0 \cdot 79$ | $0 \cdot 0061203$ | 1458.0 | 1451.3 | $5455 \cdot 4$ | $5441 \times 8$ |
| 5 | $\begin{array}{llll}133 & 4 & 51 & 5 \\ 134 & 2 & 00 & \end{array}$ | 0.69 | $0 \cdot 0060569$ | $1451 \cdot 3$ | 1448.9 | $5430 \cdot 7$ | $5422 \cdot 1$ |
| 6 | 1342292 | $0 \cdot 57$ | $0 \times 059997$ | $1447 \cdot 3$ | $1446 \cdot 3$ | $5416 \%$ | $5412 \cdot 4$ |
| 7 |  | $0 \cdot 45$ | $0 \cdot 0059249$ | 14460 | $1446 \cdot 5$ | $5111 \%$ | 5413 ¢ |
| 8 | $\begin{array}{rrrrr}135 & 57 & 27 & 7 \\ 136 & 55 & 2.6\end{array}$ | $0 \cdot 32$ $0 \cdot 19$ | 0.0058562 | $1447 \%$ | $1449 \cdot 4$ | $5117 \cdot 3$ | $5423 \cdot 7$ |
| 9 | $13655 \quad 2 \times 6$ | $0 \cdot 19$ | $0 \cdot 0057854$ | $1451 \cdot 8$ | 14547 | $5432 \cdot 5$ | $5143 \cdot 1$ |
| 10 | $\begin{array}{lllll}137 & 59 & 38 \\ 138 & 50\end{array}$ | N. $0 \cdot 06$ | $0 \cdot 0057127$ | $1458{ }^{\circ} 0$ | $\begin{array}{ll}15 & 19\end{array}$ | $5455 \%$ | $\begin{array}{ll}55 & 9\end{array} 7$ |
| 111 | $\begin{array}{llll}138 & 50 & 16.6 \\ 139 & 47 & 55 & 6\end{array}$ | S. $0 \cdot 06$ | $0 \cdot 0056378$ | 15061 | $1510 \%$ | $55 \quad 25$ | 5541 's |
| 12 | 13947556 | $0 \cdot 15$ | $0 \cdot 0055607$ | $\begin{array}{llll}15 & 15\end{array}$ | 1520 | 55.59 '1 | $\begin{array}{ll}56 & 16\end{array}$ |
| 13 14 | $\begin{array}{lllll}140 & 45 & 36 & 0 \\ 141 & 43 & 17 & 7\end{array}$ | $0 \cdot 21$ $0 \cdot 20$ | 0-0054815 | 15.2511 | $15 \quad 29{ }^{-9} 9$ | $56 \quad 317$ | 5652.6 |
| 14 15 | $\begin{array}{rrrrr}141 & 43 & 17 & 7 \\ 142 & 41 & 0 & 6\end{array}$ | $0 \cdot 25$ $0 \cdot 20$ | 0.0054000 | 15 15 15 347 | $1.539 \cdot 2$ | $5710 \%$ | 5726 |
| 15 | 1424100 | 0 0 2 | $0 \cdot 0053164$ | $1543 \%$ | $15 \quad 47.6$ | $5742 \cdot 6$ | $\begin{array}{llll}57 \\ 57 & 57 \%\end{array}$ |
| 16 | 14338844 | $0 \cdot 24$ | $0 \cdot 0052306$ | $1551 \cdot 4$ | 1554.8 | 58115 | $5823 \cdot 8$ |
| 17 | $\begin{array}{lllll}144 & 36 & 30 & 2 \\ 145 & 34 & 16 & 7\end{array}$ | $0 \cdot 19$ $0 \cdot 11$ | 0.005142 s $0 \cdot 0050530$ | $\begin{array}{llll}15 & 51 \\ 16 & 8\end{array}$ | $\begin{array}{llll}16 & 0 & 4\end{array}$ | $\begin{array}{llll}58 & 34 & 7\end{array}$ | 5844 |
| 18 | 145434167 | $0 \cdot 11$ | $0 \cdot 0050530$ | $16 \quad 27$ | $16 \quad 4 \%$ | 5s $52 \times 1$ | $58 \quad 597$ |
| 19 | $146324 \cdot 4$ | S. $0 \cdot 01$ | 0. 0049614 | $16 \quad 6.2$ | $16 \quad 7 \cdot 4$ | $59 \quad 5 \%$ | 59) 9\% ${ }^{\text {a }}$ |
| 20 21 | 147 29 53 <br> 148 9  <br> 14 2  <br> 2   | N. $0 \cdot 11$ | $0 \cdot 0048681$ | $\begin{array}{lll}16 & 8 \cdot 2\end{array}$ | $16 \mathrm{~s} \cdot \mathrm{~s}$ | 59) $13 \cdot 1$ | 5!) 15.2 |
| 21 | 1482743 | $0 \cdot 24$ | $0 \cdot 00+7734$ | $\begin{array}{ll}16 & 9 \cdot 1\end{array}$ | $16 \quad 9.0$ | 59) $16 \cdot 3$ | $5916 \%$ |
| 22 | $\begin{array}{lllll}149 & 25 & 34 & 4 \\ 150 & 03 & 06 & \cdot 8\end{array}$ | 0.37 0.19 | $0 \cdot 0046773$ | $16 \quad 8 \cdot 6$ | 16 7 | 59) $14 \cdot 5$ | $59.11 \%$ |
| 24 | $\begin{array}{llll}150 & 23 & 26 & 8 \\ 151 & 21 & 20 & 5\end{array}$ | $0 \cdot 49$ 0.61 | 0'0045800 | $16 \quad 67$ | $\begin{array}{ll}16 & 5 \cdot 1\end{array}$ | 5974 | 59) 1.5 |
| 24 | $1512120 \%$ | $0 \cdot 61$ | $0 \cdot 0044817$ | $163 \cdot 1$ | $\begin{array}{lll}16 & 0 \cdot 7\end{array}$ | 58513 | 58 454 |
| 25 | $1521915 \cdot 5$ | $0 \cdot 71$ | 0'0043822 | 1557 '8 | $1554 \cdot 4$ | $5834 \cdot 8$ | $5822 \cdot 4$ |
| 26 | $\begin{array}{llllll}153 & 17 & 12 & 0 \\ 154 & 15 & 4\end{array}$ | 0) 79 | $0 \cdot 0042 \mathrm{se} 0$ | $15 \quad 50 \%$ | $1546 \%$ | $58 \quad 8.6$ | $5753 \%$ |
| 27 | $\begin{array}{llll}154 & 15 & 9\end{array} 9$ | 0 '85 | 0'0041810 | $1542 \cdot 2$ | 15375 | $5737 \%$ | 5780 |
| 28 | $\begin{array}{llll}155 & 13 & 9 & 2 \\ 156 & 11 & 10\end{array}$ | $0 \cdot 87$ | $0 \cdot 0040794$ | 1532.6 | 15.27 .6 | $57 \quad 24$ |  |
| 29 | $\begin{array}{rrrrr}156 & 11 & 10 & \bullet \\ 157 & 9 & 13 & 0\end{array}$ | $0 \cdot 86$ | $0 \cdot 0039771$ | $\begin{array}{llll}15 & 22 & 5 \\ 15 & 10\end{array}$ | $1517 \cdot 5$ | $56 \quad 25 \cdot 3$ | $56 \quad 609$ |
| 30 31 | $\begin{array}{llll}157 & 9 & 13 & 0 \\ 158 & 7 & 17.6\end{array}$ | $0 \cdot 82$ $0 \cdot 75$ | $0 \cdot 0038743$ | $\begin{array}{ll}15 & 12.6\end{array}$ | $15 \quad 79$ | $5549 \%$ | $5531 \%$ |
| 31 | $1587817 \%$ | $0 \cdot 75$ | 0'0037709 | $\begin{array}{ll}15 & 3\end{array}$ | $1459 \%$ | $\begin{array}{llll}55 & 15 & 7\end{array}$ | $\begin{array}{cc}55 & 0 \%\end{array}$ |
| 32 | $159 \quad 5 \quad 2 \pm 1$ | N. $0 \cdot 66$ | 0.0036668 | $1455{ }^{\circ}$ | $1+59 \cdot 8$ | 54477 | 54 340 |

MEAN TIME.

| Day of the Week. |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Longitude. |  | Latitude. |  | Age. <br> Noon. | Meridian <br> Passage. |
|  |  | Noon. | Midnight. | Noon. | Mriunight. |  |  |
| Thur. | 1 | $346^{\circ} \quad 5 \quad 26^{\prime \prime} \cdot 6$ | $352^{\circ} 377^{\prime} 33^{\prime \prime} 7$ | v. $5{ }^{0} 4^{\prime} 58^{\prime \prime} \cdot 1$ | N. $0^{\circ}$ | $10^{\text {d }}$-9 | $14^{\mathrm{h}} 47^{\mathrm{m}} \cdot 4$ |
| Frid. | $\underline{2}$ | 35!) 4 ¢ $2 \cdot 9$ | $5{ }^{5} 254 \%$ | 45298 |  | 17.9 | $1532 \cdot 1$ |
| Sat. | 3 | 114057.5 | $175 \% 6$ | $42554 \cdot 8$ | 4830 | 18.9 | $16 \quad 16$ '5 |
| Sun. | 4 | 23590 | $30 \quad 2 \quad 10 \cdot 5$ | $34731 \cdot 6$ | $\begin{array}{lllll}3 & 24 & 37 & 7\end{array}$ | $19 \times 9$ | $\begin{array}{lll}17 & 1 & 4\end{array}$ |
| Mon. | 5 | $\begin{array}{llll}36 & 2 & 13 & 6\end{array}$ | $415947 \cdot 1$ | $2 \mathrm{5} 939 \cdot 1$ | $23252 \cdot 2$ | $20^{\circ} 9$ | $1747 \times 2$ |
| Tues, | 6 | $\begin{array}{llllllllllll}47 & 55 & 30\end{array}$ | $5350 \quad 39$ | 2434.2 | 135014 | $21^{\circ} 9$ | $1834{ }^{\circ}$ |
| Wed. | 7 | $5944 \quad 7 \cdot 9$ | $\begin{array}{llll}65 & 38 & 22 \cdot 3\end{array}$ | $430 \cdot 4$ | N. 0 | $22 \cdot 9$ | $19 \quad 22.6$ |
| Thur. | 8 | 713326.6 | 77 29 $58 \cdot 1$ | N.0.0 1 3 39'9) | S. $0 \quad 30 \quad 4 \cdot 8$ | $23^{\circ} 9$ | $20 \times 11.9$ |
| Prid. | 9 | $83 \quad 2832.6$ | 89 29 $43 \cdot 2$ | S. 11138 | $13242 \cdot 9$ | $24 \cdot 9$ | $21 \quad 17$ |
| So | 10 | 9533597 | $1014147^{5}$ | $\bigcirc \quad 2576$ | $232 \quad 23$ | $25^{\circ} 9$ | 21 51 4 <br> 0   |
| Sun. | 11 | 1075329 | 1149214 | 2 F | $\begin{array}{llll}3 & 25 & 14 \cdot 1\end{array}$ | $26 \cdot 9$ | $2240 \cdot 6$ |
| Mon. | 12 | $120 \begin{array}{ll}129 & 35\end{array}$ | $1265418 \%$ | $348 \quad 37 \cdot 5$ | 4 9 $22 \cdot 5$ | 279 | $23 \quad 29{ }^{\circ}$ |
| Tues. | 13 | $\begin{array}{llllll}133 & 23 & 31 & 3\end{array}$ | 13957 8 - | $427 \quad 7 \cdot 9$ | $44133 \cdot 1$ | $28 \cdot 9$ | ¢ |
| Wed. | 14 | 146 | 1531651 \% | $45219 \%$ | $45912 \cdot 3$ | $0 \cdot 4$ | $017 \cdot 1$ |
| Thur. | 15 | $160 \quad 225 \%$ | 1665121.1 | $\begin{array}{lllll}5 & 1 & 57 \%\end{array}$ | 5 0 27 | $1 \cdot 4$ | $1{ }^{4} \mathrm{~s}$ |
| Frid. | 16 | $1734314 \cdot 0$ | $1803740 \cdot 7$ | $45436 \cdot 5$ | $44425 \cdot 7$ | $2 \cdot 4$ | $152 \cdot 9$ |
| Sat. | 17 | 1873417.8 | 19432423 | 430002 | $4{ }^{4} 11129 \cdot 1$ | $3 \cdot 4$ | 1-42920 |
| Sun. | 18 | 2013233 6 | 20833336 | $349 \quad 71$ | 3 23 12  | $4 \cdot 4$ | $\begin{array}{llll}3 & 33 & 5\end{array}$ |
| Mon. | 19 | $215 \quad 35 \quad 26 * 7$ | $22238 \quad 0 \cdot 3$ | 25490 | $\begin{array}{llll}2 & 22 & 22 & 5\end{array}$ | $5 \cdot 4$ | + 27 |
| Tues. | 20 | $22941 \quad 4 \cdot 1$ | 2364429.9 | $14821 \cdot 8$ | S. $111239{ }^{\text {l }} 1$ | 64 | (1) |
| Wed. | 21 | $243 \quad 48 \quad 10 \cdot 5$ | 2505159 | S. $0.35 \cdot 48 \cdot 1$ | N. $0 \quad 1 \begin{array}{lll} & 36 & 3\end{array}$ | $7 \cdot 4$ | 622 |
| Thur. | 22 | 2575549 | $2645931 \cdot 3$ | N.0 38585 | $\begin{array}{lll}1 & 15 & 43 \\ 2\end{array}$ | $8 \cdot 4$ | $721 \cdot 8$ |
| Frid. | 23 | 272 | $279 \quad 546 \cdot 4$ | $15114{ }^{\circ}$ | 22458 | 94 | 820.9 |
| Sat. | 24 | 2s6 $749^{\circ} \mathrm{O}$ | 2938427 | $25624 \cdot 0$ | $\begin{array}{llll}3 & 25 & 1 & 3\end{array}$ | 10*4 | $918 \cdot 1$ |
| Sun. | 2.5 | $\begin{array}{llll}300 & 8 & 4\end{array}$ | $307 \quad 5 \quad 29.6$ | 3505056 | $41214 \cdot 5$ | $11 \cdot 4$ | $10.12 \cdot 4$ |
| Mon. | 26 | $3140030 \cdot 9$ | $3205241 \cdot 1$ | 430 11'4 | 4 4 $4 \quad 3 \quad 3.9$ | $12 \cdot 4$ | $\begin{array}{llll}11 & 3 & 8 \\ 11 & 50 & 5\end{array}$ |
| Taus. | 27 | $3274133 \cdot 8$ | $33 \pm 2644.2$ | $45345 \cdot 1$ | $45912 \cdot 6$ | $13 \cdot 4$ | $1152 \cdot 5$ |
| Wed. | 28 | $341 \quad 7 \quad 50 \cdot 7$ | $3474435 \cdot 9$ | 5 5 0 28.9 | $45740 \cdot 7$ | 14.4 | $1239 \cdot 2$ |
| Thur. | 29 | $35 \pm 1646 \cdot 7$ | 0. $4416 \cdot 3$ | $45058 \cdot 2$ | $44034 \cdot 7$ | $15^{\prime} 4$ | $\begin{array}{llll}13 & 24 & 7 \\ 14 & 7\end{array}$ |
| Trid. | 30 | $\begin{array}{llll}7 & 7 & 3 \cdot 1\end{array}$ | $13 \quad 9512: 3$ | 426.46 | $\begin{array}{lrrr}4 & 9 & 49 & 7\end{array}$ | $16 \cdot 4$ | $\begin{array}{ll}14 & 9 \\ 14 & 7\end{array}$ |
| Sat, | 31 | 19) 3858.1 | $25 \quad 48 \quad 25 \cdot 3$ | $3 \begin{array}{lll}50 & 3\end{array}$ | 327473 | $17 \cdot 4$ | 1454 's |
| Sun. | 32 | $3151 \quad 70$ | $37 \quad 5625 \cdot 4$ | N. 3 3 $3199^{\prime \prime} 4$ | N. 23650 | $18 \cdot 4$ | $1540 \cdot 6$ |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.


## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.
$\begin{array}{lllll}8 & 58 & 14 & \cdot 55 \\ 9 & 0 & 20 & 90\end{array}$

9 2 $27 \cdot 20$ $\begin{array}{llll}9 & 4 & 33 & \cdot 44\end{array}$ $\begin{array}{llll}9 & 6 & 39: 62\end{array}$ $\begin{array}{lll}9 & 8 & 45 \cdot 76\end{array}$ 9 10-51:83 $\begin{array}{llllll}9 & 12 & 57 & 86\end{array}$ $\begin{array}{llll}9 & 15 & 3 & -84\end{array}$ $\begin{array}{llll}9 & 17 & 9 & 76\end{array}$ $\begin{array}{llllll}9 & 19 & 15 & 64\end{array}$ $92121 \cdot 47$ | 9 | 23 | 27 |
| :--- | :--- | :--- | 26 $925 \quad 33$.00 $92738 \cdot 71$ 9294477 93149 '99 $933 \quad 55 \cdot 58$ $\begin{array}{lll}9 & 36 & 1 \cdot 14\end{array}$ $938 \quad 6 \cdot 65$ $9 \quad 40 \quad 12$ * 14 $\begin{array}{llll}9 & 42 & 17 & 60\end{array}$ 94423 '03 $94628 \cdot 43$ N. WRDNESDAY 14.



