Arab Republic of Egypt
Ministry of Higher Education & Scientific Research
National Research Institute of
Astronomy and Geophysics(NRIAG)
Helwan - Cairo

An Astronomical Guide

for the Hijri Year

1443 H

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and Geophysics
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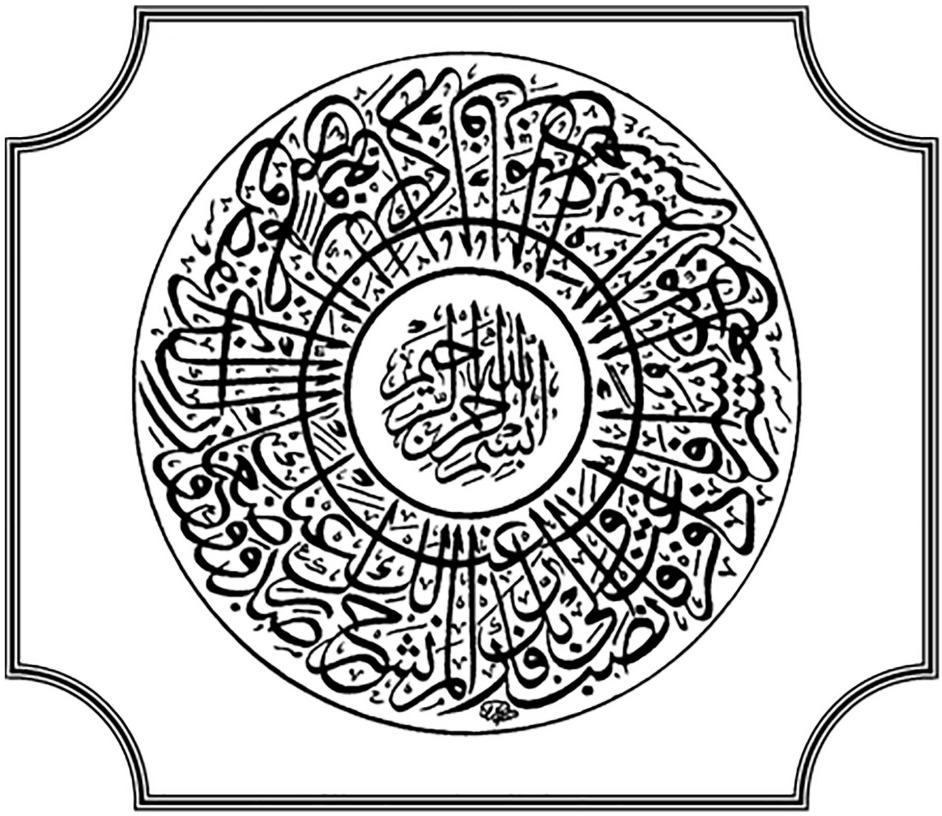
The Astronomical Guide for the Hijri year 1443 H.

High image quality of the solar corona , taken by the research team of the Solar Research Laboratory using Williams 5-inch telescope and ultra-sensitive digital camera during the total solar eclipse on March 29, 2006 at Salloum's plateau, Egypt



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Preface

The National research Institute of Astronomy and Geophysics have been working since its inception at Helwan on 1903, to provide services through scientific applications to the community such as conditions and calculations of astronomical events such as Solar and lunar eclipses, prayer times, beginnings of Hijri months, fasting times, religious seasons and pilgrimages.

It is my great pleasure to present the astronomical guide version of the Hijri year 1443 AH corresponding to the Gregorian year 2021/2022 AD. The astronomical guide includes the view of the sky for each day of the sights of the new crescent of the Hijri months, the position of the crescent in relation to the sun and other planets, which may appear on that day of the month at sunset. Also, it contains data of the qiblah's directions for the world's countries, conjunction, occultation, etc.

On the otherhands, NRIAG started sharing this guide in digital form on our web site as well as a smart application for mobile phones. This can be accessed via NRIAG web site: https://www.nriag.sci.eg/hejri-calendar/

There is a great hope that the astronomical guide for the Hijri year 1443 AH will gain the attention of the public and amateur astronomers and will help in spreading scientific awareness in one of the important fields related to various aspects of life.

President
The National research Institute of Astronomy and Geophysics (NRIAG)

Prof. Dr.Gad M. El-Qady

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New Moon conjunctions and the beginning of Hijri months For the year 1443 A.H.