| Ser | Right Ascension. | Declination. | $\begin{aligned} & \text { Dif. Dee. } \\ & \text { for } 100^{\mathrm{m} .} \end{aligned}$ | Howr. | Right Ascension. | Declination. | $\begin{aligned} & \text { Difr. Dec. } \\ & \text { for 100, } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | YY 13. |  |  |  | $A Y 15$. |  |
|  |  | 3239 '6 | 104 :38 |  | 10 |  | 127-92 |
| 0 |  |  | 104 38 | 1 |  | 3 8 48  <br>  56 4 1 | 127 |
| 1 | 9 C | $12 \quad 2213 \quad 3$ | $105 \cdot 07$ | 1 | $104047{ }^{\circ} 01$ | $2{ }^{2} 56$ | 127 \%5 |
| 9 | $9 \times 2.27: 20$ | 1211429 | $105 \cdot 75$ | 2 | $104252 \cdot 56$ | 24318.9 | 127 •77 |
| 3 | 9 9 4 $33 \cdot 44$ | $\begin{array}{llll}12 & 1 & 8.4\end{array}$ | $106 \cdot 45$ | 3 | $104458 \cdot 16$ | $23032 \cdot 3$ | 127.98 |
| 4 | $\begin{array}{lllll}9 & 6 & 39 & 62\end{array}$ | $1115029 \cdot 7$ | $107 \cdot 10$ | 4 | 1047 - $3 \cdot 80$ | $21744 \cdot 4$ | $128 \cdot 17$ |
| 5 | $\begin{array}{lllllllll}9 & 8 & 45 & 76\end{array}$ | $\begin{array}{llll}11 & 39 & 47 \%\end{array}$ | $107 \cdot 77$ | 5 | $\begin{array}{lllll}10 & 49 & 9 & 48\end{array}$ | $2.455 \cdot 4$ | $128 \cdot 37$ |
| 6 | $9 \begin{array}{llllll}9 & 10 & 51 & 83\end{array}$ | 112900 | $108 \cdot 42$ | 6 | $1051 \quad 15$ :22 |  | 128 '62 |
| 7 | $\begin{array}{lllllllll}9 & 12 & 57 & 86\end{array}$ | $\begin{array}{lll}11 & 18 & 10\end{array}$ | $109 \cdot 07$ | 7 | $105321 \cdot 00$ | $13914 \cdot 1$ | 128.70 |
| 8 | $9 \begin{array}{llll}9 & 15 & 3 & 84\end{array}$ | $11 \begin{array}{llll}11 & 7 & 15 & 6\end{array}$ | 109 70 | 8 | $1055 \quad 26 \cdot 84$ | 12621.9 | 128 '83 |
| 9 | $\begin{array}{llll}9 & 17 & 9 & 76\end{array}$ | $105617 \cdot 4$ | 110 -33 | 9 | $1057 \quad 32 \cdot 74$ | 11328.9 | 128 '98 |
| 10 | $\begin{array}{llllllllll}9 & 19 & 15 & 64\end{array}$ | $\begin{array}{llll}10 & 45 & 15 & 4\end{array}$ | $110 \cdot 95$ | 10 | 10593870 | 0 35 '0 | $129 \cdot 12$ |
| 11 | 92121.47 | 1034 | 111.55 | 11 | $\begin{array}{lll}11 & 1 & 4472\end{array}$ | $04740 \cdot 3$ | $129 \cdot 23$ |
| 19 | $\begin{array}{lllll}9 & 23 & 27 & 76\end{array}$ | $\begin{array}{lll}10 & 23 & 0\end{array}$ | $112 \cdot 15$ | 12 | $\begin{array}{llllll}11 & 3 & 50 & 81\end{array}$ | $03444 \%$ | $129 \cdot 33$ |
| 13 | 92583.00 | 1011475 | $112 \cdot 75$ | 13 | $\begin{array}{llll}11 & 5 & 56.97\end{array}$ | 02148.9 | $129 \% 4$ |
| 14 | $92738 \cdot 71$ | 10 0 $31 \%$ | 113 -33 | 14 | $\begin{array}{llll}11 & 8 & 3 & 20\end{array}$ | N. 0 8 852.3 | 129 \% 0 |
| 15 | $\begin{array}{llllllllll}9 & 29 & 44 * 37\end{array}$ | $94911 \%$ | $113 \cdot 90$ | 15 | $\begin{array}{llll}11 & 10 & 9 & 50\end{array}$ | S. 0 1-4 $4 \cdot 7$ | 129 -53 |
| 16 | $931149 * 99$ | 937476 | $114 \cdot 47$ | 16 | $\begin{array}{llll}11 & 12 & 15 & 88\end{array}$ | $\begin{array}{llll}0 & 17 & 2.2\end{array}$ | 129.63 |
| 17 | $\begin{array}{lllll}9 & 33 & 55 & 58\end{array}$ | 9 26 | 115 | 17 | $\begin{array}{llll}11 & 14 & 22 & 34\end{array}$ | 03000 | \% 129 |
| 18 | $\begin{array}{lll}9 & 36 & 1 \cdot 14\end{array}$ | 99 14 50 7 | $115 \cdot 57$ | 18 | $\begin{array}{lllllllllllllllll}11 & 16 & 28 & 89\end{array}$ | 04258.2 | 12972 |
| 19 | $\begin{array}{llll}9 & 38 & 6 \cdot 65\end{array}$ | $\begin{array}{llllll}9 & 3 & 17 & 3\end{array}$ | $116 \cdot 12$ | 19 | 111835 | 05556.5 | 12975 |
| 80 | $9{ }^{9} 4012 * 14$ | $885140 \div 6$ | 116 62 | 20 | $1112042 \cdot 24$ | $855 \cdot 0$ | 12975 |
| 21 | $94217 \cdot 60$ | $8 \quad 40 \quad 0 \cdot 9$ | $117 \cdot 15$ | 21 | 112249.05 | 12153.5 | 129 |
| 22 | 94423 '03 | $82818{ }^{\circ} 0$ | $117 \cdot 67$ | 22 | $112455 \cdot 96$ | $13452 \cdot 1$ | $129 \cdot 73$ |
| 93 | $\begin{array}{r} 94628 \cdot 43 \\ \text { WRDNI } \end{array}$ | $\begin{aligned} & \left\|\begin{array}{lll} \mid N . & 16 & 32 \end{array}\right\| \\ & \text { ESDAY } \\ & \hline \end{aligned}$ | 118 '15 | 23 | $\begin{array}{lll} 11 & 27 & 2.97 \\ & \text { FRII } \end{array}$ | $\begin{aligned} & \text { S. } 147 \quad 50 \cdot 5 \\ & D A Y 16 . \end{aligned}$ | 12973 |
| 0 | 94833.81 | N. 8 4 43 '1 | 118 '65 | 0 | $112910 \quad 07$ | S. 2 0-48 9 | $129 \cdot 68$ |
| 1 | $9{ }^{9} 50$ | $75251 \times 2$ | $119 \cdot 12$ | 1 | 1113117 :28 | $21347^{\circ} 0$ | 129.65 |
| 2 | $95244 \cdot 51$ | $74056 \%$ | 119 | 2 | $113324 \cdot 60$ | $22644 \cdot 9$ | 58 |
| 3 | $95449 \cdot 83$ | 72858.9 | 120.05 | 3 | 113532.03 | 239424 | 129 -50 |
| 4 | $956555 \cdot 14$ | $71658 \%$ | 120 \%0 | 4 | $113739 \cdot 57$ | 25239.4 | 129.43 |
| 5 | $9 \begin{array}{lll}9 & 59 & 0 \cdot 43\end{array}$ | $74555 \cdot 6$ | $120 \cdot 93$ | 5 | $113947 \cdot 23$ | $3 \begin{array}{llll}5 & 56 & 0\end{array}$ | 129 '33 |
| 6 | $\begin{array}{llll}10 & 1 & 5 & 71\end{array}$ | $65250{ }^{6} 0$ | $121 \cdot 37$ | 6 | 11.4155 .00 | $\begin{array}{llll}3 & 18 & 32\end{array}{ }^{\circ}$ | 129 '22 |
| , | $\begin{array}{llll}10 & 3 & 10 & 9\end{array}$ | $64041 \times 8$ | 121 '80 | 7 | $11 \begin{array}{lll}11 & 44 & 2\end{array}$ | $3 \begin{array}{llll}3 & 31 & 27.3\end{array}$ | $129 \cdot 12$ |
| 8 | $\begin{array}{lllll}10 & 5 & 16 & 25\end{array}$ | 62831.0 | 122 '18 | 8 | $114610 \% 93$ | 34422.0 | $128 \cdot 97$ |
| 9 | $\begin{array}{llll}10 & 7 & 21 & 51\end{array}$ | $6 \quad 16 \quad 17.9$ | 122.60 | 9 | 1114819.08 | 35715 '8 | 128 '83 |
| 10 | $\begin{array}{llll}10 & 9 & 26 & 77\end{array}$ | $\begin{array}{llll}6 & 4 & 2 & 3\end{array}$ | $122 \cdot 98$ | 10 | $11 \begin{array}{llll}11 & 50 & 276\end{array}$ | 410 8-8 | $128 \cdot 68$ |
| 11 | $10 \quad 1132.03$ | 5 51144 4 | $123 \cdot 37$ | 11 |  | 423009 | 50 |
| 12 |  | 539.24 .2 | 123 '73 | 12 |  | 43551.9 | 128 '33 |
| 13 | $1015 \quad 42$ '56 | $527 \quad 1$ '8 | 124 | 13 | $\begin{array}{llllll}11 & 56 & 53 & 04\end{array}$ | $44841{ }^{\circ} 9$ | $128 \cdot 13$ |
| 14 | 10 17 47 | $5 \begin{array}{lllll}5 & 14 & 37 & 3\end{array}$ | $124 \cdot 43$ | 14 | $\begin{array}{llll}11 & 59 & 1 & 88\end{array}$ | $\begin{array}{llll}5 & 1 & 30 & 7\end{array}$ | $127 \cdot 93$ |
| 15 |  | $\begin{array}{llll}5 & 2 & 10 & 7\end{array}$ | $124 \cdot 77$ | 15 | $\begin{array}{llll}12 & 1 & 10 & 86\end{array}$ | $\begin{array}{lllll}5 & 14 & 18 & 3\end{array}$ | $127 \cdot 70$ |
| 16 | $102158 \cdot 40$ | $44942 \cdot 1$ | 125 | 16 | $\begin{array}{llll}12 & 3 & 20 & 00\end{array}$ | $\begin{array}{llll}5 & 27 & 4.5\end{array}$ | 127 48 |
| 17 | $\begin{array}{llll}10 & 24 & 3 & 71\end{array}$ | $43711{ }^{4} 5$ | $125 \cdot 40$ | 17 | $\begin{array}{llll}12 & 5 & 29 & \cdot 28\end{array}$ | 5 5 3949.4 | $127 \cdot 25$ |
| 18 | $\begin{array}{llll}10 & 26 & 9 & 04\end{array}$ | $42439 \cdot 1$ | $125 \cdot 72$ | 18 | $\begin{array}{llll}12 & 7 & 38 & 73\end{array}$ | 5 52.32 '9 | 126.97 |
| 19 | $102814 \cdot 38$ | 4.124 .8 | 126 .02 | 19 | $\begin{array}{llllll}12 & 9 & 48 & 32\end{array}$ | $\begin{array}{llll}6 & 5 & 14 & 7\end{array}$ | 126 \% 7 |
| 20 | $\begin{array}{llll}10 & 30 & 19 & 75\end{array}$ | $35928 \cdot 7$ | 126 '28 | 20 | $12.1158 * * 8$ | 61755.0 | $126 \cdot 43$ |
| 21 | $1038 \quad 25 \cdot 14$ | 34651.0 | $126 \cdot 57$ | 21 | $\begin{array}{llll}12 & 14 & 8.01\end{array}$ | $6 \begin{array}{llll}6 & 30 & 33 & 6\end{array}$ | $126 \cdot 13$ |
| 22 | $103430 \cdot 56$ | $3{ }^{3} 34111.6$ | 126 '83 | 22 | $\begin{array}{llllllll}12 & 16 & 18 & 09\end{array}$ | $6 \begin{array}{llll}6 & 43 & 10\end{array}$ | $125 \cdot 33$ |
| 93 | 103636 \% 01 | $32130 \%$ | 127 \%os | 23 | $\begin{array}{lllllllllll}12 & 18 & 28 & 35\end{array}$ |  | 125 -52 |
| 24 | $\begin{array}{lllllll}10 & 38 & 41 & 49\end{array}$ | N. 38848 '1 |  | 24 | $12 \quad 20 \quad 38 \cdot 78$ | $\begin{array}{lllllllll}\text { S. } 7 & 8 & 18 & 5\end{array}$ |  |


$\begin{array}{lllllll}\mathrm{N} .12 & 32 & 39 & 6 & 104 & 38\end{array}$ $\begin{array}{lllll}12 & 22 & 13 & 3 & 105 \cdot 07\end{array}$ | 12 | 11 | 42 | 9 | 105 |
| :--- | :--- | :--- | :--- | :--- |
| 75 |  |  |  |  | $\begin{array}{lllll}12 & 1 & 8.4 & 106.45\end{array}$ $\begin{array}{llll}11 & 50 & 29 & 7 \\ 107 & 10\end{array}$ | 11 | 39 | $47 \cdot 1$ | $107 \cdot 77$ |
| :--- | :--- | :--- | :--- | $\begin{array}{lllll}11 & 29 & 0.5 & 108.42\end{array}$ $\begin{array}{lllll}11 & 18 & 10 & 0 & 109\end{array} \cdot 07$ | 11 | 7 | 15 | 6 | 109 |
| :--- | :--- | :--- | :--- | :--- | $\begin{array}{lllllll}10 & 56 & 17 & 4 & 110: 33\end{array}$ $\begin{array}{lllll}10 & 45 & 15 & 4 & 110\end{array}$ | 10 | 34 | 9 | 7 |
| :--- | :--- | :--- | :--- |
| 111 | $\cdot 55$ |  |  | | 10 | 23 | 0 | 4 | $112 \cdot 15$ |
| :--- | :--- | :--- | :--- | :--- | $\begin{array}{llllll}10 & 11 & 47 & 5 & 112 \cdot 75\end{array}$ $\begin{array}{lllll}10 & 0 & 31 & 0 & 113 \cdot 33\end{array}$ $94911 * 0113.90$ $\begin{array}{lllll}9 & 37 & 47 & 6 & 114 \cdot 47\end{array}$ $\begin{array}{llll}9 & 26 & 20 & 8 \\ 115 & 02\end{array}$ $\begin{array}{llll}9 & 14 & 50 \cdot 7 & 115 \cdot 57\end{array}$ $\begin{array}{lllll}9 & 3 & 17 & 3 & 116 \cdot 12\end{array}$ $851 \quad 40 \div 6 \quad 116 \cdot 62$ $840 \quad 0.9$ 117.15 $\begin{array}{lllll}8 & 28 & 18 & 0 & 117 \cdot 67\end{array}$