New Moon conjunctions and the beginnings of Hijri months For the year 1443 A.H

The Month	New Moon conjunction	Circumstances of crescent visibility according to the crescent lag after sunset (On the sight day)	Begin of Hijri month	Length of Hijri month (days)
Mohar'rum	h m 13 50 Sunday 8/8/2021 29/12/1442	On the sighting day (Sunday 8/8/2021), The crescent lags (6 - 24 minutes) after sunset in all Arabic and Islamic countries, Except Kuala Lumpur where moonset will occur before sunset by two minutes and Jakarta where moonset will occur before sunset by seven minutes.	Monday 9/8/2021	30
Safar	h m 00 52 Tuesday 7/9/2021 30/1/1443	on the sighting day (Monday, 6/9/2021) The lunar crescent is absent after sunset in all Arabic and Islamic countries.	Wednesday 8/9/2021	29
Rabee Al'awal	h m 11 05 Wednesday 6/10/2021 29/2/1443	On the sighting day (Wednesday, 6/10/2021), The crescent lags (3 - 20minutes) after sunset in all Arabic and Islamic countries, Except Jakarta where moonset will occur with sunset.	Thursday 7/10/2021	30
Rabee Al'akher	h m 21 15 Thursday 4/11/2021 29/3/1443	on the sighting day (Thursday, 4/11/2021) The lunar crescent is absent after sunset in all Arabic and Islamic countries.	Saturday 6/11/2021	29

Time, described above, according to the universal time

New Moon conjunctions and the beginnings of Hijri months For the year 1443 A.H (cont.)

The Month	New Moon conjunction	Circumstances of crescent visibility according to the crescent lag after sunset (On the sight day)	Begin of Hijri month	Length of Hijri month (days)
Jumade Al'oula	h m 07 43 Saturday 4/12/2021 29/4/1443	On the sighting day (Saturday, 4/12/2021), The crescent lags (2 - 21 minutes) after sunset in all Arabic and Islamic countries.	Sunday 5/12/2021	30
Jumade Al'akhera	h m 18 34 Sunday 2/1/2022 29/5/1443	on the sighting day (Sunday, 2/1/2022) The lunar crescent is absent after sunset in all Arabic and Islamic countries.	Tuesday 4/1/2022	29
Rajab	h m 05 46 Tuesday 1/2/2022 29/6/1443	On the sighting day (Tuesday, 1/2/2022), The crescent lags (4- 20minutes) after sunset in Arabic and Islamic countries.	Wednesday 2/2/2022	30
Sha'aban	h m 17 35 Wednesday 2/3/2022 29/7/1443	on the sighting day (Wednesday, 2/3/2022) The lunar crescent is absent after sunset in the majority of Arabic and Islamic countries.	Friday 4/3/2022	29
Ramadan	h m 06 25 Friday 1/4/2022 29/8/1443	On the sighting day (Friday, 1/4/2022), The crescent lags (10 - 25 minutes) after sunset in Arabic and Islamic countries.	Saturday 2/4/2022	30
Shawal	h m 20 28 Saturday 30/4/2022 29/9/1443	on the sighting day (Saturday, 30/4/2022) The lunar crescent is absent after sunset in all Arabic and Islamic countries.	Monday 2/5/2022	29

Time, described above, according to the universal time

New Moon conjunctions and the beginnings of Hijri months For the year 1443 A.H (cont.)

The Month	New Moon conjunction	Circumstances of crescent visibility according to the crescent lag after sunset (On the sight day)	Begin of Hijri month	Length of Hijri month (days)
Zul'kada	h m 11 30 Monday 30/5/2022 29/10/1443	On the sighting day (Monday, 30/5/2022), The crescent lags (4 - 18 minutes) after sunset in Arabic and Islamic countries.	Tuesday 31/5/2022	30
Zul'hejja	h m 02 52 Wednesday 29/6/2022 30/11/1443	on the sighting day (Tuesday, 28/6/2022) The lunar crescent is absent after sunset in all Arabic and Islamic countries.	Thursday 30/6/2022	30

Time, described above, according to the universal time

Glossary

Conjunction (New Moon):

Is the event when the Earth, Moon and Sun are approximately in a straight line; with the sun and Earth on opposite side of the Moon. This alignment leaves the side of the Moon that faces the Earth in complete darkness.

The crescent:

The illuminated part of the moon that occurs when the angle between the center of the Moon and the Sun as seen from the Earth is 8 degrees.