| ser | Right Ascension. | Declination. | $\begin{aligned} & \text { Difr. Dee. } \\ & \text { for } 100^{\mathrm{m} .} \end{aligned}$ | Howr. | Right Ascension. | Declination. | $\begin{aligned} & \text { Difr. Dec. } \\ & \text { for 100, } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | YY 13. |  |  |  | $A Y 15$. |  |
|  |  | 3239 '6 | 104 :38 |  | 10 |  | 127-92 |
| 0 |  |  | 104 38 | 1 |  | 3 8 48 <br>  56 4 | 127 |
| 1 | 9 C | $12 \quad 2213 \quad 3$ | $105 \cdot 07$ | 1 | $104047{ }^{\circ} 01$ | $2{ }^{2} 56$ | 127 \%5 |
| 9 | $9 \times 2.27: 20$ | 1211429 | $105 \cdot 75$ | 2 | $104252 \cdot 56$ | 24318.9 | 127 •77 |
| 3 | 9 9 4 $33 \cdot 44$ | $\begin{array}{llll}12 & 1 & 8.4\end{array}$ | $106 \cdot 45$ | 3 | $1044 \quad 58 \cdot 16$ | $23032 \cdot 3$ | $127 \cdot 98$ |
| 4 | 9 9 $6.39 \% 2$ | $1115029 \cdot 7$ | $107 \cdot 10$ | 4 | 1047 - $3 \cdot 80$ | $21744 \cdot 4$ | $128 \cdot 17$ |
| 5 | $\begin{array}{llllllll}9 & 8 & 45 & 76\end{array}$ | $\begin{array}{llll}11 & 39 & 47 \%\end{array}$ | $107 \cdot 77$ | 5 | $\begin{array}{lllll}10 & 49 & 9 & 48\end{array}$ | $2.455 \cdot 4$ | $128 \cdot 37$ |
| 6 | $9 \begin{array}{llllll}9 & 10 & 51 & 83\end{array}$ | 112900 | $108 \cdot 42$ | 6 | $1051 \quad 15$ :22 | 159512 | 128 '62 |
| 7 | $\begin{array}{lllllllll}9 & 12 & 57 & 86\end{array}$ | $\begin{array}{lll}11 & 18 & 10\end{array}$ | $109 \cdot 07$ | 7 | $105321 \cdot 00$ | $13914 \cdot 1$ | 128.70 |
| 8 | $9 \begin{array}{llll}9 & 15 & 3 & 84\end{array}$ | $11 \begin{array}{llll}11 & 7 & 15 & 6\end{array}$ | 109 70 | 8 | $1055 \quad 26 \cdot 84$ | 12621.9 | 128 '83 |
| 9 | $\begin{array}{llll}9 & 17 & 9 & 76\end{array}$ | $105617 \cdot 4$ | 110 -33 | 9 | $1057 \quad 32 \cdot 74$ | 11328.9 | 128 '98 |
| 10 | $9 \begin{array}{llllllll}9 & 19 & 15 & 64\end{array}$ | $\begin{array}{llll}10 & 45 & 15 & 4\end{array}$ | $110 \cdot 95$ | 10 | 10593870 | 0 $35 \cdot 0$ | $129 \cdot 12$ |
| 11 | 92121.47 | 1034 | 111.55 | 11 | $\begin{array}{lll}11 & 1 & 4472\end{array}$ | $04740 \cdot 3$ | $129 \cdot 23$ |
| 19 | 9 23 27  | $\begin{array}{lll}10 & 23 & 0\end{array}$ | $112 \cdot 15$ | 12 | $\begin{array}{llllll}11 & 3 & 50 & 81\end{array}$ | $03444 \%$ | $129 \cdot 33$ |
| 13 | 92583.00 | 1011475 | $112 \cdot 75$ | 13 | $\begin{array}{llll}11 & 5 & 56.97\end{array}$ | 02148.9 | $129 \% 4$ |
| 14 | $92738 \cdot 71$ | 10 0 $31 \%$ | 113 -33 | 14 | $\begin{array}{llll}11 & 8 & 3 & 20\end{array}$ | N. 0 8 852.3 | 129 \% |
| 15 |  | $94911 \%$ | $113 \cdot 90$ | 15 | 111098 | S. 0 1 4 4 47 | 129 -53 |
| 16 | $931149 * 99$ | 937476 | $114 \cdot 47$ | 16 | $\begin{array}{llll}11 & 12 & 15 & 88\end{array}$ | $\begin{array}{llll}0 & 17 & 2.2\end{array}$ | 129.63 |
| 17 | $\begin{array}{lllll}9 & 33 & 55 & 58\end{array}$ | 9 26 | 115 | 17 | $\begin{array}{llll}11 & 14 & 22 & 34\end{array}$ | 03000 | \% 129 |
| 18 | $\begin{array}{lll}9 & 36 & 1 \cdot 14\end{array}$ | 9 9 $1450 \cdot 7$ | $115 \cdot 57$ | 18 | 11166889 | $04258: 2$ | 12972 |
| 19 | $\begin{array}{llll}9 & 38 & 6 \cdot 65\end{array}$ | $\begin{array}{lllll}9 & 3 & 17 & 3\end{array}$ | $116 \cdot 12$ | 19 | 111835 | 05556.5 | 12975 |
| 80 | $9{ }^{9} 4012 * 14$ | $885140 \div 6$ | 116 62 | 20 | $1112042 \cdot 24$ | 855.0 | 12975 |
| 21 | $94217 \cdot 60$ | $8 \quad 40 \quad 0 \cdot 9$ | $117 \cdot 15$ | 21 | 112249.05 | 12153.5 | 129 |
| 22 | 94423 '03 | $82818{ }^{\circ} 0$ | $117 \cdot 67$ | 22 | $112455 \cdot 96$ | $13452 \cdot 1$ | $129 \cdot 73$ |
| 93 | $\begin{array}{r} 94628 \cdot 43 \\ \text { WRDNZ } \end{array}$ | $\left.\begin{aligned} & \left\lvert\, \begin{array}{lll} \mid N . & 8 & 16 \\ \text { ESD } \end{array}\right. \\ & \text { © } 0 \end{aligned} \right\rvert\,$ | $118 \cdot 15$ | 23 | $\begin{array}{lll} 11 & 27 & 2 \cdot 97 \\ & \text { FRII } \end{array}$ | $\begin{aligned} & \text { S. } 147 \quad 50 \cdot 5 \\ & \text { DAY } 16 . \end{aligned}$ | 12973 |
| 0 | 94833.81 | N. 8 4 43 '1 | 118 '65 | 0 | $112910 \quad 07$ | S. 2 0-48 9 | $129 \cdot 68$ |
| 1 | $9{ }^{9} 50$ | $75251 \cdot 2$ | $119 \cdot 12$ | 1 | 1113117 :28 | $21347{ }^{\circ}$ | 129.65 |
| 2 | $95244 \cdot 51$ | $74056 \%$ | 119 | 2 | $1113324 \cdot 60$ | $22644 \cdot 9$ | 58 |
| 3 | $95449 \cdot 83$ | 72858.9 | 120.05 | 3 | 113532.03 | 239424 | 129 -50 |
| 4 | 95655.14 | $71658 \%$ | 120 \% 0 | 4 | $113739 \cdot 57$ | 25239.4 | 129.43 |
| 5 | $9 \begin{array}{lll}9 & 59 & 0 \cdot 43\end{array}$ | $7455 \cdot 6$ | $120 \cdot 93$ | 5 | $113947 \cdot 23$ | $3 \begin{array}{llll}5 & 36 & 0\end{array}$ | 129 '33 |
| 6 | $\begin{array}{llll}10 & 1 & 5 & 71\end{array}$ | $65250{ }^{6}$ | $121 \cdot 37$ | 6 | 11.4155 .00 | $\begin{array}{lllll}3 & 18 & 32\end{array}$ | 129 '22 |
| , | $\begin{array}{llll}10 & 3 & 10 & 9\end{array}$ | $64041 \times 8$ | 121 'so | 7 | $1144 \quad 2 \cdot 90$ | $3 \begin{array}{llll}3 & 31 & 27.3\end{array}$ | $129 \cdot 12$ |
| 8 | $\begin{array}{lllll}10 & 5 & 16 & 25\end{array}$ | 62831.0 | 122 '18 | 8 | $114610 \% 93$ | 34422.0 | $128 \cdot 97$ |
| 9 | $\begin{array}{llll}10 & 7 & 21 & 51\end{array}$ | $6 \quad 16 \quad 17 \cdot 9$ | 122.60 | 9 | $11 \begin{array}{llllll}11 & 19 & 08\end{array}$ | 35715 -8 | 128 '83 |
| 10 | $\begin{array}{llll}10 & 9 & 26 & 77\end{array}$ | $\begin{array}{llll}6 & 4 & 2 & 3\end{array}$ | $122 \cdot 98$ | 10 | $11 \begin{array}{llll}11 & 50 & 276\end{array}$ | $4{ }^{4} 10$ 8 8 | $128 \cdot 68$ |
| 11 | $10 \quad 1132.03$ | 5 51 5144 | $123 \cdot 37$ | 11 |  | 423009 | 50 |
| 12 |  | 539.24 .2 | 123 '73 | 12 |  | 43551.9 | 128 '33 |
| 13 | $1015 \quad 42$ '56 | $527 \quad 1$ '8 | 124 | 13 |  | 44841.9 | $128 \cdot 13$ |
| 14 | 10 17 47 | 51437.3 | $124 \cdot 43$ | 14 | $\begin{array}{llll}11 & 59 & 1 & 88\end{array}$ | 5 1 30  | $127 \cdot 93$ |
| 15 |  | $\begin{array}{llll}5 & 2 & 10 & 7\end{array}$ | $124 \cdot 77$ | 15 | $\begin{array}{llll}12 & 1 & 10 & 86\end{array}$ | $\begin{array}{lllll}5 & 14 & 18 & 3\end{array}$ | $127 \cdot 70$ |
| 16 | $102158 \cdot 40$ | $44942 \cdot 1$ | 125 | 16 | $\begin{array}{llll}12 & 3 & 20 & 00\end{array}$ | $\begin{array}{llll}5 & 27 & 4.5\end{array}$ | 127 48 |
| 17 | $\begin{array}{llll}10 & 24 & 3 & 71\end{array}$ | $43711{ }^{4} 5$ | $125 \cdot 40$ | 17 | $\begin{array}{llll}12 & 5 & 29 & \cdot 28 \\ 12 & 7 & 38\end{array}$ | 5 5 3949.4 | $127 \cdot 25$ |
| 18 | $\begin{array}{llll}10 & 26 & 9 & 04\end{array}$ | $42439 \cdot 1$ | $125 \cdot 72$ | 18 | $\begin{array}{llll}12 & 7 & 38 & 73\end{array}$ | 5 52.32 '9 | 126.97 |
| 19 | $102814 \cdot 38$ | 4.124 .8 | 126 .02 | 19 | $\begin{array}{llllll}12 & 9 & 48 & 32\end{array}$ | $\begin{array}{llll}6 & 5 & 14 & 7\end{array}$ | 126 |
| 20 | $\begin{array}{llll}10 & 30 & 19 & 75\end{array}$ | $35928 \cdot 7$ | 126 '28 | 20 | $12.1158{ }^{1} \times 108$ | 61755.0 | $126 \cdot 43$ |
| 21 | $1038 \quad 25 \cdot 14$ | 34651.0 | $126 \cdot 57$ | 21 | $\begin{array}{llll}12 & 14 & 8 & 01\end{array}$ | $6 \begin{array}{llll}6 & 33 & 6\end{array}$ | $126 \cdot 13$ |
| 22 | $103430 \cdot 56$ | $3{ }^{3} 34111.6$ | 126 '83 | 22 | $\begin{array}{llllllll}12 & 16 & 18 & 09\end{array}$ | $6 \begin{array}{llll}6 & 43 & 10\end{array}$ | $125 \cdot 33$ |
| 93 | 103636 \% 01 | $32130 \%$ | 127 \%os | 23 | $\begin{array}{llllllllll}12 & 18 & 28 & 35\end{array}$ | $\begin{array}{lllllllll}6 & 55 & 45 & 4\end{array}$ | 125 -52 |
| 24 | $\begin{array}{lllllll}10 & 38 & 41 & 49\end{array}$ | N. 38848 '1 |  | 24 | $12 \quad 20 \quad 38 \cdot 78$ | $\begin{array}{lllllllll}\text { S. } 7 & 8 & 18 & 5\end{array}$ |  |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Hour. | Righ | ecli |  | Hoar. | Right Ascension | Declinatio |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | DAY 25. |  |  |  | AY 27. |  |
| 0 | $20 \quad 5$ |  | $\stackrel{\prime \prime}{92}$ |  |  |  |  |
| 1 |  | $161348 \%$ | $93 \cdot 18$ |  | $215451-34$ | 8 | 12088 121912 |
| 2 |  | 16.429. | $94 \times 03$ | 2 | 215658 '47 | $16 \cdot 47 \cdot 8$ |  |
| 3 | $20 \quad 12 \quad 52 \times 92$ | $15.55 \quad 5 \%$ | -90 | 3 | $\begin{array}{llllll}21 & 59 & 5 & 38\end{array}$ | $7439 \cdot 5$ |  |
| 4 | $20 \times 1512.09$ | $\begin{array}{lllll}15 & 45 & 36 & \%\end{array}$ | $95 \cdot 78$ | 4 | $22 \quad 11208$ | $52 \quad 297$ | 121.63 121.88 |
| 6 |  | $\begin{array}{lllll}15 & 36 & 1 & 5\end{array}$ | $96 \% 2$ | 5 | $\begin{array}{llllll}22 & 3 & 18 & 57\end{array}$ | $640-18 \cdot 4$ |  |
| 6 |  | $\begin{array}{lllll}15 & 26 & 21 & 8\end{array}$ | $97 \cdot 47$ | 6 | $22 \quad 5 \quad 24.85$ | $628 \quad 5 \cdot 7$ | 122.32 |
|  | 20 22 7 89 <br> 20 24 25  <br> 1    | $15.1637 \%$ | 98.3 | 7 | $22 \quad 7 \quad 30 \cdot 93$ | $615 \cdot 518$ | 122 |
| 8 | 20 24 25.91 <br> 20 26 43.66 <br> 0 29 1.11 | $\begin{array}{rrr}15 & 6 \\ 14 & 56 \\ 14\end{array}$ | -90 | 8 | $\begin{array}{lrrrr}22 & 9 & 36 & 81 \\ 20 & 11 & 42 & .48\end{array}$ | 6 3 36 $\cdot 5$ <br> 5 51   | 122 '73 |
| 10 | $20 \begin{array}{llll}29 & 1 \% 11\end{array}$ | 14565 | $99 \cdot 90$ $100 \cdot 70$ | 9 | $\begin{array}{llll}22 & 11 & 42 \cdot 48 \\ 29 & 13 & 47\end{array}$ | $\begin{array}{lllll}5 & 51 & 200 & \cdot 1\end{array}$ |  |
| 11 | $203118 \cdot 28$ | 143648 |  | 11 | $\begin{array}{lllll}22 & 13 & 47 & 786 \\ 22 & 15 & 53 & -25\end{array}$ | $\begin{array}{lllr}5 & 39 & 2 & 2 \\ 5 & 26 & 44 \cdot 1\end{array}$ |  |
| 12 | $2033 \quad 35 \cdot 17$ | $142640 \cdot 0$ | 102 23 | 1 | $\begin{array}{llll}22 & 15 & 53 \\ 22 & 17 & 58\end{array}$ | $\begin{array}{llll}5 & 26 & 44 \cdot 1 \\ 5 & 14 & 24.6\end{array}$ |  |
| 13 | $\begin{array}{llllllllll}20 & 35 & 51 & 78\end{array}$ | $141626 \%$ | 102 -98 | 13 | 2220 | $\begin{array}{llll}5 & 2 & 4 \cdot 2\end{array}$ |  |
| 14 | 203888 | $\begin{array}{llll}14 & 6 & 8 & 7\end{array}$ |  | 14 | $22.22 \quad 7.96$ | 4. $4943 \%$ |  |
|  | $204024 * 14$ | $\begin{array}{lllll}13 & 55 & 46 & 3\end{array}$ | 10 | 15 | $22.2412 \cdot 50$ | 43721.0 | 123 '71 |
|  | $\begin{array}{llll}20 & 42 & 39 & \cdot 90 \\ 20 & 44 & 5\end{array}$ | $\begin{array}{lllll}13 & 45 & 19 & 7\end{array}$ | 10 | 16 | 22 26 16 166 | 4.2458 .4 | , |
| 15 |  | $\begin{array}{llllllllllll}13 & 34 & 48 & 8 \\ 13 & 94 & 13\end{array}$ | 105 -85 | 17 | 22.8821 .03 | $41235 \cdot 1$ | 97 |
| 19 | $204925 \cdot 50$ | $\begin{array}{llll}13 & 24 & 13 & 7 \\ 13 & 13 & 34 & 6\end{array}$ | $106 \cdot 52$ $107 \cdot 20$ | 18 | $\begin{array}{lllll}22 & 30 & 25 & 04 \\ 22 & 39 & 98 & 187\end{array}$ | $\begin{array}{llll}4 & 0 & 11 & 3\end{array}$ |  |
| 0 | $205140 \cdot 15$ | $\begin{array}{lllll}13 & 13 & 51 & 51\end{array}$ |  | 19 | $\begin{array}{llllll}22 & 32 & 28 & 87 \\ 22 & 34 & 32 & 54\end{array}$ | $\begin{array}{llllllll}3 & 47 & 47 \\ 3 & 35 & 90\end{array}$ | $124 \cdot 12$ |
| 21 | $2053 \quad 54 \quad 52$ | 12524 |  | 21 | $\begin{array}{lllll}22 & 34 & 32 & 54 \\ 22 & 36 & 36 & 04\end{array}$ | $\begin{array}{llllll}3 & 4 & 35 & 22 \\ 3 & 20 & 5\end{array}$ | 124 |
| 22 | $\begin{array}{lllll}20 & 56 & 8 & 61\end{array}$ | 124113 |  | 22 | 2236 22 | 3 29 57  <br> 3 10 31 2 |  |
| 3 | $5822 \cdot 43$ | S. 1230 |  | 23 |  | 10 31 |  | MONDAY 26.