Duration:

The time interval separating Sunset And Moonset, i.e. the time interval during which the Moon stays above the western horizon after Sunset.
Sign (-) means that Moonset occurs before sunset.
Sign (+) means that Moonset occurs after sunset.

Crescent coordinates: defined by

(a) Relative altitude (degree): height above the horizon at sunset.
(b) Relative azimuth(degree): the horizontal deviation from the solar disk at sunset.

Quarter:

50 % of the Moon surface is illuminated.

Full Moon:

100 % of the Moon surface is illuminated.

Sight Day:

The day to seek the crescent, it is the twenty-ninth day of every Higric month.

Hhjric and Gregorian:

H and D.


Mohar’rum

Birth day conditions of Mohar'rum - crescent,1443 A.H.

Mohar'rum's crescent exist after the conjunction that occurs on Sunday, 29 Zul'hejja, 1442A.H. , corresponding to 8/8/2021 A.D. (Sight Day) at one o'clock and 50 minute p.m. (U.T.)

On the sight day (Sunday, 8/8/2021 A.D):

- **The crescent lags sunset in Makkah by 14 minutes.**
- **The crescent lags sunset in Cairo by 18 minutes.**
- **Generally the Crescent lags (6 - 24 minutes) after sunset in Arabic and Islamic Countries.**
- **In both Kuala Lumpur and Jakarta, the crescent will not be born yet before sunset on that day.**
- **In Kuala Lumpur Moonset will occur before Sunset by two minutes, and in Jakarta Moonset will occur before Sunset by seven minutes.**

Consequently,The first day of Mohar'rum 1443 A.H. is adopted to be Monday, 9.8.2021 A.D. according to the astronomical calculations.

Ephemeris of Mohar'rum,1443 A.H.

(a) Phases of the Moon (U.T.)

Conjunction	First Quarter	Full Moon	Last Quarter
			
Sunday, 8.8.2021 A.D. 13 h 50 m	Sunday, 15.8.2021 A.D. 15 h 20 m	Sunday, 22.8.2021 A.D. 12 h 02 m	Monday, 30.8.2021 A.D. 07 h 13 m
First day	**Last day**	**Length**	
Monday, 9.8.2021 A.D.	Tuesday, 7.9.2021 A.D.	30 days	

(b) Observing conditions in Egypt for the crescent on the sight day (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent lags m	Relative altitude (degree)	Relative azimuth (degree)
	h	m	h	m			
Halayib	18	09	18	23	14	2.438	2.815 N
Toshka	18	29	18	44	15	2.571	2.691 N
Aswan	18	27	18	43	16	2.633	2.580 N
Qena	18	31	18	47	16	2.745	2.399 N
Al'kharga	18	40	18	56	16	2.765	2.407 N
Assiut	18	38	18	55	17	2.830	2.274 N
Sohag	18	35	18	52	17	2.787	2.342 N
Fayoum	18	43	19	01	18	2.937	2.072 N
Tur	18	31	18	47	16	2.825	2.238 N
Saint Catherine	18	29	18	46	17	2.833	2.217 N
Taba	18	27	18	45	18	2.856	2.155 N
Cairo	18	42	19	00	18	2.961	2.014 N
Tanta	18	44	19	03	19	2.999	1.939 N
Alexandria	18	49	19	08	19	3.039	1.872 N
Port Said	18	40	18	59	19	2.992	1.926 N
Salloum	19	09	19	28	19	3.154	1.721 N

(c) Observing conditions of the crescent on the sight day In some Arab and Islamic cities (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent Lags	City	Sunset (Local time)		Moonset (Local time)		Crescent Lags
	h	m	h	m	m		h	m	h	m	m
Dakar	18	36	18	54	18	Makkah	18	55	19	09	14
Nouakchott	18	34	18	53	19	Jerusalem	18	29	18	48	19
Marrakech	19	22	19	45	23	Baghdad	18	55	19	13	18
Fez	19	13	19	37	24	Aden	18	24	18	34	10
Lagos	19	02	19	15	13	Riyadh	18	32	18	46	14
Algiers	18	47	19	11	24	Kuwait	18	34	18	50	16
Tunis	19	18	19	42	24	Manama	18	19	18	33	14
Tripoli-Libya	18	59	19	21	22	Tehran	19	01	19	20	19
Khartoum	18	17	18	29	12	Doha	18	14	18	28	14
Mogadishu	18	09	18	15	06	Abu Dhabi	19	02	19	15	13
Ankara	18	54	19	17	23	Dubai	18	59	19	12	13
Amman	18	26	18	45	19	Muscat	18	43	18	55	12
Damascus	18	28	18	47	19	Karachi	19	11	19	23	12
Jazan	18	38	18	50	12	Kuala Lumpur*	19	25	19	23	-02
Medina	19	00	19	15	15	Jakarta*	17	55	17	48	-07

(2) In some Western capitals

Washington	19	11	19	44	33	Cape Town	18	11	18	04	-07
Ottawa	19	20	19	56	36	Brasilia	18	01	18	14	13
London	19	36	20	09	33	Santiago	18	09	18	18	09
Moscow	20	20	20	55	35	Lima	18	03	18	21	18

(D) Mohar'rum,1443 A.H.
The first day of Mohar'rum, 1443 A.H. is adopted to be Monday, 9.8.2021 A.D.

DAY	H	D	H	D	H	D	H	D	H	D
Saturday			6	14	13	21	20	28	27	4
Sunday			7	15	14	22	21	29	28	5
Monday	1	9	8	16	15	23	22	30	29	6
Tuesday	2	10	9	17	16	24	23	31	30	7
Wednesday	3	11	10	18	17	25	24	Seb.		
Thursday	4	12	11	19	18	26	25	2		
Friday	5	13	12	20	19	27	26	3		

(*) Moon not new


Safar

Birth day conditions of Safar - crescent,1443 A.H.

Safar's crescent exist after the conjunction that occurs on Tuesday, 7/9/2021A.D. (The next day of sight day) at 12 o'clock and 52 minutes a.m. (U.T.)

On the sight day (Monday, 6/9/2021 A.D.):

- **In Cairo and in all Arab and Islamic countries, the crescent will not be born yet before sunset on that day.**
- **On that day the crescent lags Sunset in some of Arabic and Islamic countries despite the conjugation comes after sunset (it is negligible).**
- **Therefore, Tuesday, 7.9.2021 A.D. is the day completing the month of Mohar'rum 1443 A.H.**

Consequently, The first day of Safar 1443 A.H. is adopted to be Wednesday, 8.9.2021 A.D. according to the astronomical calculations.

Ephemeris of Safar,1443 A.H.

(a) Phases of the Moon (U.T.)

Conjunction	First Quarter	Full Moon	Last Quarter
 Tuesday, 7.9.2021 A.D. 00 h 52m	 Monday, 13.9.2021 A.D. 20h 39 m	 Monday, 20.9.2021 A.D. 23 h 55 m	 Wednesday, 29.9.2021 A.D. 01h 57 m
First day	**Last day**	**Length**	
Wednesday, 8.9.2021 A.D.	Wednesday, 6.10.2021 A.D.	29 days	

(b) Observing conditions in Egypt for the crescent on the sight day (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent lags	Relative altitude (degree)	Relative azimuth (degree)
	h	m	h	m	m		
Halayib	17	45	17	41	-04	Moon not new	
Toshka	18	04	18	01	-03	Moon not new	
Aswan	18	01	17	59	-02	Moon not new	
Qena	18	03	18	02	-01	Moon not new	
Al'kharga	18	12	18	11	-01	Moon not new	
Assiut	18	10	18	09	-01	Moon not new	
Sohag	18	07	18	06	-01	Moon not new	
Fayoum	18	12	18	13	01	Moon not new	
Tur	18	00	18	00	zero	Moon not new	
Saint Catherine	17	59	17	59	zero	Moon not new	
Taba	17	56	17	57	01	Moon not new	
Cairo	18	11	18	12	01	Moon not new	
Tanta	18	12	18	14	02	Moon not new	
Alexandria	18	17	18	19	02	Moon not new	
Port Said	18	08	18	10	02	Moon not new	
Salloum	18	36	18	39	03	Moon not new	