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| 0 | 224245057 | $\mathrm{S}$. | 124:30 |
| :---: | :---: | :---: | :---: |
| 1 | $\begin{array}{llllllll}22 & 44 & 48 & 44\end{array}$ | 2.3314 .7 | 124.32 |
| 2 | $22 \quad 46 \quad 51 \cdot 16$ | $290 \quad 48 \quad 8$ | 124:30 |
| 3 | 2248 | 28823.0 | 124 30 |
| 4 | $22 \quad 50 \quad 56 \cdot 15$ | $155 \quad 57 \cdot 2$ | $124 \cdot 25$ |
| 5 | $22 \quad 5258 \cdot 43$ | $14331 \cdot 7$ | 124 '23 |
| 6 | 2255 | 13163 | $124 \cdot 17$ |
| 7 | $\begin{array}{llll}22 & 57 & 2 & 57\end{array}$ | $18 \quad 41 \cdot 3$ | $124 \cdot 12$ |
| 8 | $2259.4 * 44$ | $1.616 \%$ | 124.05 |
| 9 | 23 1 $210 \% 19$ | $\begin{array}{llll}0 & 53 & 52 & *\end{array}$ | 123 '98 |
| 10 | $\begin{array}{llll}23 & 3 & 7 & 80\end{array}$ | $04188 \cdot 4$ | 123 'as |
| 11 | $\begin{array}{llll}23 & 5 & 9 & 29\end{array}$ | $\begin{array}{llll}0 & 29 & 5 & 1\end{array}$ | 123 '79 |
| 12 | $\begin{array}{lllllllllll}23 & 7 & 10 & 65\end{array}$ | $\begin{array}{llllll}0 & 16 & 42 & \end{array}$ | 123.68 |
| 13 | $\begin{array}{lllll}23 & 9 & 11 & 90\end{array}$ | S. $0 \quad 4 \quad 20 \cdot 3$ | $123 \cdot 55$ |
| 14 | 2311113.03 | N. 0 8 $81{ }^{1} 0$ | 123'43 |
| 15 | $\begin{array}{lllllll}23 & 13 & 14 & 05\end{array}$ | $02021 \cdot 6$ | $123 \cdot 30$ |
| 16 | $\begin{array}{llllll}23 & 15 & 14 & 97\end{array}$ | $\begin{array}{lllll}0 & 32 & 41 & 4\end{array}$ | $123 \cdot 13$ |
| 17 |  | 04500 | $123 \times 0$ |
| 18 |  | $\begin{array}{lllll}0 & 57 & 18 & \text { 2 }\end{array}$ | 122 '82 |
| 19 |  | $\begin{array}{lllll}1 & 9 & 35\end{array}$ | 122.65 |
| 20 | $\begin{array}{llllll}23 & 23 & 17 & 58\end{array}$ | $12151^{\circ} 0$ | 122.47 |
| 21 |  | $134-5.8$ | $122 \cdot 27$ |
| 22 | $\begin{array}{llllllllllllllllll}23 & 27 & 18 & 30\end{array}$ | 1 46 19  | $122 \cdot 07$ |
| 23 |  | $\begin{array}{lllll}1 & 58 & 31 & 8\end{array}$ | $121 \cdot 85$ |
| 24 |  | N. 210 |  |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Hour. | Right Ascension. | Declination. | $\begin{aligned} & \text { Diar. Dec. } \\ & \text { for } 10^{\mathrm{m}} . \end{aligned}$ | Hour. | Right Ascension. | Declination. | $\begin{aligned} & \text { Diff. Dec. } \\ & \text { for 10m. } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | THURSDAY 29. |  |  |  | SATURDAY 31. |  |  |
|  | m | N- ${ }^{\prime \prime}$ | , |  |  | DAY 31. | " 10 |
| 0 | $23 \quad 31 \quad 18 \cdot 67$ | N. $21042 \cdot 9$ | $121 \cdot 63$ | 0 | $1 \quad 637.66$ |  | $101 \cdot 57$ |
| 1 | $23 \quad 3318 \quad 73$ | 222527 | $121 \cdot 40$ | 1 | $\begin{array}{llll}1 & 8 & 36 & 84 \\ 1 & 10 & 36 \cdot 06\end{array}$ | $\begin{array}{llll}11 & 24 & 29 & 8 \\ 11 & 34 & 35\end{array}$ | 100 -98 |
| 0 | $23 \quad 3518 \quad 71$ | $\begin{array}{llll}2 & 35 & 1 & 1\end{array}$ | $121 \cdot 17$ | 2 | $11036 \cdot 06$ | $\begin{array}{llllll}11 & 34 & 35\end{array}$ | $100 \cdot 37$ |
| 3 | $233718 \% 1$ | $2478 \cdot 1$ | $120 \cdot 92$ | 3 | $11235 \cdot 32$ | 11 44 37 <br> 11 5  | 99•78 |
| 4 | 233918.44 | 25913.6 | $120 \cdot 65$ | 4 | $11434 \% 3$ | 115436.6 | $99 \cdot 15$ |
| 5 | $23.41 \quad 18 \cdot 19$ | $3 \begin{array}{llll}3 & 11 & 17 & 5\end{array}$ | 120 | 5 | $\begin{array}{llll}1 & 16 & 33 & 98\end{array}$ |  | $98 \cdot 55$ |
| 6 | $234317 \cdot 88$ | $\begin{array}{lllll}3 & 23 & 19\end{array}$ | $120 \cdot 13$ | 6 | $11833 \cdot 38$ | $121422 \cdot 8$ | $97 \cdot 93$ |
| 7 | $\begin{array}{llllllll}23 & 45 & 17 & 49\end{array}$ |  | 119 '83 | 7 | $12032 \cdot 89$ | $12.2410 \cdot 4$ | $97 \times 28$ |
| 8 | $234717 \cdot 05$ | $\begin{array}{lllllll}3 & 47 & 19 & 6\end{array}$ | 119 '53 | 8 | $\begin{array}{llll}1 & 22 & 32 & 31 \\ 1 & 21 & 31 & -86\end{array}$ | 12 33 54 <br> 12 4  | 96.67 |
| 9 | $2349 \quad 16 \cdot 54$ |  | 119 '25 | 9 | 12431.86 | $\begin{array}{llll}12 & 43 & 34 \cdot 1 \\ 12 & 5\end{array}$ | 96.02 |
| 10 | $2351515 \cdot 98$ | $\begin{array}{lllll}4 & 11 & 12 & 3\end{array}$ | 118.93 | 10 | $\begin{array}{llll}1 & 26 & 31 \cdot 46 \\ 1 & 28 & 31 & 11\end{array}$ | $\begin{array}{llll}12 & 53 & 10 & 0 \\ 13 & 8\end{array}$ | $95+38$ |
| 11 |  | $423{ }^{4} 59$ | 118 \%2 | 11 | $\begin{array}{lllll}1 & 28 & 31 \cdot 11\end{array}$ | $\begin{array}{lll}13 & 2 & 42\end{array}$ | $94 \cdot 72$ |
| 12 | $\underline{23} 55514 \cdot 69$ | $43457^{4} 6$ | 118.30 | 12 | $\begin{array}{ll}1 & 30 \\ 1 & 30\end{array} 8$ | $\begin{array}{llll}13 & 12 & 10 & 8 \\ 13^{\prime} & 21 & 3\end{array}$ | $94 \cdot 07$ |
| 13 | $\begin{array}{lllll}23 & 5713.97\end{array}$ | $\begin{array}{llllllll}4 & 46 & 47 & 4\end{array}$ | $117 \cdot 95$ | 13 | $\begin{array}{ll}1 & 32 \\ 1 & 30 \\ 1 & 59\end{array}$ | 13 21 31 3 <br> 13 3 5  | $93 \cdot 40$ |
| 14 | $\begin{array}{llllllllll}23 & 59 & 13 & 20\end{array}$ | $45835 \cdot 1$ | 117.62 | 14 | 1 1 1 $3430 \cdot 43$ | $\begin{array}{llll}13 & 30 & 55 & 6\end{array}$ | $92 \cdot 72$ |
| 15 | $\begin{array}{lllllllll}0 & 1 & 12 & 39\end{array}$ | $\begin{array}{lllll}5 & 10 & 20 & 8\end{array}$ | 117.28 | 15 | 1 36 $30 \cdot 32$ | $\begin{array}{lllll}13 & 40 & 11 & \prime \\ 13 & 40\end{array}$ | $92 \cdot 05$ |
| 16 | 0 3 3.11.53 | $5 \begin{array}{lll}5 & 22 & 4 \cdot 5\end{array}$ | 116 -90 | 16 | $13830 \cdot 28$ | 13 49 24 <br> 13   | $91 \cdot 38$ |
| 17 | $\begin{array}{llll}5 & 10 & 64 \\ 7 & 9 & 71\end{array}$ | $\begin{array}{lllll}5 & 33 & 45 \\ 5 & 45 & 9 & 9\end{array}$ | 116.55 | 17 | $\begin{array}{llll}1 & 40 & 30 & 30 \\ 1 & 40 & 30\end{array}$ | $\begin{array}{llll}13 & 58 & 32 \cdot 5 \\ 14 & 7 & 36\end{array}$ | $90 \cdot 68$ |
| 18 | 0 7 9 | 5 45 45  <br> 5 5 2  | $116 \cdot 17$ | 18 | 1 42 <br> 1 30 <br> 1 40 | $\begin{array}{llll}14 & 7 & 36 \% \\ 14 & 6\end{array}$ | $90 \cdot 00$ |
| 19 | $\begin{array}{llll}0 & 9 & 8 & 75\end{array}$ | $\begin{array}{llll}5 & 57 & 2 & 2\end{array}$ | $115 \cdot 80$ | 19 | 1 1 $4430 \cdot 55$ | 141636 | $89 \cdot 28$ |
| 20 | $\begin{array}{llll}0 & 11 & 7 & 75\end{array}$ | $\begin{array}{lllllll}6 & 8 & 37 & 0\end{array}$ | 115 -40 | 20 | $\begin{array}{ll}1 & 46 \\ 1 & 30 \\ 1 & 78\end{array}$ | $\begin{array}{llll}14 & 25 & 32 \cdot 3 \\ 14 & 34 & 23\end{array}$ | 88.60 |
| 21 | $\begin{array}{llll}0 & 13 & 6 \cdot 73\end{array}$ | $\begin{array}{llll}6 & 20 & 9 & 4\end{array}$ | $115{ }^{\circ} 00$ | 21 | 14831.08 | $\begin{array}{llll}14 & 34 & 23 \cdot 9 \\ 14 & 43 & 119\end{array}$ | $87 \cdot 88$ |
| 22 | $\begin{array}{llll}0 & 15 & 5.69\end{array}$ | $\begin{array}{llllllll}6 & 31 & 39 & 4\end{array}$ | 114.60 | 22 | $\begin{array}{llll}1 & 50 & 31 \cdot 45 \\ 1 & 50 & 31\end{array}$ | $\begin{array}{llll}14 & 43 & 11 \\ 14 & 51 & 54\end{array}$ | $87 \cdot 17$ |
| 93 |  |  | $114 \cdot 20$ | 23 | SUNDAY, SEPT. 1. |  | 86.45 |
| 0 | 019 3'53 | N. $65432 \cdot 2 \mid$ | $113 \cdot 77$ | 0 | $15432 \cdot 42$ | N. 15 0 32.9 |  |
| 1 | $\begin{array}{lll}0 & 21 & 2 \cdot 43\end{array}$ | $\begin{array}{lllll}7 & 5 & 54.8 \\ 7 & 1 & 7 & 14 \cdot 9\end{array}$ | $113 \cdot 35$ |  |  |  |  |
| 2 | $\begin{array}{lll}0 & 23 & 1\end{array} 31$ | 71714.9 | $112 \cdot 90$ |  |  |  |  |
| 3 | $\begin{array}{lll}0 & 25 & 0 \cdot 17\end{array}$ |  | $112 \cdot 47$ |  |  |  |  |
| 4 | 0 2659.03 | $73947 \cdot 1$ | 112 '02 |  |  |  |  |
| 5 | 02857.88 | $7 \quad 5059.2$ | 11145 |  |  |  |  |
| 6 | $\begin{array}{lllll}0 & 30 & 56.73\end{array}$ | $\begin{array}{llll}8 & 2 & 8 & 5 \\ 8 & 18 & 1\end{array}$ | $111 \cdot 10$ |  |  |  |  |
| 7 | 0 $3255 \cdot 57$ | 8 13 15 1 <br> 8    | 110 62 |  | PHASES | THE MOON |  |
| 8 | $03454 \cdot 41$ | $882418 \cdot 8$ | $110 \cdot 15$ |  |  |  |  |
| 0 | $\begin{array}{lllll}0 & 36 & 53 & 25 \\ 0\end{array}$ | $\begin{array}{lllllllll}8 & 35 & 19 & 7\end{array}$ | $109 \cdot 67$ |  |  |  |  |
| 10 | $0.3852 \cdot 10$ | $84617{ }^{\prime} 7$ | $109 \cdot 17$ |  |  | 515 |  |
| 11 | $04050 \cdot 95$ | 857127 | $108 \cdot 67$ |  | © Last Quar | 515 | '3 |
| 12 | $04249 \cdot 81$ | - 98847 | $108 \cdot 17$ |  | - New Moon | - - 1314 | -5 |
| 13 | $\begin{array}{lllll}0 & 44 \\ 0 & 48 \cdot 68 \\ 0 & 46 & 47 & 57\end{array}$ | $\begin{array}{llll}9 & 18 & 53 & 7 \\ 9 & 29 & 39 & 7\end{array}$ | $107 \cdot 65$ $107 \cdot 13$ |  | D First Quar | --2014 | $15 \cdot 5$ |
| 14 15 | $\begin{array}{llllll}0 & 46 & 47 \cdot 57 \\ 0 & 48 & 46 \cdot 47\end{array}$ | $\begin{array}{lllll}9 & 29 & 39 & 6 \\ 9 & 40 & 22 & 4\end{array}$ | $107 \cdot 13$ 106 1060 |  | O Full Moon |  |  |
| 15 16 | $\begin{array}{llllll}0 & 48 & 46.47 \\ 0 & 50 & 45 & 40\end{array}$ | $\begin{array}{rrrr}9 & 40 & 22 & 4 \\ 9 & 51 & 2 & 0\end{array}$ | $106 \cdot 60$ $106 \cdot 07$ |  | O Full Moon | --2712 |  |
| 17 | 0-52 44-34 | $10 \quad 1388$ | $105 \cdot 53$ |  |  |  |  |
| 18 | $054443 \cdot 30$ | $101211 \%$ | $104 \cdot 98$ |  |  |  |  |
| 19 | $\begin{array}{lllll}0 & 56 & 42 & 29\end{array}$ | $\begin{array}{lllll}10 & 22 & 41 & 5 \\ 10 & 33 & 8\end{array}$ | $104 \cdot 42$ |  |  |  | $22^{\text {h }}$ |
| 20 | $\begin{array}{llll}0 & 58 & 41 & 30\end{array}$ | 103388 | $103 \cdot 88$ |  |  |  |  |
| 21 | 1. $0040 \cdot 35$ | $\begin{array}{lllll}10 & 43 & 31 & 3 \\ 10 & -3 & 51\end{array}$ | $103 \cdot 30$ |  | $\mathbb{C}$ Perigee | - - - - - 21 |  |
| 22 | $239 \cdot 42$ | $\begin{array}{llllll}10 & 53 & 51 & 1\end{array}$ | $102 \cdot 73$ |  |  |  |  |
| 23 | $1{ }_{1} 4388 \cdot 52$ | $\begin{array}{llll}11 & 4 & 7 \cdot 5\end{array}$ | $102 \cdot 15$ |  |  |  |  |
| 24 | $1 \quad 637.66$ | N. $11141420 \cdot 4$ |  |  |  |  |  |


| MEAN TIME. |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | THE SUN'S <br> Apparent |  | Logarithm of the Radius Vector of the Earth. | THE MOON'S |  |  |  |
|  | Lougitude. | Latitude. |  | Semidi | meter. | Horizonta | Parallax, |
|  | Noon. | Noon. | Noon. | Noon. | Midnight. | Noon. | Mithigh. |
|  | $159^{\circ} 5^{\prime} 24^{\prime \prime} \cdot 1$ | N. ${ }^{\prime \prime} .66$ | $0 \cdot 0036668$ | $14^{\prime} 55^{\prime \prime} \cdot 9$ | 14'52̈.8 | $54^{\prime} 47^{\prime \prime} 7$ | $54^{\prime} 36^{\prime \prime}{ }^{\prime}$ |
| 2 | $160 \quad 3 \quad 32 \cdot 5$ | 0.55 | 0 -0035621 | $1450 \cdot 2$ | $1448{ }^{\text {\% }}$ | $5426 \cdot 9$ | $5419 \%$ |
| 3 | $\begin{array}{llll}161 & 1 & 42 & 8\end{array}$ | $0 \cdot 43$ | 0 -003 4566 | $1446 \%$ | 1446 '2 | $5414 \cdot 6$ | 54129 |
| 4 | $1615955 \cdot 1$ | 0 *29 | 0 -0335502 | 1446 '3 | 14470 | $5412 \cdot 4$ | $5415 \cdot 1$ |
|  | $16258 \quad 9 \cdot 5$ | 0.15 | 0 -0032428 | $1448{ }^{5}$ | $1450 \%$ | 5420 \% | 5428.4 |
| 6 | $163 \quad 5626$ :0 | N. 0.01 | 0 -0031342 | 1453 '5 | $1457 \%$ | 5438 '8 | $5451 \%$ |
|  | $1645444 \%$ | S. $0 \cdot 09$ | 0 -0030245 | $\begin{array}{ll}15 & 1 \cdot 1\end{array}$ | $15 \quad 5$ \% | $55 \quad 6: 8$ | $55 \quad 23.9$ |
| 8 | $165533 \cdot 5 \cdot 1$ | $0 \cdot 19$ | 0 -0029136 | 15109 | $15 \quad 16 \cdot 5$ | $55.42 \cdot 8$ | $\begin{array}{llll}56 & 3 \\ 56\end{array}$ |
| 9 | $1665127 \cdot 8$ | $0 \div 6$ | 0 -0028014 | $15 \quad 22.4$ | 1528 '5 | $56 \quad 24 \cdot 9$ | 56479 |
| 10 | $1674952 \cdot 5$ | $0 \cdot 30$ | 0 -0026879 | 1534.6 | $1540 \cdot 7$ | 5797 | 5732.3 |
| 11 |  | $0 \cdot 32$ | 0.0025729 | $1546 \cdot 7$ | $15 \quad 52 \cdot 4$ | $5754 \cdot 1$ | 5815 \% |
| 12 | $1694647 \times 7$ | 031 | 0 '0024566 | $1557 \%$ | $16 \quad 24$ | $5834 \cdot 3$ | 58517 |
| 13 | $1704518 \cdot 2$ | $0 \cdot 26$ | 0 0023389 | $16 \quad 6 \%$ | $1610 \cdot 1$ | $59 \quad 7 \cdot 1$ | 5919.9 |
| 14 | $171 \begin{array}{lllll}17 & 50 & 4\end{array}$ | $0 \cdot 19$ | 0 0029198 | $1612 \cdot 9$ | 1614.9 | $5930 \cdot 2$ | 5937.7 |
| 15 | 1724224.5 | S. $0 \cdot 09$ | 0 '0020995 | $1616 \cdot 2$ | 1616 \% | $5942 \cdot 5$ | $5944 \%$ |
| 16 | $17341 \quad 0 \cdot 3$ | N. $0 \cdot 02$ | 0 -0019780 | 16167 | 16160 | 5944 -3 | 5941 \% |
| 17 |  | $0 \cdot 15$ | 0 -0018556 | 16147 | $1612 \cdot 9$ | 5936 * | $5930 \cdot 3$ |
| 18 | $1753817 \cdot 2$ | 0 -29 | 0 0017322 | 16107 | $16 \quad 8.2$ | $5922 \cdot 1$ | 5912.9 |
| 19 | $1763658 \cdot 1$ | 0.41 | 0 0016082 | $\begin{array}{lll}16 & 5 & 4\end{array}$ | $\begin{array}{ll}16 & 2.3\end{array}$ | $59 \quad 2.6$ | $\begin{array}{ccc}58 & 51 \cdot 3 \\ 58 & \text { 1/3 }\end{array}$ |
| 20 | $1773540 \cdot 7$ | 0.53 | 0 '0014836 | 1559.0 | 1555 '6 | 5839 | 5826.8 |
| 21 | $1783424 \cdot 9$ | 0.63 | 0 '0013585 | 1552.0 | 1548 '3 | 5813 '7 | 580.1 |
| 22 | $1793310 \times 8$ | $0 \cdot 71$ | 0 -0012333 | $1544 \%$ | $1540 \%$ | 5746 *2 | $5731 \%$ |
| 23 | 1803158.6 | $0 \cdot 77$ | 0 '0011080 | $1536 \cdot 7$ | 1532.6 | 5717.3 | $57 \quad 2 \cdot 4$ |
| 24 | $1813048 \cdot 2$ | $0 \cdot 79$ | 0 -0009827 | 1528 | 1524.3 | 5647 ² | $5632 \cdot 1$ |
| 25 | $\begin{array}{llll}182 & 29 & 39 & 7\end{array}$ | $0 \cdot 79$ | 0 -0008575 | $1520 \cdot 2$ | $\begin{array}{llll}15 & 16 \cdot 1\end{array}$ | 5616 \% | $\begin{array}{lll}56 & 1 & 7\end{array}$ |
| 26 | $1832833^{\circ} 0$ | $0 \cdot 76$ | 0 0007326 | $1512 \cdot 0$ | $15 \quad 80$ | $5546 \cdot 9$ | $5532 \cdot 3$ |
| 27 | $1842728 \cdot 3$ | 070 | $0 \cdot 0006079$ | $15 \quad 4 \cdot 2$ | $\begin{array}{lll}15 & 0\end{array}$ | 5518 | $55 \quad 5 \%$ |
| 28 | $185 \quad 2625.6$ | 0.61 | 0.0004836 | 1457.3 | $14.54 \cdot 2$ | 54 $52 \cdot 7$ | 5441.3 |
| 29 | $18625 \quad 25 \cdot 1$ | 0.50 | 0 -0003597 | $1451{ }^{\text {c }}$ | $1449 \cdot 1$ | $5431 \cdot 3$ | 5422.8 |
| 30 | $1872426 \cdot 8$ | $0 \cdot 37$ | 0 •0002361 | $1447 \%$ | 1445 '8 | $5415 \quad 3$ | $5410 \%$ |
| 31 | $1882330 \cdot 7$ | N. $0 \cdot 23$ | 0 0001129 | 1444 9 | $1444 \%$ | 54:74 | $54 \quad 64$ |


| MEAN TIME. |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | THE MOON'S |  |  |  |  |  |
|  |  | Longitude. |  | Latitude. |  | $\begin{array}{\|l} \hline \text { Age. } \\ \hline \text { Noon. } \\ \hline \end{array}$ | Meridian <br> Passage. |
|  |  | Noon. | Midnight. | Noon. | Midnight. |  |  |
| Sun. | 1 | $31^{\circ} 544^{\prime} 7^{\prime \prime} 0$ | $37^{\circ} 56^{\prime} 6^{\prime \prime} 25^{\prime \prime} \cdot 4$ |  | N. $\stackrel{\circ}{\circ} 3^{3} 36^{\prime} 59^{\prime \prime} \cdot 0$ | $18 \cdot 4$ | 15 ${ }^{\text {h }}$ \% m |
| Mon. | 2 | $\begin{array}{lllllllllllll}43 & 5 & 5 & 51 & 0\end{array}$ | $495257 \cdot 6$ | $\begin{array}{llll}2 & 9 & 4 & 7\end{array}$ | $\begin{array}{lllll}1 & 39 & 54 & \\ \end{array}$ | $19 \cdot 4$ | $16 \quad 27 \cdot 4$ |
| Tues. | 3 | $554820 * 9$ | $614240 \cdot 2$ | 1 9) $46 \cdot 7$ | N. $038858{ }^{\circ}$ | $20 \cdot 4$ | $17 \quad 15$ |
| Wed. | 4 | $\begin{array}{lllll}67 & 36 & 35 & 6\end{array}$ | $73 \quad 3048 \cdot 3$ | N. 0 | S. $0 \times 2334 \cdot 1$ | $21 \cdot 4$ | $18 \quad 3 \cdot 8$ |
| Thur. | 5 | $\begin{array}{llllll}79 & 25 & 59 & 9\end{array}$ | $852251 \cdot 7$ | S. $0 \times 5443 \cdot 4$ | $12525 \cdot 3$ | $22 \cdot 4$ | 1853.0 |
| Frid. | 6 | $\begin{array}{llll}91 & 22 & 4\end{array}$ | $97 \quad 2416 \%$ | 15521.9 | 22414.8 | $23 \cdot 4$ | $1942 \cdot 3$ |
| Sat. | 7 | $\begin{array}{lllll}103 & 30 & 5\end{array}$ | 1094043 | $25144 \times 8$ | $\begin{array}{lll}317 & 32\end{array}$ | $24 \cdot 4$ | 20313 |
| Sun. | 8 | $115 \quad 5442 \cdot 7$ | $1221425 \cdot 2$ | $34115{ }^{3} 9$ | 4 2 34.8 | $25 \cdot 4$ | 2119.9 |
| Mon. | 9 | $1283930 \%$ | $1351011 \cdot 1$ | 42174 | $43632 \cdot 5$ | $26 \cdot 4$ | 228 |
| Tues. | 10 | $1414631 \cdot 3$ | $148 \quad 28 \quad 28 \cdot 4$ | 44829.2 | $45638 \cdot 7$ | $27^{\prime 4}$ | 2256 |
| Wed. | 11 | $15515 \quad 51 \cdot 3$ | $162880{ }^{19}$ | $5{ }_{5}^{5}$ | $50032 \cdot 4$ | 28.4 | $23 \quad 45 \cdot 3$ |
| Thur. | 12 | 169 5 30  | $\begin{array}{llll}176 & 6 & 48 & 3\end{array}$ | 455513 | $44645 \cdot 9$ | 294 | $\delta$ |
| Frid. | 13 | $1831135 \cdot 3$ | $\begin{array}{lllll}190 & 19 & 10 & 6\end{array}$ | $\begin{array}{lll}4 & 33 & 8 \\ \\ 7\end{array}$ | 4 15 10  | $0 \times 9$ | 0 35 <br> 1 4 |
| Sat. | 14 | $1972851 \cdot 1$ | $2043953 \cdot 5$ | $\begin{array}{llll}3 & 53 & 4\end{array}$ | $\begin{array}{lllllllll}3 & 27 & 11 & 5\end{array}$ | 1.9 | 1278 |
| Sun. | 15 | $2115137 \cdot 1$ | 2193830 | $25755 \cdot 8$ | $22547 \cdot 3$ | 2.9 | 221.6 |
| Mon. | 16 | $2261440 \cdot 9$ | 233124597 | $1 \begin{array}{lll}151 & 19\end{array}$ | $\begin{array}{lll}1 & 15 & 7 \cdot 4\end{array}$ | $3 \cdot 9$ | 318.4 |
| Tues. | 17 | 2403358 | $2474118 \cdot 2$ | S. $03749 \cdot 1$ | S. 000029 | $4 \%$ | $417 \cdot 2$ |
| Wed. | 18 | $2544648{ }^{\circ} 0$ | $261 \quad 50 \quad 18 \quad 5$ | N. $03736{ }^{\prime} 1$ | N. 11141297 | $5 \cdot 9$ | $516 \cdot 8$ |
| Thur. | 19 | $2685144 \times 3$ | 2755116 | 15046 | $\begin{array}{lllll}2 & 23 & 48 & 9\end{array}$ | $6 \cdot 9$ | $\begin{array}{lll}615 \\ 7 & 15\end{array}$ |
| Frid. | 20 | $28248 \quad 8{ }^{\circ} 0$ | 289833009 |  | 3 23 51 | $7 \cdot 9$ | 712 |
| Sat. | 21 | 2963537.6 | 3032554.0 | $\begin{array}{llll}3 & 49 & 22\end{array}$ | $41124 \cdot 5$ | $8 \cdot 9$ | $8 \quad 6 \%$ |
| Sun. | 22 | 310 13 45 | $\begin{array}{llll}316 & 59 & 4 & 1\end{array}$ | 4 4 2944 3 | $444 \quad 9 \quad 6$ | $9 \cdot 9$ | $858 \cdot 1$ |
| Mon. | 23 | 323 41 42 <br> 9   | $3302131 \cdot 9$ | $4 \begin{array}{llllll}4 & 54 & 32 & 5\end{array}$ | $50.49 \%$ | $10 \cdot 9$ | $946 \cdot 7$ |
| Tues. | 24 | $33658 \quad 21 \cdot 8$ | $\begin{array}{llll}343 & 32 & 2 & 4\end{array}$ | $\begin{array}{llll}5 & 3 & 1 \cdot 1\end{array}$ | $\begin{array}{llll}5 & 1 & 10\end{array}$ | 11.9 | $1033 \cdot 3$ |
| Wed. | 25 | $350 \quad 224{ }^{\circ}$ | $\begin{array}{lllll}356 & 29 & 18 & 9\end{array}$ | $45524 \cdot 3$ | 445537 | $12 \cdot 9$ | $1118 \cdot 7$ |
| Thur. | 26 | $25840 \cdot 4$ | 91224.9 | $\begin{array}{llllll}4 & 32 & 51 & 5\end{array}$ | $41632 \cdot 7$ | $13 \cdot 9$ | $12 \quad 3 \%$ |
| Frid. | 27 | $\begin{array}{llll}15 & 28 & 32 \cdot 1\end{array}$ | 21414 | $\begin{array}{lllllllllll}3 & 57 & 14 \%\end{array}$ | $\begin{array}{llll}3 & 35 & 16 \cdot 1\end{array}$ | 14.9 | $1248 \cdot 7$ |
| Sat. | 28 | 2750 | $\begin{array}{llllll}33 & 55 & 57 & 4\end{array}$ | 3 10 5 | 244343 | $15 \cdot 9$ | $1334 \cdot 4$ |
| Sun. | 29 |  | $\begin{array}{llllllll}45 & 58 & 47 & 5\end{array}$ | $\begin{array}{llll}2 & 16 & 31 & \\ 1 & 16\end{array}$ | $147 \quad 6 \cdot 5$ | 16.9 | 1421.0 |
| Mon. | 30 | $5156,31 \cdot 4$ | $5752 \quad 22 \cdot 2$ | $1 \begin{array}{lll}16 & 39 & 7\end{array}$ | N. 045829.9 | 17.9 | $\begin{array}{llll}15 & 8 & 5\end{array}$ |
| Tues. | 31 | 634649.5 | $6940 \quad 25 \cdot 7$ | N. $01313 \quad 55.6$ | S. $017 \begin{array}{llll} & 45\end{array}$ | $18 \cdot 9$ | $15 \quad 567$ |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.


## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.


## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

|  |  | Declination. |  | Hour. | Right Ascensi | Deciination. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | WEDNESDAY |  |  |  | FRIDAY 27. |  |  |
|  |  | N. 0344949 | $120 \cdot 58$ | 0 | ${ }_{0}^{\mathrm{h}} 50 \mathrm{~m} 0^{4} 48^{\prime} \cdot 93$ |  |  |
|  | $\begin{array}{llllll}23 & 17 & 39 & 46\end{array}$ | $\begin{array}{llll}0 & 46 \\ 0 & 53.3 \\ 0 & 58 & 56\end{array}$ |  |  | 0524801 | ${ }_{55} 5^{4.0}$ |  |
|  | 2319 23 21 | 5856 | 120.33 120.18 |  | O $54.47 \cdot 13$ | 105300 |  |
| 4 | $23 \quad 23$ 38 16 |  | $120 \cdot 18$ 120.03 |  | 0 56 <br> 0 46 <br> 0 58 <br> 1  <br> 1 4 | 1015.5 |  |
|  | $23.2537 \cdot 60$ | 34 |  |  | 5845.50 044.75 | 102615 103632 |  |
| 6 | $23 \quad 273697$ | 14658 | $119 \%$ |  | - 44 | 10 10 10 |  |
|  | 23 29.3608 | 15856 |  |  | 443 | 10.46 |  |
|  |  | 210 | 119 |  | 16542 80 |  |  |
|  | ${ }^{23} 33334{ }^{2} \times 74$ | 222 |  | 9 | $1 \begin{array}{lll}1 & 8 & 42 \cdot 25\end{array}$ | 1117 |  |
| $\begin{aligned} & 10 \\ & 11 \end{aligned}$ |  | 4 | $118 \cdot 93$ | 10 | $11041 \quad 76$ | 1127 |  |
| 12 | ${ }^{23} 231932$ | 58 | 118 | 11 |  | 1137 |  |
| 13 | 234131.08 | 310 |  |  | 1 1 1 1 $164040 \cdot 62$ | 11 46 <br> 11 56 <br> 1 49 |  |
|  | 234330 | 3221 | 118.08 | 14 | 11840 | 636.0 |  |
| 15 | 23 23 28 | 3 3 35 | 11797 | 15 | $12040 \cdot 17$ | 121618 |  |
|  | 23 <br> 23 <br> 2 | 3 4546 -2 |  | 15 | $12240 \% 3$ | 12 |  |
|  |  | 3 <br> 3 <br> 4 <br> 4 | 117.25 11600 | 17 | 1 1 1 2439.97 | 123533 |  |
| 19 | 2353 | 205 |  | 18 | 1 2639 <br> 1  <br> 1 28 <br> 10  | $1245.4 \%$ |  |
| 20 | $\begin{array}{lllll}23 & 55 & 23 & 21 \\ 03\end{array}$ | 4323 |  | 20 | 1 <br> 1 <br> 1 <br> 1 <br> 2840.16 | ${ }_{3}^{54}$ |  |
|  | 235721.98 | 44415 | 116 | 21 | 1324 | 13 3 <br> 13 13 <br> 13 16 |  |
| 22 | 59 20.72 | 5552 | 115 •80 | 22 | 13440.64 | 1313 |  |
|  | $19 \cdot 45$ |  |  | 23 | $3640 \cdot 99$ | N. 13314 |  |
|  | THURSDAY 26. |  |  |  | SATURDAY 28. |  |  |
| 1 | $516 \cdot 87$ | 51859 53030 5 |  |  |  |  |  |
| 2 | 715:57 | 541 |  |  |  | 134956 13585 145 |  |
|  | $14 \cdot 25$ | 553 | $114 \cdot 18$ | 3 | 14442972 |  |  |
|  | 1112.93 | 51 \% | $113 \%$ | 4 | $14643 \cdot 85$ | 1416 |  |
|  | 131161 | ${ }_{6}^{61613.8}$ |  |  | 1 $4844 \% 6$ | 1425 |  |
| 6 | 17 | $6{ }_{6}^{6} 27$ 34*3 |  | 6 | $15045 \cdot 53$ | 1434 |  |
| 7 | $\begin{array}{llllll}0 & 17 & 8 & 97 \\ 0 & 19 & 7 & 765\end{array}$ | 63852.5 <br> $6 \quad 50$ <br> 6 |  | 7 | $152.46 \cdot 50$ | 1442 |  |
| 9 | $21 \quad 634$ | ${ }^{50} 128$ |  |  | 1 | 1451 |  |
| 10 | 23 5 04 | 1233 |  | 10 | 1154 | $\begin{array}{cccc}15 & 0 & 0 \\ 15 & 8 & 06 \\ 15 & 8 \\ 1 & 6 & 4\end{array}$ |  |
|  | 5 5 |  |  | 11 | $\begin{array}{llll}2 & 0 & 51 \cdot 17\end{array}$ | 1516484 |  |
| 13 | (1) 27 | 734 |  | 1 | 2 | 1525 |  |
| 14 | $\begin{array}{lllll}0 & 30 & 59 & 97\end{array}$ | 5652 |  |  |  | 15 |  |
| 15 | 3258 | $751 \%$ |  | 15 | 2857 | 5 |  |
| 16 | 34 57 | 81847 | 108 | 16 | 21058 \% | 1557 |  |
|  | 3656 | 812940 8 8 |  | 17 | ${ }^{2} 1300.69$ | 16525 \% |  |
|  | - | 84031.4 851 8 | $107 \cdot 95$ 10747 | 18 | $\begin{array}{llll}2 & 15 & \mathbf{2} & \text { 28 } \\ \mathbf{0} & 17 & 4 & 56\end{array}$ | 161315 \% |  |
| 20 | $4252 \cdot 99$ |  |  |  | 21 <br> 217 <br> 219 | 1621 1628 |  |
|  | 04451.92 | $91245{ }^{\circ} 9$ |  | 21 | 219 221 | 628 |  |
|  |  | 2324.9 | 106 \%2 | 22 | $2 \begin{array}{lllllll}2 & 23 & 11 & 03\end{array}$ | 16 |  |
| 3 | 0  <br> 0 4849 <br> 0 50 | $9341 \%$ |  | 23 | $\begin{array}{llllllllll}2 & 2513 & 13\end{array}$ | $1651.16 \cdot 2$ |  |
|  |  |  |  | 24 | $22715 \quad 79$ | 1658380 |  |

## MBAN TIME.

## THE MOON'S RIGHT ASCENSION AND DECLINATION.

|  | Righ | Declination. | Dirf. Dec. <br> for 10 m, | Hour. | Right Ascensio | Declination. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | DAY 29. |  |  |  | - |  |
|  |  | $\begin{array}{lllll} N \\ N \end{array} 16$ | $72: 83$ | 0 | $\begin{array}{llll}3 & 1640 & 90\end{array}$ | . $1930 \quad 4 \cdot 4$ | $52 \cdot 08$ |
|  | $2918 \cdot 31$ | N.17.5850 | $72 \times 2$ | 1 | $\begin{array}{lllll}3 & 18 & 45 & 54\end{array}$ | $\begin{array}{llll}19 & 35 & 16 & 9 \\ 19 & 9\end{array}$ | $51 \cdot 17$ |
|  | ${ }_{2} 3120.91$ | $1713 \quad 7 \cdot 1$ | $71 \cdot 20$ | 2 | $\begin{array}{lllll}3 & 20 & 50 & 27\end{array}$ | $194023{ }^{\circ} 9$ | 50 |
|  | 23323.61 | $172014 \cdot 3$ | 70 | 3 | 3225508 | $194525 \cdot 4$ | $49 \cdot 33$ |
|  | $235 \quad 26 \cdot 39$ | $172716 \%$ | $69 \div 7$ | 4 | $3 \mathrm{3} 24 \begin{array}{llll} \\ 3\end{array}$ | $195021 \times 4$ | $48 \cdot 40$ |
|  | 2 $3729 \cdot 27$ | 173414.0 | $68 \cdot 72$ | 5 | $\begin{array}{lllll}3 & 27 & 4 & \\ 3 & 94\end{array}$ | 195511.8 | 47 |
|  | $23932 \cdot 24$ | $1741 \quad 6 \cdot 3$ | 67.90 | 6 | $\begin{array}{llll}3 & 29 & 10 & 00\end{array}$ | 195956.6 | 46 |
|  | \% $4135 \cdot 29$ | $174753 \cdot 7$ | $67^{\circ} 03$ |  | $\begin{array}{llll}3 & 31 & 15 & 13\end{array}$ | $\begin{array}{llll}20 & 4 & 35 & 8\end{array}$ | 45 |
|  | ${ }_{2} 4338.44$ | $175435{ }^{\circ} 9$ | $66 \cdot 22$ | 8 | $\begin{array}{llll}3 & 33 & 20 & 74\end{array}$ | 20 9 9 | 44 |
|  | $24541 \cdot 68$ | $\begin{array}{llll}18 & 1 & 13.2\end{array}$ | $65 \cdot 35$ | 9 | $\begin{array}{lllll}3 & 35 & 25 & 63\end{array}$ | $\begin{array}{llllll}20 & 13 & 37 & 3\end{array}$ | $43 \cdot 72$ |
|  | 24745.01 | $18 \quad 745 \cdot 3$ | 64 '50 | 10 | $\begin{array}{lllll}3 & 37 & 31 & 00\end{array}$ | 201759.6 | $42 \cdot 77$ |
|  | 24948.42 | $181412 \cdot 3$ | 63.63 | 11 | $\begin{array}{lllll}3 & 39 & 36 & 44\end{array}$ | 202216.2 | $41 \cdot 82$ |
|  | $25151 \cdot 93$ | $182034 \cdot 1$ | $62 \cdot 77$ | 12 | 34141.97 | 202627 | $40 \cdot 37$ |
|  | $2 \begin{array}{llllll}2 & 53 & 55 & 53\end{array}$ | $182650 \cdot 7$ | $61 \cdot 92$ | 13 | $\begin{array}{llllllllll}3 & 43 & 47 \\ 3 & 456\end{array}$ | 20 30 32 3 | $39 \cdot 90$ |
|  | $255 \quad 59 \cdot 21$ | 1833 | 61.02 | 14 |  | ${ }^{20} 034431.7$ | $38 \cdot 95$ |
|  | $258 \quad 2.99$ | $\begin{array}{llll}18 & 39 & 8 \cdot 3\end{array}$ | $60 \cdot 1$ | 15 | 3 47 58 | 2038 | 37 |
|  | $\begin{array}{ll}0 & 6.85\end{array}$ | $1845 \quad 9 \cdot 3$ | $59 \cdot 27$ | 16 | $\begin{array}{llll}3 & 50 & 4 & 78\end{array}$ | 204213 | $7 \cdot 02$ |
|  | $\begin{array}{lllll}3 & 2 & 10 & 80\end{array}$ | 1851 | 58.38 | 17 | $\begin{array}{lllll}3 & 52 & 10 \% 6\end{array}$ | $2045 \quad 55 \cdot 4$ | 36.07 |
|  | $\begin{array}{llllllll}3 & 4 & 14 & 84\end{array}$ | $185655 \cdot 2$ | 57.50 | 18 | $\begin{array}{llllllllllll}3 & 54 & 16 & 60 \\ 3 & 56 & 29 & 68\end{array}$ | 20 49 31 8 | 35 |
|  | $\begin{array}{lllll}3 & 6 & 18 & 97\end{array}$ | 19 2 $40 \cdot 2$ | 56.62 | 19 | $\begin{array}{lllll}3 & 56 & 22 & 62\end{array}$ | 2053 | 34•10 |
|  | $\begin{array}{llll}3 & 8 & 23 & 19\end{array}$ | $\begin{array}{llll}19 & 8 & 19 & \\ 19\end{array}$ | $55 \cdot 70$ | 20 |  | 205626 | $33 \cdot 13$ |
|  | $\begin{array}{lllll}3 & 10 & 27 & 49\end{array}$ | $191354 \cdot 1$ | 54 | 21 | $\begin{array}{llll}4 & 0 & 34 & 85\end{array}$ | 205945 | $32 \cdot 15$ |
|  |  | 191923.0 | $53 \cdot 90$ | 22 | 4.241 .06 | 21258 | $\cdot 18$ |
|  | $\begin{array}{lllll}3 & 14 & 36 & 35\end{array}$ | $192446 \cdot 4$ | $53 \cdot 00$ | 23 | 4.653 .67 | $\begin{array}{lll}21 & 6 & 5\end{array}$ | $0 \cdot 18$ |
|  | $\begin{array}{lllll}3 & 16 \quad 40 \cdot 90\end{array}$ | N. $1930 \quad 4 \cdot 4$ |  | 24 | $4 \quad 6 \quad 53 \quad 67$ | N. 21 |  |

## PHASES OF THE MOON.



[^2]
## MEAN TIME.

|  | THE SUN'S <br> Apparent |  | Logarithm of the Radius Vector of the Earth. | THE MOON'S |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Longitude. | Latitude. |  | Semidiameter, |  | Horizontal Parallax, |  |
|  | Noo | Noon. | Noon. | Noon. | Midnight. | Noon. | , |
| 1 | $188^{\circ} 23^{\prime} 300^{\prime \prime} 7$ | N. $0 \cdot 23$ | 0 0001129 | $14^{\prime} 44^{\prime \prime} \cdot 9$ | $14^{\prime} 44^{\prime \prime} \cdot 6$ | $\frac{1}{54} \quad 7^{\prime \prime} \cdot 4$ |  |
|  |  | N. $0 \cdot 10$ | 9.9999899 | $1445 \cdot 0$ | 14454 | $\begin{array}{lll}54 & 7 \\ 54 & 7 \\ 54\end{array}$ | 54 6 <br> 54 10 <br> 18  |
| 3 | $1902145 \cdot 4$ | S. 0.04 | $9 \cdot 9998672$ | 14 47'5 | 1449 | $\begin{array}{llll}54 & 16.9\end{array}$ | $5410 \%$ $5425 \%$ |
| 4 | $\begin{array}{lllll}191 & 20 & 56 & 3\end{array}$ | $0 \cdot 16$ | 9:9997446 | $1452 \cdot 8$ | $1456 \cdot 6$ | $5436 \cdot 5$ | $5450 \cdot 1$ |
| 5 | $\begin{array}{llll}192 & 20 & 9 \cdot 5\end{array}$ | 0.26 | $9 \cdot 9996219$ | $15 \quad 0 \cdot 9$ | 1560 | $55 \quad 6 \cdot 2$ | 55 |
| 6 | 1931925 \% | $0 \cdot 34$ | 9'9994991 | 15117 | $\begin{array}{lll}15 & 17 & \end{array}$ | 55 $45 \cdot 5$ |  |
| 7 | $\begin{array}{lllll}194 & 18 & 42 \\ 19\end{array}$ | $0 \cdot 39$ | 9 -9993762 | $15 \quad 24 \cdot 5$ | $1531 \cdot 5$ | $5632 \cdot 5$ | 5658.8 |
| 8 | $\begin{array}{llll}195 & 18 & 2 \\ 19 & 9\end{array}$ | $0 \cdot 41$ | 9.9992530 | $1538 \cdot 7$ | $1546 \cdot 1$ | $5724 \cdot 9$ | 5752.0 |
| 9 | $1961725 \cdot 2$ | $0 \cdot 40$ | 9.9991296 | $15 \quad 53 \cdot 4$ | $16 \quad 0 \cdot 5$ | 5818 | $5844 \%$ |
| 10 | $\begin{array}{lllll}197 & 16 & 49\end{array} 8$ | $0 \cdot 36$ | 9 -9990058 | $16 \quad 7 \cdot 1$ | $16 \quad 13: 2$ |  |  |
| 11 | $\begin{array}{llllll}198 & 16 & 16 & 5\end{array}$ | 0-29 | 9 9 9988816 | 1618.6 | 16 <br> 1623 <br> 16 | $\begin{array}{ll}59 & 9 \cdot 1 \\ 59 & 51 \cdot 3\end{array}$ | $\begin{array}{llr}59 & 31 \\ 60 & 815 \\ 60 & 8.1\end{array}$ |
| 12 | 19915.45 :2 | $0 \cdot 20$ | 9.9987571 | $16 \quad 26 \cdot 7$ | $1629 \cdot 3$ | 60210 | 60 30 3 |
| 13 | $\begin{array}{llllll}200 \\ 201 & 15 & 15 & 9\end{array}$ | S. $0 \cdot 09$ | 9.9986324 | 16307 | $1631 \cdot 1$ | $6035 \cdot 6$ | 6037.0 |
| 4 | $\begin{array}{lllll}201 & 14 & 48 & 6 \\ 202 & 14 & 23 & \end{array}$ | N. $0 \cdot 03$ 0.16 | 9.9985074 | $1630 \cdot 3$ | 1628.6 | $60 \quad 34 \cdot 3$ | $60{ }^{\circ} 8^{\circ}$ |
| 15 | 2021423.2 | $0 \cdot 16$ | $9 \cdot 9983823$ | $1626 \cdot 1$ | $1622 \cdot 6$ | $60 \quad 18 \quad 4$ | $60 \quad 5$ \% |
| 16 | $\begin{array}{llllll}203 & 13 & 59 & 6\end{array}$ | $0 \cdot 29$ | $9 \cdot 9982571$ | $1618 \cdot 4$ | $16 \quad 13$ :8 | $5950 \%$ |  |
| 17 | $\begin{array}{lllllll}204 & 13 & 37 & 8\end{array}$ | $0 \cdot 41$ | $9 \cdot 9981321$ | $\begin{array}{llll}16 & 8 & 8\end{array}$ | 16 3 <br> 16  | 59 15\% |  |
| 18 | $\begin{array}{llllll}205 & 13 & 17 & 8\end{array}$ | $0 \cdot 51$ | $9 \cdot 9980073$ | $15 \quad 58$ | $15 \quad 52 \cdot 7$ | 5836 | $\begin{array}{lll}58 & 56 \% \\ 58 & 16.2\end{array}$ |
| 19 | 20612594 | $0 \cdot 60$ | 9'9978830 | $1547 \cdot 3$ | 15419 | $5756 \cdot 2$ |  |
| 20 |  | 0.66 | 9.9977592 | $1536 \cdot 6$ | 15 | $5717 \%$ | $\begin{aligned} & 5736 \% \\ & 56 \quad 58.6 \end{aligned}$ |
| 21 | $20812 \quad 277$ | 0.69 | 9.9976362 | $15 \quad 26 \cdot 7$ | $\begin{array}{ll}15 & 22\end{array}$ | $5717 \cdot 2$ $5640 \cdot 7$ | $\begin{array}{ll} 56 & 58.6 \\ 56 & 23.5 \end{array}$ |
| 22 | $20912 \quad 14 \cdot 4$ | $0 \cdot 70$ | 9.9975142 | $1517 \%$ |  |  |  |
| 23 | $\begin{array}{llll}210 & 12 & 2 & 9\end{array}$ | 0.67 | 9*9973932 | $\begin{array}{rrrr}15 & 17 & 6 \\ 15 & 9 & 4\end{array}$ | $\begin{array}{rrrr}15 & 13 & 4 \\ 15 & 5 & 6\end{array}$ |  | $\begin{array}{lll}55 & 51 & 8 \\ 55 & 23 & 3 \\ 54 & 58\end{array}$ |
| 24 | 2111153.2 | 0.61 | 9.9972735 | $\begin{array}{ll}15 & 2.0\end{array}$ | 14 58 | 55 5 5 $170 \cdot 1$ | 55 23  <br> 54 58  |
| 25 | $2121145 \cdot 3$ | $0 \cdot 53$ | 9*9971550 | $1455 \cdot 7$ | 1453.0 |  |  |
| 26 | $213: 1139.3$ | 0.42 | $9 \cdot 9970378$ | $1450 \cdot 4$ | 14 <br> 14 <br> 14 <br> 14 | 54 46.9 <br> 54 27 | $\begin{array}{lll}54 & 36 \cdot 8 \\ 54 & 19 \cdot 4\end{array}$ |
| 27 | $2141135 \cdot 2$ | $0 \cdot 30$ | $9 \cdot 9969222$ | $1446 \cdot 3$ | $1444 \cdot 8$ | $\begin{array}{lll}54 & 12.6\end{array}$ | $\begin{array}{cc}54 & 19.4 \\ 54 & 6.9\end{array}$ |
| 28 | $21511133 \cdot 1$ | $0 \cdot 16$ | 9'9968080 |  |  |  |  |
| 29 | 2161133.0 | N. $0 \cdot 02$ | $9 \cdot 9966952$ | $1442 \%$ | 14442.8 14 | $\begin{array}{ccc}54 & 2 & 6 \\ 53 & 58 & 5\end{array}$ |  |
| 30 31 | $\begin{array}{lllllll}217 & 11 & 34 & 8 \\ 218 & 11 & 38 & 7\end{array}$ | S. $0 \cdot 11$ | 9.9965840 | 1443.2 | 14 <br> 14 <br> 14 <br> 14.4 | $\begin{array}{ll}53 & 58 \\ 54 & 1.5 \\ 54 & 11\end{array}$ | $\begin{array}{ccc}53 & 59 \\ 54 & \\ 54 & 5 \\ 54 \\ 54 & 4\end{array}$ |
| 31 | $218 \quad 11387$ | $0 \cdot 23$ | 9'9964741 | $1446 \cdot 1$ | 1448 | $54.11 \cdot 7$ | 54 20 <br> 20  |
| 32 | $2191144 \times 8$ | S. $0 \cdot 33$ | 9:9963655 | 1451 3 | $14.54 * 9$ | 5431.0 | $5444 \cdot 1$ |

## MEAN TIME.



## MEAN TIME.

THE MOON'S RIGH' ASCENSION AND DECLINATION.

| Hour. | Right Ascension. | Declination. | $\left\|\begin{array}{c\|} \text { Diff. Dec. } \\ \text { for } 10 \mathrm{Om} \end{array}\right\|$ | Hour. | Right Ascension. | Declination. | Difl. Dee for lyan |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | W | $D A Y$ |  |  |  | AY 11. |  |
|  | $\mathrm{h}^{\mathrm{h}} 50 \mathrm{~m}$ | N ${ }^{\circ} 50^{\prime}-33^{\prime \prime} \cdot 6$ | 21.98 |  |  |  |  |
| 0 |  | 15033.6 | 127.97 | 0 |  | 8 29 <br> 8 42 | $125 \cdot 15$ |
| 1 | $\begin{array}{lll}10 & 53 & 1 \\ 10 & 80\end{array}$ | $13745 \cdot 8$ | $128 \cdot 22$ | 1 | $\begin{array}{llll}12 & 39 & 8 & 89\end{array}$ | 8 42 <br> 8 22 | 73 |
| 2 | $\begin{array}{llllllllll}10 & 5 & 5 & 10 & 03\end{array}$ | $12456 \cdot 5$ | $128 \cdot 47$ | 2 | $124126 \cdot 93$ | 85451.3 | 24.28 |
| 3 | $10 \quad 57 \quad 18 \cdot 41$ | $112 \quad 5 \cdot 7$ | 128 | 3 | 124345 '50 | $\begin{array}{llll}9 & 717 & 0\end{array}$ | $123 \cdot 83$ |
| 4 | $10 \quad 59$ 26.93 |  | 128 's8 | $t$ | $12464 \cdot 34$ | $91940 \cdot 0$ | $123 \cdot 87$ |
| 5 | $\begin{array}{llll}11 & 1 & 35 & 61\end{array}$ | 0-46 $20 \cdot 3$ | $129 \cdot 10$ | 5 | $12.48 \quad 23 \cdot 46$ | 932002 | 12290 |
| 6 | $\begin{array}{lllll}11 & 3 & 44 & 43\end{array}$ | 033257 | 129 '28 | 6 | $125042 \cdot 85$ | 944176 | 12238 |
| 7 | $\begin{array}{lllll}11 & 5 & 53 & 41\end{array}$ | $02030 \cdot 0$ | 129.47 | 7 | 1253 2.52 | $9 \begin{array}{llllll}9 & 56 & 31\end{array} 9$ | 87 |
| 8 | 11.825 | N. $0 \quad 7 \begin{array}{ll} & 33\end{array}$ | 129.63 | 8 | 1255 | $\begin{array}{llll}10 & 8 & 43\end{array}$ | $121 \cdot 32$ |
| 9 | $\begin{array}{lllll}11 & 10 & 11 & 85\end{array}$ | S. $0 \quad 5 \quad 2 \quad 24 \cdot 6$ | $129 \cdot 78$ | 9 | $125742 \cdot 69$ | 102051.0 | $120 \%$ |
| 10 | 111221.31 | $\begin{array}{llll}0 & 18 & 23 & 3\end{array}$ | 129.93 | 10 | $\begin{array}{llll}13 & 0 & 3 & 20\end{array}$ | 10.32 .557 | $120 \cdot 22$ |
| 11 | $111430 \cdot 93$ | 03122.9 | 13 | 11 | $\begin{array}{lll}13 & 2 & 23\end{array} 98$ | $104457{ }^{\prime} 0$ | 119.63 |
| 12 | $\begin{array}{llllllllll}11 & 16 & 40 \cdot 73\end{array}$ | 0 $44 \quad 23 \cdot$ | $130 \cdot 1$ | 12 | 13 \& $45 \cdot 05$ | $10 \begin{array}{llll}10 & 56 & 54\end{array}$ | 119 |
| 13 | $\begin{array}{lllllllllllllllllll}11 & 18 & 50 & 70\end{array}$ | 0 $57124 \cdot 2$ | 130 | 13 | $\begin{array}{lll}13 & 7 & 6\end{array}$ | 11.889 | 118 \% 42 |
| 14 | $\begin{array}{llll}11 & 21 & 0 & 84\end{array}$ | $11025 \cdot 9$ | $130 \cdot 37$ | 14 | $\begin{array}{llll}13 & 9 & 28 & 04\end{array}$ | $\begin{array}{llll}11 & 20 & 39 & 5\end{array}$ | $117 \%$ |
| 15 |  | $12328 \cdot 1$ | $130 \cdot 45$ | 15 | $\begin{array}{lllll}13 & 11 & 49 & 96\end{array}$ | $1113226 \cdot 1$ | 117.13 |
| 16 | 11251167 | $13630 \cdot 8$ | $130 \cdot 52$ | 16 |  | 111448 | 116.15 |
| 17 | $112732 \cdot 36$ | $14933 \times 9$ | 130 | 17 | $\begin{array}{llll}13 & 16 & 34 & 67\end{array}$ | $\begin{array}{llll}11 & 55 & 47 \\ 12 & 7\end{array}$ | $11:$ |
| 18 | $112943 \cdot 23$ | $2 \quad 237.3$ | 130 | 18 | $\begin{array}{llll}13 & 18 & 57 & 75\end{array}$ | $12 \quad 722 \cdot 3$ | 115 |
| 19 | 113154.30 | $21541 \cdot 0$ | 13 | 19 | 13212052 | 121852 | 114.35 |
| 20 | $\begin{array}{llllll}11 & 34 & 5 & 56\end{array}$ | $22844 \cdot 8$ | 130 | 20 |  | 123018 '9 | 11368 |
| 21 | $113617 \cdot 02$ | $24148 \cdot 7$ | $130 \cdot 65$ | 21 | $\begin{array}{llll}13 & 26 & 7 & 73\end{array}$ | $12.4140{ }^{12}$ | 122 \% 7 |
| 22 |  | $25452 \cdot 6$ | $130 \cdot 63$ | 22 | $\begin{array}{lllll}13 & 28 & 31 & 46\end{array}$ | $125257{ }^{12} 9$ | $112 \cdot 12$ |
| 23 | $\begin{array}{rl} 1140 & 40 \cdot 53 \\ & \text { THURS } \end{array}$ | $\begin{array}{lll} \text { S. } 3 & 756 \cdot 4 \\ \text { SDAY } & 10 . \end{array}$ | $130 \% 6$ | 23 | $\begin{array}{r} 133055 \\ 8 A T \end{array}$ | $\begin{aligned} & \text { S. } 13 \text { \& } 10 \% \\ & D A Y \text {. } \end{aligned}$ | 1.33 |
| 0 | $11.4252 \cdot 60$ | S. 32100 | 3057 | 0 | $\begin{array}{lll}13 & 33 & 20 \\ 1\end{array}$ | S. 13 15 $1518 \cdot 6$ | 110 53 |
| 1 | $\begin{array}{llll}11 & 45 & 4 & 87\end{array}$ | $\begin{array}{llll}3 & 34 & 3 & 4\end{array}$ | $130 \cdot 52$ | 1 | $\begin{array}{lllll}13 & 35 & 45 & 01\end{array}$ | $132621 \cdot 8$ | 10978 |
| 2 | $114717 \cdot 35$ | $\begin{array}{llll}3 & 47 & 6 \cdot 5\end{array}$ | $130 \cdot 43$ | 2 | $\begin{array}{lllll}13 & 38 & 10 & 11\end{array}$ | $\begin{array}{llll}13 & 37 & 20 & 1 \\ 13 & 48 & 13\end{array}$ | 108 '897 |
| 3 | $114930 \cdot 0$ |  | $130 \cdot 35$ | 3 | $\begin{array}{llllllll}13 & 40 & 35 & 49\end{array}$ | $\begin{array}{lllll}13 & 48 & 13 & 3\end{array}$ | 93 |
| 4 | 1115142.96 | 41311.2 | $130 \cdot 27$ | 4 | $\begin{array}{lll}13 & 43 & 1 \cdot 16\end{array}$ | 13.5914 | 17 |
| 5 | $1115356 \cdot 09$ | $42612 \cdot 8$ | $130 \cdot 13$ | 5 | $\begin{array}{llll}13 & 45 & 27 & 11\end{array}$ | $14 \quad 984{ }^{14} 5$ | 106.88 |
| 6 | 11156 | $43913 \cdot 6$ | $130 \cdot 03$ | 6 | $1347 \quad 53 \cdot 35$ | 142022 | 105 288 |
|  | $11 \begin{array}{llll}11 & 58 & 23 & 01\end{array}$ | $45213 \cdot 8$ | $129 \cdot 87$ | 7 | $\begin{array}{llll}13 & 50 & 19 & 88\end{array}$ | $1430 \quad 54 \cdot 5$ | $104 \%$ |
| 8 | $12.0) 3682$ | $\begin{array}{llllll}5 & 5 & 13 & 0\end{array}$ | 12972 | 8 | $13 \quad 524670$ | 144181.3 |  |
| 9 | $12 \sim 50 \cdot 85$ | $\begin{array}{lllllll}5 & 18 & 11 & 3\end{array}$ | $129 \cdot 55$ | 9 | $\begin{array}{lllllllll}13 & 55 & 13 & 79\end{array}$ | 145142.6 | 102 \%8 |
| 10 | 12 llr | $5{ }_{5}^{5} 3188$ | $129 \cdot 37$ | 10 | $13 \quad 5741 \cdot 17$ | $\begin{array}{llll}15 & 1 & 58\end{array}$ | 101.63 |
| 11 | $12 \quad 7 \quad 19 \quad 62$ | $\begin{array}{lllll} & 5 & 44 & 4 & 8\end{array}$ | $129 \cdot 17$ | 11 | 14 0 8 | $\begin{array}{llll}15 & 12 & 7 & 9\end{array}$ | $100 \cdot 65$ |
| 12 | 129834.36 | 6-5 566 | $128 \cdot 95$ | 12 | $14 \quad 2 \quad 36 \cdot 77$ | 152211.8 | $9 \cdot 65$ |
| 13 | 121149.34 | $1 \quad 6 \quad 9 \quad 953 \cdot 5$ | $128 \cdot 7$ | 13 | $\begin{array}{lll}14 & 5 & +\cdot 99\end{array}$ | 15329.7 | 98.03 |
|  | 1214485 | $5 \quad 62245 \cdot 8$ | 128:47 | 14 | $\begin{array}{llll}14 & 7 & 33\end{array} 19$ | $1542 \quad 1.6$ | 7.68 |
| 15 | $121620 \cdot 02$ | - $63536 \%$ | 128 20 | 15 | $\begin{array}{llll}14 & 10 & 2 & 26\end{array}$ | $\begin{array}{llll}15 & 51 & 47 & 3\end{array}$ | 96\% |
| 16 | $\begin{array}{lllllllllll}12 & 18 & 35\end{array}$ | $3 \quad 6 \begin{array}{llllll} & 48 & 25 & 5\end{array}$ | $127 \cdot 93$ | 16 | 14123131 | $\begin{array}{llll}16 & 1 & 26 & 8\end{array}$ | 5 \% |
| 17 | $12 \quad 2051.69$ | $) 7 \begin{array}{lllll}7 & 1 & 13 & 4\end{array}$ | $127 \cdot 63$ | 17 | $\begin{array}{lllll}14 & 15 & 0 & 63\end{array}$ | $\begin{array}{llll}16 & 10 & 59 & 9\end{array}$ | 94 |
| 18 | $12 \quad 23 \quad 7 \quad 90$ | - 7131359.2 | $127 \cdot 33$ | 18 | $141730-22$ | $162026 \cdot 6$ | 93 |
| 19 | $122594 \cdot 37$ | $772643 \cdot 2$ | 127.00 | 19 | 1420007 | $16 \quad 2946 \cdot 8$ | ${ }^{2}$ |
| 2 | 122741.09 | $) \quad 739925$ | $126 \cdot 67$ | 20 | $\begin{array}{llll}14 & 22 & 30 & \cdot 19\end{array}$ | 1639 | 115 |
| 21 | $12.2958 \cdot 07$ | 7 7 725 | $126 \cdot 32$ | 21 | $\begin{array}{llll}14 & 25 & 0 & 57\end{array}$ | 16487 | 90.08 |
| 22 | $123215 \cdot 32$ | $2 \begin{array}{lllll} & 8 & 4 & 43 & 1\end{array}$ | $125 \cdot 93$ | 22 | 142731 *21 | $16 \quad 57 \quad 73$ | 887 |
| 23 | $123432 \cdot 82$ | $\begin{array}{lllllllll} & 8 & 17 & 18 & 7\end{array}$ | 125 \% 5 | 23 | $1430 \quad 2 \cdot 10$ | $\begin{array}{llll}17 & 6 & 0 & 5\end{array}$ | \% |
| 2 | 12 36 50  | S. 8 8 295152.0 |  | 24 | 143233 | S. 171446 |  |

## MEAN TIME.

## THE MOON'S RIGHT ASCENSION AND DECLINATION.

| How | Right Ascensio | Declination. | Dec. <br> $10^{\mathrm{m}}$. | Hour. | Right Ascension. | Declination. | Dift. Dec. for $10^{\mathrm{m}}$. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | SUN1 | 3. |  |  | TU | SDAY 15. |  |
|  |  |  |  |  |  |  |  |
| 0 | $14.3233-25$ | S. 171446 | $86 \cdot 58$ | 0 | $1636 \quad 58 \cdot 92$ | S. 2136 | $18 \cdot 12$ |
| 1 | $14.35 \quad 4.65$ | $172325{ }^{\circ} 9$ | $85 \cdot 35$ | 1 | $163936 \cdot 46$ | $213832 \cdot 4$ | $16 \cdot 55$ |
| 2 | $143736 \cdot 30$ | $173158{ }^{17}$ | 84 113 | 2 | $1642 \quad 13 \cdot 98$ | 2140117 | 14 |
| 3 | $1440 \quad 8 \cdot 19$ | $174022 \cdot 8$ | $82 \cdot 93$ | 3 | $1644 \quad 51 \cdot 45$ | $214141 \%$ | $13 \cdot 45$ |
| 4 | $144240 \cdot 32$ | $174840 \cdot 4$ | $81 \% 0$ | 4 | $164728 \cdot 88$ | 2143 | 11 '87 |
| 5 |  | $175650 \%$ | $80 \cdot 4$ | 5 | $16 \quad 50 \quad 6 \cdot 26$ | $\begin{array}{llllll}21 & 44 & 13 & 5\end{array}$ | $10 \cdot 32$ |
| 6 | $144745 \cdot 30$ | 18 4 533 '3 | 79 | 6 | $16 \quad 5243 \cdot 58$ |  | 8 -77 |
| 7 | $\begin{array}{llllllll}14 & 50 & 18 & 13\end{array}$ | 181248 | $77 \cdot 93$ | 7 | $16 \quad 55 \quad 20$ '83 | $21468 \%$ | 7.22 |
| 8 | $145251 \cdot 19$ | $\begin{array}{llll}18 & 20 & 36 \cdot 1\end{array}$ | $76 \cdot 65$ | 8 | 165758 *00 | 2146513 | $5 \cdot 65$ |
| 9 | $1455 \cdot 24 \cdot 48$ | $18 \times 8 \quad 16 \cdot 0$ | $75 \cdot 37$ | 9 | $17{ }^{17}$ | $214725 \cdot 2$ | $4 \cdot 12$ |
| 10 | 145757.97 |  | $74 \cdot 05$ | 10 | $\begin{array}{llll}17 & 3 & 12 & 11\end{array}$ | 214749.9 | $2 \cdot 55$ |
| 11 | $\begin{array}{lllllll}15 & 0 & 31\end{array} 69$ | $\begin{array}{lllll}18 & 43 & 12 \cdot 5\end{array}$ | $72 \cdot 73$ | 11 | $\begin{array}{llllll}17 & 5 & 49 & 02\end{array}$ | $2148 \quad 5 \cdot 2$ | $1 \cdot 02$ |
| 12 | $\begin{array}{llll}15 & 3 & 5 & 60\end{array}$ | $185028{ }^{18} 9$ | $71 \cdot 42$ | 12 | $\begin{array}{llll}17 & 8 & 25 & 84\end{array}$ | 2148113 | 0.53 |
| 13 | $\begin{array}{llll}15 & 5 & 39\end{array} \cdot 73$ | $185737{ }^{18}$ | $70 \cdot 7$ | 13 | $\begin{array}{lll}17 & 11 & 2 \cdot 55\end{array}$ | 2148 | 2.07 |
| 14 | $\begin{array}{llll}15 & 8 & 14 * 05\end{array}$ | $\begin{array}{llll}19 & 4 & 37 & 8\end{array}$ | $68 \cdot 72$ | 14 | $\left.\begin{array}{llllll}17 & 13 & 39\end{array}\right) 14$ | $214755 \cdot 7$ | 3.60 |
| 15 | $15 \quad 1048 \cdot 57$ | $1911 \begin{array}{ll}19 & 1\end{array}$ | 67•35 | 15 |  | $214734 \cdot 1$ | 5.13 |
| 16 | $1513 \quad 23 \quad 28$ | $191814 \cdot 2$ | $65 \cdot 98$ | 16 | 1717 51 <br> 17 91 | $2147 \quad 3 \cdot 3$ | \%7 |
| 17 | $\begin{array}{llllllllll}15 & 15 & 58 & 17\end{array}$ | $192450 \cdot 1$ | $64 \cdot 60$ | 17 | $172128 \cdot 15$ | $2146 \quad 23 \cdot 3$ | . 18 |
| 18 |  | $193117{ }^{19}$ | $63 \cdot 20$ | 18 | $\begin{array}{llll}17 & 24 & 4.21\end{array}$ | $214534 \cdot 2$ | 9:70 |
| 19 | 15.518 | $193736 \cdot 9$ | $61 \cdot 80$ | 19 | $\begin{array}{ll}17 & 2640 \cdot 12\end{array}$ | $214436{ }^{\circ} 0$ | $11 \cdot 22$ |
| 20 | $15 \quad 23 \quad 43 \cdot 90$ | $194347 \cdot 7$ | 60\% 90 | 20 | $\begin{array}{llllllllllll}17 & 29 & 15 & 87\end{array}$ | $214328 \cdot 7$ | 12 '\%2 |
| 21 | $\begin{array}{lllllll}15 & 26 & 19 & 47\end{array}$ | $194950 \cdot 1$ | $58 \cdot 95$ | 21 | $173151 \cdot 47$ | $214212 \times$ | $14-22$ |
| 92 | $\begin{array}{llllllll}15 & 28 & 5 & \\ 15 & 31 & 31\end{array}$ | $19 \quad 5543 \cdot 8$ | $57 \cdot 53$ | 22 | $173426 \cdot 90$ | $21 \quad 4047 \cdot 1$ | $15 \% 3$ |
| 23 | $\begin{gathered} 153131 \cdot 09 \\ \text { MOND } \end{gathered}$ | $\begin{aligned} & \text { S. } 20129 \quad 0 \\ & \text { AY } 14 \text {. } \end{aligned}$ | -56-10 | 23 | $\begin{array}{r} 1737 \quad 2 \cdot 15 \\ \text { WEDNE } \end{array}$ | $\begin{aligned} & 5.213912 \cdot 7 \\ & \text { SDAY } 16 \text {. } \end{aligned}$ | 17 |
| 0 | $1534 \quad 712$ | S. $20 \begin{array}{llll}7 & 5 & 6\end{array}$ | $54 \cdot 63$ | 0 | $173937 \cdot 22$ | S. $2137{ }^{1} 10 \cdot 5$ | 18.70 |
| 1 | $\begin{array}{lllll}15 & 36 & 43 & 30\end{array}$ | $20 \begin{array}{llll} & 12 & 33 & 4\end{array}$ | $53 \cdot 18$ | 1 | 17 42 12 •10 | $213537 \cdot 3$ | $20 \cdot 17$ |
| 9 | $\begin{array}{llll}15 & 39 & 19 & 60\end{array}$ | $20 \quad 17 \quad 52 \cdot 5$ | -72 | 2 | $174446 \cdot 80$ | $213336 \cdot 3$ | $21 \cdot 65$ |
| 3 | 154156.04 | $20 \quad 23 \quad 2 \cdot 8$ | -25 | 3 | $174721 \cdot 29$ | $213126 \cdot 4$ | $23 \cdot 10$ |
| 4 |  | 202843 | $48 \cdot 77$ | 4 | $17 \begin{array}{lllll}17 & 495\end{array}$ | 212978 | 24 :55 |
| 5 | $\begin{array}{lllllllllllllllll}15 & 47 & 9 & 26\end{array}$ | 20 32 56 <br>    <br>  9  | $47 \cdot 27$ | 5 | $\begin{array}{lllll}17 & 52 & 29 & 66\end{array}$ | $212640 \cdot 5$ | $26 \cdot 02$ |
| 6 | $\begin{array}{lllll}15 & 49 & 46 & 04\end{array}$ | $203740 \cdot 5$ | 45 | 6 | $\begin{array}{lllll}17 & 55 & 3 & 52\end{array}$ | $\begin{array}{lll}21 & 24 & 4 \cdot 4\end{array}$ | ${ }^{7} \cdot 7 \times 4$ |
| 7 | $15 \quad 522292$ | 204215 | $4{ }^{4} \cdot 28$ | 7 | $175737 \cdot 16$ | 212119.8 | $28 \cdot 88$ |
| 8 | 1554459.90 | $20 \quad 46$ | $42 \cdot 77$ | 8 | $\begin{array}{llll}18 & 0 & 10 & 58\end{array}$ | $211826 \cdot 5$ | $30 \cdot 30$ |
| 9 | $15 \quad 5736 \cdot 96$ | $20) 5057 \cdot 5$ | 41 '27 | 9 | $\begin{array}{llll}18 & 2 & 43 & 77\end{array}$ | $211594 \cdot 7$ | $31 \% 2$ |
| 10 | $\begin{array}{llll}16 & 0 & 14 & 11\end{array}$ | 2055 | $39 \cdot 75$ | 10 | $\begin{array}{lllll}18 & 5 & 16 & 72\end{array}$ | 211214.4 | $33 \cdot 12$ |
| 11 | $\begin{array}{llllll}16 & 2 & 51 & 34\end{array}$ | $2059 \quad 3.6$ | $38 \cdot 22$ | 11 | $\begin{array}{lllll}18 & 7 & 49 & 43\end{array}$ | $21855 \cdot 7$ | 34. |
| 12 | $\begin{array}{llll}16 & 5 & 28 & 62\end{array}$ | $21 \quad 2 \quad 52.9$ | $36 \cdot 70$ | 12 | $\begin{array}{lllllllllllllllll}18 & 10 & 21 & 89\end{array}$ | $21 \quad 5 \quad 28.6$ | $35 \cdot 90$ |
| 13 | 16 8 5  <br> 168    | $21633 \cdot 1$ | $35 \cdot 15$ | 13 | $18 \quad 1254 \cdot 10$ | 211153 | $37 \cdot 28$ |
| 14 | $16 \quad 1043 \cdot 38$ | $2110 \quad 4 \cdot 0$ | $33 \cdot 63$ | 14 | $18 \quad 15 \quad 26 \cdot 06$ | $\begin{array}{llll}20 & 58 & 9 & 5\end{array}$ | 38.65 |
| 15 | $\begin{array}{lllll}16 & 13 & 20 & -84\end{array}$ | $21 \quad 13 \quad 25 \cdot 8$ | 32 | 15 | $\begin{array}{llllllllll}18 & 17 & 57 & 75\end{array}$ | 205417.6 | $40 \cdot 0$ |
| 16 | $\begin{array}{llllll}16 & 15 & 58 & 34\end{array}$ | $211638 \cdot 3$ | 30-53 | 16 | 18 20 <br> 18 29 | $2050 \quad 17 \%$ | $41 \times 37$ |
| 17 |  | 2119415 | $29 \cdot 00$ | 17 | $\begin{array}{lll}18 & 23 & 0\end{array}$ | $20 \quad 46 \quad 9 \cdot 4$ | $12 \cdot 68$ |
| 18 | $\begin{array}{lllllll}16 & 21 & 13 & 42\end{array}$ | $212235 \cdot 5$ | $27 \cdot 45$ | 18 |  | 204153 | $44 \cdot 03$ |
| 19 | $16 \quad 23 \quad 51 \cdot 00$ | $\begin{array}{llllll}21 & 2 & 2 & 20 & 2\end{array}$ | $25 \cdot 88$ | 19 | $\begin{array}{lll}18 & 28 & 1\end{array} 185$ | 20 37 29 | $45 \cdot 33$ |
| 20 | $\begin{array}{lllll}16 & 26 & 28 & 59\end{array}$ | $\begin{array}{lllll}21 & 27 & 55\end{array}$ | $24 \cdot 35$ | 20 | $\begin{array}{llll}18 & 30 & 32 & 19\end{array}$ | $203257 \cdot 1$ | $46 \cdot 65$ |
| 21 | $\begin{array}{llll}16 & 29 & 6 \cdot 18\end{array}$ | 2130216 | $22 \cdot 78$ | 21 | $\begin{array}{llll}18 & 33 & 2 & 24\end{array}$ | 202817.2 | $47 \cdot 95$ |
| 92 |  | $\begin{array}{llll}21 & 32 & 38.3 \\ 21 & 34 & 45\end{array}$ | $21 \cdot 3$ | 22 | $\begin{array}{llll}18 & 35 & 32 & 00 \\ 18 & 38 & 1 & 17\end{array}$ | $\begin{array}{llll}20 & 23 & 29 & 5\end{array}$ | $49 \times 23$ |
| 23 |  | 2134457 | 19.67 | 23 | $\begin{array}{llll}18 & 38 & 1 & 47\end{array}$ | $20 \quad 18 \quad 34 \cdot 1$ | $50 \cdot 52$ |
| 24 | 16365892 | S. $213643 \%$ |  | 24 | $1840 \quad 30 \quad 64$ | S. $20 \begin{array}{llll} & 13 & 31 & 0\end{array}$ |  |

MEAN TIME.

## THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Hour. | Right Ascension. | Declination. | $\begin{array}{\|l} \text { Dir. Dee. } \\ \text { for 10 } \end{array}$ | Henr. | Right Ascension. | Declination. | $\begin{array}{\|l\|l} \text { Difr. De De. } \\ \text { for } 10^{\mathrm{n}} \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | TUES | DAY 29. |  |  | THUR | AY 31. |  |
| 0 |  |  | $11 \cdot 73$ |  |  | - ${ }^{\text {a }}$ |  |
| 0 | $\begin{array}{llll}4 & 42 & 39 \\ 4 & 44 & 47.02\end{array}$ | $213756 \cdot 1$ | 1173 $10 \% 2$ | 0 | $624 \quad 8: 22$ | 0 39 23 4 | $36 \cdot 25$ |
| 2 | $44654 \cdot 13$ | $213900 \cdot 4$ | $9 \% 0$ | 2 | 6 28 19 |  |  |
| 3 | $4.49 \quad 1 \cdot 26$ | 213958.6 | $8 \cdot 70$ | 3 | $63025 \cdot 72$ | $\begin{array}{llllllllllll}20 & 28 & 13 & 6\end{array}$ | $39 \cdot 13$ |
| 4 | 4 51 8 40 | $214050 \cdot 8$ | $7 \cdot 68$ | 4 | $63231 \cdot 43$ | 202418 | $40 \cdot 07$ |
| 5 |  | 214136.9 | 6.67 | 5 | $63437 \cdot 07$ | $202018 \cdot 4$ | 3 |
| 6 | $\begin{array}{llllll}4 & 5 & 5 & 22 & 73\end{array}$ | $214216 \%$ | $5 \cdot 67$ | 6 | $63642 \cdot 65$ | 201612 | 41.98 |
| 7 | 45729.90 | $214250 \cdot 9$ | $4 \cdot 65$ | 7 | $\begin{array}{lllllllllll}6 & 38 & 48\end{array}$ | $\begin{array}{llll}20 & 12 & 0 & 3\end{array}$ | '92 |
| 8 | 45937.09 | $214318 \%$ | $3 \cdot 63$ | 8 | $6 \quad 4053 \cdot 61$ | $20 \quad 742.8$ | $43 \cdot 87$ |
| 9 | $5 \begin{array}{llll}5 & 1 & 44.27\end{array}$ | $\begin{array}{lll}21 & 43 & 40 \%\end{array}$ | $2 \cdot 62$ | 9 | $64258 \cdot 98$ | $\begin{array}{lllll}20 & 3 & 19 & 6\end{array}$ | 44's0 |
| 10 | $\begin{array}{lllllllll}5 & 3 & 51 & 46\end{array}$ | 214356 | 1.60 | 10 | $6454 \cdot 29$ | $195850 \cdot 8$ | $45 \cdot 73$ |
| 11 | $\begin{array}{lllll}5 & 5 & 58 & 65\end{array}$ | $\begin{array}{llll}21 & 44 & 5 & 9\end{array}$ | 0.60 | 11 | $\begin{array}{llll}6 & 47 & 9 & 53\end{array}$ | $195416 \cdot 4$ | $46 \cdot 67$ |
| 12 | $\begin{array}{llll}5 & 8 & 5 & 84\end{array}$ | 2144 | $0 \cdot 42$ | 12 | $\begin{array}{lllllllllllll}6 & 49 & 14 & 69\end{array}$ | $194936 \cdot 4$ | $47 \cdot 60$ |
| 13 | $\begin{array}{llllll}5 & 10 & 13 & 03\end{array}$ | $21447^{\circ} 0$ | $1 \cdot 43$ | 13 | $\begin{array}{llllllllllllll}6 & 51 & 19 & 79\end{array}$ | $194450 \cdot 8$ | $48 \cdot 52$ |
| 14 | $\begin{array}{lllll}5 & 12 & 20 & 21\end{array}$ | 214358.4 | $2 \cdot 45$ | 14 | $65324 \cdot 81$ | $195959 \cdot 7$ | 4945 |
| 15 | $\begin{array}{llll}5 & 14 & 27 & 38 \\ 5 & 16 & 3 & : 85\end{array}$ | 2143437 | 3.47 | 15 | 6552976 | $1935 \quad 3 \cdot 0$ | 5087 |
| 16 | $\begin{array}{lllll}5 & 16 & 34 & 55\end{array}$ | 214322.9 | $4 \cdot 47$ | 16 | 65734.65 | $1930 \quad 0 \cdot 8$ | $51 \cdot 28$ |
| 17 | $\begin{array}{llllllllll}5 & 18 & 41 & 70\end{array}$ | $214256 \cdot 1$ | $5 \cdot 48$ | 17 | $\begin{array}{lllllllll}6 & 59 & 39\end{array}$ | 19) $2453 \cdot 1$ | $52 \cdot 20$ |
| 18 | 5 20 48 84 <br> 5 29 5  | 214223.2 | 6 50 | 18 | $\begin{array}{llll}7 & 1 & 44 \cdot 19\end{array}$ | $191939 \cdot 9$ | $53 \cdot 10$ |
| 19 | $\begin{array}{llll}5 & 22 & 55\end{array}$ | $214144 \%$ | $\cdot 52$ | 19 | $\begin{array}{lllll}7 & 3 & 48 & 86\end{array}$ | $191421 \cdot 3$ | $54 \cdot 02$ |
| 20 | $\begin{array}{llll}5 & 25 & 3.07\end{array}$ | $214059 \cdot 1$ | $8 \cdot 52$ | 20 | $7 \begin{array}{lllll}7 & 5 & 53 & 45\end{array}$ | $19 \quad 8 \quad 57 \cdot 2$ | $54 \cdot 90$ |
| 21 | $\begin{array}{lllllllll}5 & 27 & 10 & 16\end{array}$ | $2140 \quad 8.0$ | 9 -52 | 21 | $\begin{array}{llll}7 & 7 & 57 & 97\end{array}$ | 193278 | $55 \cdot 82$ |
| 22 | $\begin{array}{lllllllllll}5 & 29 & 17 & 23\end{array}$ | $2139910^{\circ} 9$ | 10.53 | 22 | $7 \begin{array}{lll}7 & 10 & 2.41\end{array}$ | $185752 \cdot 9$ | $56 \cdot 72$ |
| 23 | $\begin{array}{r} 53124 \cdot 28 \\ \text { WEDN } \end{array}$ | N. $2138 \quad 7 \quad 7$ ESDAY 30. | 11.55 | 23 | $\begin{array}{rr} 7 & 12 \\ & 6 \cdot 79 \\ \text { FRIDA } \end{array}$ | N.18 5212.6 Y, NOV. 1. | $57 \cdot 60$ |
| 0 | $\begin{array}{lllll}5 & 33 & 31 & 30\end{array}$ | $\begin{array}{lllll}\text { N. } 21 & 36 & 58 & 4\end{array}$ | $12 \cdot 55$ | 0 | $71411 \cdot 09$ | N. $184627 \%$ |  |
| 1 | $\begin{array}{llllll}5 & 35 & 38 & 30\end{array}$ | $213543 \cdot 1$ | $13 \cdot 55$ |  |  |  |  |
| 2 | 5 37 45 $\sim 2$ | $\begin{array}{llll}21 & 34 & 21.8\end{array}$ | $14 \cdot 57$ |  |  |  |  |
| 3 | $\begin{array}{lllllllllll}5 & 39 & 52 & 20\end{array}$ | $213254 \cdot 4$ | $15 \cdot 55$ |  |  |  |  |
| 4 | $\begin{array}{lllllll}5 & 41 & 59\end{array}$ | $213121 \cdot 1$ | $16 \cdot 57$ |  |  |  |  |
| 5 | $55_{5}^{5} 44 \quad 5 \cdot 98$ | $212941 \cdot 7$ | $17 \cdot 57$ |  |  |  |  |
| 6 | $5 \begin{array}{llllllll}5 & 46 & 12 & 81\end{array}$ | 2127563 | 18.57 | PHASES OF TPE MOON. |  |  |  |
| 7 | $\begin{array}{lllll}5 & 48 & 19 & 61\end{array}$ | $\begin{array}{lll}21 & 26 & 4 \\ 21 & 9 & 9\end{array}$ | $19 \cdot 57$ |  |  |  |  |
| 8 | 5 50 $5026 \cdot 38$ | 21 24 7 | $20 \cdot 55$ |  |  |  |  |
| 9 | $5 \begin{aligned} & 5 \\ & 5\end{aligned}$ | $\begin{array}{llll}21 & 22 & 4\end{array}$ | $21 \cdot 57$ |  |  |  |  |
| 10 | $\begin{array}{llllll}5 & 54 & 39 & 78\end{array}$ | 21 19 54 | $22 \cdot 53$ | $\text { © Last Quarter }-4_{4}^{d} 29^{\mathrm{h}} 1$ |  |  |  |
| 11 | $\begin{array}{llll}5 & 56 & 46 \cdot 42 \\ 5 & 58 & 53 \cdot 09\end{array}$ | 21 17 39 6 <br> 21 15 18  | $23 \cdot 55$ |  |  |  |  |
| 12 |  | $\begin{array}{lllllll}21 & 15 & 18 & 3\end{array}$ | $24 \cdot 53$ |  |  |  |  |
| 13 | $6 \begin{array}{llll}6 & 0 & 59 & \cdot 57\end{array}$ | $\begin{array}{lll}21 & 12 & 51 \\ 21\end{array}$ | 25.52 | (9) New Moon - - $1111123 \cdot 8$ |  |  |  |
| 14 | $\begin{array}{llll}6 & 3 & 6 \cdot 08\end{array}$ | $211018{ }^{\circ} 0$ | $26 \cdot 50$ | ) First Quarter - 18 18 $315 \%$ |  |  |  |
| 15 | $\begin{array}{lllllllllllllll}6 & 5 & 12 & 53\end{array}$ | 217339.0 | 27.50 |  |  |  |  |
| 16 | $\begin{array}{llllllllllll}6 & 7 & 18 & 18 \\ 6 & 94\end{array}$ | $21454 \%$ | $28 \cdot 47$ |  |  |  |  |
| 17 |  | $21 \quad 2 \quad 3 \cdot 2$ | $29 \cdot 45$ |  |  |  |  |
| 18 | $611131 \cdot 59$ | $2059 \quad 6 \cdot 5$ | $30 \cdot 43$ |  |  |  |  |
| 19 | $6{ }_{6}^{6} 13-37 \cdot 84$ | $\begin{array}{llll}20 & 56 & 3 & 9\end{array}$ | $31 \cdot 42$ |  |  |  |  |
| 20 |  | $205255 \cdot 4$ | $32 \cdot 37$ |  | © Apogee | $\cdots 1$ |  |
| 21 | $\begin{array}{lllllllllllll}6 & 17 & 50 & 16\end{array}$ | 204941 ? 2 | $33 \cdot 37$ |  | © Perigee | - 13 |  |
| 22 | $\begin{array}{llll}6 & 19 & 56 \cdot 24 \\ 6 & 90 & 2 \cdot 26\end{array}$ | 20 46 21 0 <br> 20 42 55  | $34 \cdot 32$ $35 \cdot 28$ |  | © Apogee - | - 29 |  |
| 23 | $\begin{array}{llll}6 & 22 & 2 & 26\end{array}$ | 2042551 | $35 \cdot 28$ |  | ( Apogee |  |  |
| 24 | $624 \quad 8 \cdot 22$ | $\begin{array}{lllll}\text { N. } 20 & 39 & 23 & 4\end{array}$ |  |  |  |  |  |

## MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

| Hour. | Right Ascension. | Declination. | $\begin{aligned} & \text { Dir. Dee. } \\ & \text { for 10". } \end{aligned}$ | Hour. | Right Ancension. | Declination. | $\begin{aligned} & \text { Dif. Dee. } \\ & \text { for lome } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | FRIDAY 25. |  |  |  | SUNDAY 27. |  |  |
|  |  |  |  |  | ${ }^{\text {b }}$ |  | " |
| 1 | $12438 \cdot 45$ | N. $123430 \cdot 4$ | $93 \cdot 75$ | 0 | $\begin{array}{lllll}3 & 1 & 57 & 80\end{array}$ | N. $184512 \cdot 1$ | 57.75 |
| 1 | $12637 \cdot 83$ | $124352 \cdot 9$ | $93 \cdot 15$ | 1 | 3 lll | $18 \quad 5058 \%$ | 56 '97 |
| 2 | 1288379 | 12531118 | $92 \cdot 55$ | 2 | 3 lll | $\begin{array}{llllllll}18 & 56 & 39 & 8\end{array}$ | $55 \cdot 97$ |
| 3 | $13036 \cdot 84$ | $\begin{array}{llllll}13 & 2 & 27 & 1\end{array}$ | 91:90 | 3 | $\begin{array}{lllllllll}3 & 8 & 10 & 40\end{array}$ | $19 \quad 2 \quad 15$ '6 | $55 \cdot 10$ |
| 4 | $13236 \cdot 48$ | 131138 | [ $5 \cdot 30$ | 4 | $\begin{array}{llllllllll}3 & 10 & 14 & 79\end{array}$ | $19 \quad 746 \times 2$ | $54 \cdot 18$ |
| 5 | $13436 \cdot 21$ | $132046 \cdot 3$ | 40'65 | 5 | $\begin{array}{lllllllllll}3 & 12 & 19 & 27\end{array}$ | $19131311 \cdot 3$ | 30 |
| 6 | 13636.03 | $132950 \cdot 2$ | $90 \cdot 0$ | 6 | $\begin{array}{llllllllllll}3 & 14 & 23 & 84\end{array}$ | $191831 \cdot \mathrm{I}$ | $52 \cdot 40$ |
| 7 | 138835.94 | 13 3s $50 \cdot 3$ | $89 \cdot 35$ | 7 | $31688 \cdot 51$ | $192345 \cdot 5$ | 5148 |
| 8 | 14035.95 | $134746 \cdot 4$ | $88 \cdot 72$ | 8 | $\begin{array}{lllllllllllll}3 & 18 & 33 & 26\end{array}$ | $192854 \cdot 4$ | 5058 |
| 9 | 1423604 | $135638 \cdot 7$ | 88.05 | 9 | $\begin{array}{lllllllllll}3 & 20 & 38\end{array}$ | $193357^{\circ} 9$ | 49.67 |
| 10 | $14436 \cdot 23$ | $14 \quad 527 \%$ | $87 \cdot 38$ | 10 | $32243 \cdot 02$ | 193855.9 | 48.75 |
| 11 | $14636 \cdot 52$ | 1414113 | $86 \cdot 72$ | 11 | 32448.03 | $194348 \cdot 4$ | $47 \cdot 82$ |
| 12 | $14836 \% 0$ | $142251 \%$ | 86 -03 | 12 | $\begin{array}{lllllll}3 & 26 & 53\end{array}$ | $1948 \quad 35 \cdot 3$ | $46 \cdot 90$ |
| 13 | 15037.38 | 1431278 | $85 \cdot 35$ | 13 |  | $195316 \cdot 7$ | $45 \cdot 97$ |
| 14 | 1523796 t | 143959.9 | $84 \cdot 65$ | 14 | $\begin{array}{llll}3 & 31 & 3 \cdot 57\end{array}$ | $195752 \cdot 5$ | $45 \% 5$ |
| 15 | 15458.63 | 1448278 | $83 \cdot 95$ | 15 | $\begin{array}{llll}3 & 33 & 8 & \text { * } 91\end{array}$ | $20 \quad 2 \quad 22 \cdot 8$ | $44 \cdot 10$ |
| 16 | $\left.\begin{array}{llllll}1 & 56 & 39\end{array}\right) \cdot 40$ | 145651.5 | $83 \cdot 27$ | 16 | $\begin{array}{lllllll}3 & 35 & 14 & 33\end{array}$ | 20.6474 | $43 \cdot 15$ |
| 17 | $15840 \div 28$ | $\begin{array}{lllll}15 & 5 & 11 & 1\end{array}$ | $82 \cdot 53$ | 17 | $\begin{array}{llllllllll}3 & 37 & 19 & 82\end{array}$ | 201116 | $42 \cdot 22$ |
| 18 | $2 \quad 0.41 \cdot 25$ | $15 \quad 13 \quad 26 \cdot 3$ | $81 \cdot 83$ | 18 | $\begin{array}{llllll}3 & 39 & 25 & 40\end{array}$ | $20 \begin{array}{llll} & 15 & 19 \%\end{array}$ | $41 \cdot 28$ |
| 19 | $\bigcirc \quad 24232$ | $15 \quad 2137 \cdot 3$ | $81 \cdot 10$ | 19 | 3413104 | 2019278 | $40 \cdot 32$ |
| 20 | $2 \quad 443 \cdot 50$ | $15 \quad 2943.9$ | $80 \cdot 38$ | 20 | 3433676 | 202329.2 | $39 \times 3$ |
| 21 | $\begin{array}{lllll}2 & 6 & 44 \cdot 77\end{array}$ | $153746 \%$ | $79 \cdot 63$ | 21 | 34542.56 | $209725 \cdot 4$ | $38 \cdot 42$ |
| 22 | $2 \quad 846 \cdot 15$ | $154544^{15} 0$ | $78 \cdot 92$ | 22 | $34748 \cdot 42$ | $2031-15 \%)$ | $37 \cdot 45$ |
| 23 | $21047 \cdot 63$ | N. $15 \quad 53 \quad 37 \quad 5$ | $78 \cdot 15$ | 23 | 3 3 49 54-35 | $\begin{array}{llll}\text { N. } 20 & 35 & 0 & 6\end{array}$ | 36 \% 50 |
|  | $\text { SATURDAY } 26 .$ |  |  | MONDAY 28. |  |  |  |
| 0 | 2124920 | N. $16 \quad 126 \cdot 4$ | $77 \cdot 40$ | 0 | 3520034 | N. 203883939 | 35 \%3 |
| 1 | $21450 \cdot 88$ | $\begin{array}{lll}16 & 9 & 10\end{array}$ | $76 \cdot 65$ | 1 | $3 \begin{array}{llll}3 & 54 & 6: 40\end{array}$ | $20.4212 \cdot 8$ | 34*5 |
| 2 | 21659.67 | $161650 \%$ | $75 \cdot 88$ | 2 | $\begin{array}{lllll}3 & 56 & 12 & 53\end{array}$ | $204540 \cdot 1$ | $33 \cdot 60$ |
| 3 | $21854 \cdot 55$ | $16 \quad 2426.0$ | $75 \cdot 12$ | 3 | 3 58 18 7 | 204917 | $32 \cdot 62$ |
| 4 | $22056 \cdot 54$ | $163156 \cdot 7$ | $74 \cdot 3$ | 4 | $4 \quad 0 \quad 24.97$ | $205217 \cdot 4$ | 31.63 |
| 5 | 2 22 58.64 | $163922 \cdot 8$ | $73 \cdot 5$ | 5 | $4 \quad 231: 28$ | $2055-27$ | $30 \cdot 6$ |
| 6 | $\begin{array}{llll}2 & 25 & 0 & \text { '83 }\end{array}$ | $164644 \cdot 2$ | $72 \cdot 77$ | 6 | $4 \quad 43765$ | $205831 \cdot 2$ | 29.68 |
| 7 | $\begin{array}{llll}2 & 27 & 3 \cdot 13\end{array}$ | $16 \quad 54 \quad 0 \cdot 8$ | $72 \cdot 0$ | 7 | $4 \quad 644 \cdot 07$ | $21 \quad 129.3$ | $28 \%$ |
| 8 | 2295154 | $17 \times 128$ | 71.18 | 8 | 48850.55 | 214215 | 2772 |
| 9 | 2318804 | $\begin{array}{llll}17 & 8 & 19 & \\ 17 & 15\end{array}$ | $70 \cdot 38$ | 9 | $4 \begin{array}{llllll}4 & 10 & 57 & 07\end{array}$ | 217878 | $26 \% 2$ |
| 10 | $\begin{array}{ll}2 & 33 \\ 10 & 10\end{array}$ | $171522 \cdot 2$ | 69.58 | 10 | $413 \quad 3 \quad 65$ | $21948 \cdot 1$ | $25 \cdot 75$ |
| 11 | $\cdots$ | 1722197 | $68 \cdot 77$ | 11 | $415 \quad 10 \cdot 28$ | 211222.6 | $24 \cdot 75$ |
| 12 | $\begin{array}{llllllll}2 & 37 & 16 \cdot 18\end{array}$ | $172912 \cdot 3$ | $67 \cdot 95$ | 12 | $41716{ }^{4} 195$ | $\begin{array}{llll}21 & 14 & 51 \\ 1\end{array}$ | $23 \cdot 75$ |
| 13 | $\begin{array}{ll}2 & 39 \\ 19 & 19\end{array} 10$ | $17 \quad 36 \quad 0 \cdot 0$ | $67 \cdot 13$ | 13 | $41923 \cdot 67$ | $211713 \cdot 6$ | $22 \cdot 77$ |
| 14 | $24122 \cdot 11$ | 17 42 42 '8 | $66 \cdot 28$ | 14 | $42130 \cdot 43$ | $211930 \cdot 2$ | 21'77 |
| 15 | $243 \quad 25 \cdot 23$ | $174920 \cdot 5$ | $65 \cdot 47$ | 15 | 423 37 23 | $212140 \cdot 8$ | $20 \cdot 77$ |
| 16 | 2452845 | $1755 \quad 53 \cdot 3$ | 64 $\cdot 63$ | 16 | 42544.07 | $212345 * 4$ | $19 \cdot 77$ |
| 17 | 2473177 | $18 \quad 2 \quad 21 \cdot 1$ | $63 \cdot 78$ | 17 | $42750 \cdot 94$ | 212544.0 | $18 \cdot 77$ |
| 18 | $24935 \cdot 19$ | $\begin{array}{ll}18 & 8 \\ 18 & 43\end{array}$ | $62 \cdot 93$ | 18 | 42957.85 | $212736 \cdot 6$ | 17\%77 |
| 19 | $25138 \cdot 71$ | $\begin{array}{llll}18 & 15 & 1 & 4\end{array}$ | $62 \cdot 08$ | 19 | 432 4'79 | 212923.2 | $16 \% 7$ |
| 20 | 2534233 | $18 \quad 2113.9$ | $61 \cdot 22$ | 20 | $\begin{array}{lllllllllllll}4 & 34 & 11 & 76\end{array}$ | $2131 \quad 3 \cdot 8$ | 15\% |
| 21 | 2 2 5546.05 |  | $60 \cdot 37$ | 21 | $\begin{array}{lllll}4 & 36 & 18 & 76\end{array}$ | 21323883 | 14.75 |
| 22 | 25749 '87 | $183323 \cdot 4$ | 59.50 | 22 | $43885 \cdot 79$ | $2134 \quad 6 \cdot 8$ | $13 \cdot 75$ |
| 23 | $\begin{array}{llllll}2 & 59 & 53 & 78\end{array}$ | $\begin{array}{llll}18 & 39 & 20 & 4\end{array}$ | 58.62 | 23 | 440039.84 | $\begin{array}{llll}21 & 35 & 29 & 3\end{array}$ | $12 \cdot 73$ |
| 24 | $\begin{array}{llll}3 & 1 & 57 & 80\end{array}$ | N. $184512 \cdot 1$ |  | 24 | $44239 \cdot 92$ | N.21 $3645 \quad 7$ |  |

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[^0]:    * Mean Time of the Semidiameter passing may be found by subtracting $0^{* *} 18$ from the Sidereal Time.

[^1]:    * The Semidiameter for Apparent Noon may be assumed the same as that for Mean Noon.

[^2]:    d h
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