(c) Observing conditions of the crescent on the sight day

(1) In some Arab and Islamic cities* (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent Lags	City	Sunset (Local time)		Moonset (Local time)		Crescent Lags
	h	m	h	m	m		h	m	h	m	m
Dakar	18	18	18	16	-02	Makkah	18	32	18	27	-05
Nouakchott	18	13	18	13	zero	Jerusalem	17	56	17	58	02
Marrakech	18	49	18	55	06	Baghdad	18	20	18	22	02
Fez	18	38	18	45	07	Aden	18	07	17	57	-10
Lagos	18	50	18	43	-07	Riyadh	18	06	18	02	-04
Algiers	18	09	18	17	08	Kuwait	18	04	18	03	-01
Tunis	18	40	18	47	07	Manama	17	51	17	48	-03
Tripoli-Libya	18	25	18	30	05	Tehran	18	24	18	27	03
Khartoum	17	58	17	51	-07	Doha	17	47	17	43	-04
Mogadishu	18	01	17	46	-15	Abu Dhabi	18	35	18	31	-04
Ankara	18	12	18	20	08	Dubai	18	32	18	28	-04
Amman	17	53	17	55	02	Muscat	18	18	18	12	-06
Damascus	17	53	17	56	03	Karachi	18	45	18	39	-06
Jazan	18	19	18	12	-07	Kuala Lumpur	19	16	18	54	-22
Medina	18	34	18	31	-03	Jakarta	17	51	17	23	-28

(2) In some Western capitals* (L.T.)

Washington	18	30	18	46	16	Cape Town	18	31	17	59	-32
Ottawa	18	30	18	50	20	Brasilia	18	05	17	55	-10
London	18	35	18	55	20	Santiago	18	28	18	12	-16
Moscow	19	10	19	33	23	Lima	18	04	18	00	-04

(D) Safar,1443 A.H. The first day of Safar, 1443 A.H. is adopted to be Wednesday, 8.9.2021A.D.

DAY	H	D	H	D	H	D	H	D	H	D
Saturday			4	11	11	18	18	25	25	2
Sunday			5	12	12	19	19	26	26	3
Monday			6	13	13	20	20	27	27	4
Tuesday			7	14	14	21	21	28	28	5
Wednesday	1	8	8	15	15	22	22	29	29	6
Thursday	2	9	9	16	16	23	23	30		
Friday	3	10	10	17	17	24	24	Oct.		

(*)Moon not new

Rabee Al’awal

Birth day conditions of Rabee Al'awal - crescent,1443 A.H.

Rabee Al'awal's crescent is born immediately after the conjunction that occurs on Wednesday, 29 Safar 1443 A.H., corresponding to 6/10/2021 A.D. (Sight Day) at eleven o'clock and five minutes a.m. (U.T.)

On the sight day (Wednesday, 6/10/2021 A.D.):

- **The crescent lags sunset in Makkah by 14 minutes.**
- **The crescent lags sunset in Cairo by 17 minutes.**
- **Generally the crescent lags (3 - 20 minutes) after sunset in Arabic and Islamic countries.**
- **In Kuala Lumpur and Jakarta, the crescent will not be born yet on that day.**
- **In Kuala Lumpur Moonset will occur before Sunset by three minutes, and in Jakarta Moonset will occur with Sunset.**

Consequently,The first day of Rabee Al'awal 1443 A.H. is adopted to be Thursday, 7.10.2021 A.D. according to the astronomical calculations.

Ephemeris of Rabee Al'awal,1443 A.H.

(a) Phases of the Moon (U.T.)

Conjunction	First Quarter	Full Moon	Last Quarter
			
Wednesday, 6.10.2021 A.D. 11 h 05 m	Wednesday, 13.10.2021 A.D. 03 h 25 m	Wednesday, 20.10.2021 A.D. 14 h 57 m	Thursday, 28.10.2021 A.D. 20 h 05 m
First day	**Last day**	**Length**	
Tuesday, 7.10.2021 A.D.	Friday, 5.11.2021 A.D.	30 days	

(b) Observing conditions in Egypt for the crescent on the sight day (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent lags	Relative altitude (degree)	Relative azimuth (degree)
	h	m	h	m	m		
Halayib	17	16	17	31	15	2.716	0.985 N
Toshka	17	35	17	50	15	2.832	0.829 N
Aswan	17	30	17	45	15	2.825	0.739 N
Qena	17	30	17	46	16	2.847	0.580 N
Al'kharga	17	40	17	56	16	2.895	0.562 N
Assiut	17	36	17	52	16	2.886	0.457 N
Sohag	17	34	17	50	16	2.872	0.521 N
Fayoum	17	36	17	53	17	2.902	0.286 N
Tur	17	25	17	41	16	2.841	0.454 N
Saint Catherine	17	24	17	40	16	2.836	0.440 N
Taba	17	20	17	36	16	2.822	0.400 N
Cairo	17	34	17	51	17	2.895	0.244 N
Tanta	17	35	17	52	17	2.901	0.181 N
Alexandria	17	39	17	56	17	2.921	0.115 N
Port Said	17	29	17	46	17	2.877	0.186 N
Salloum	17	58	18	15	17	3.012	0.062 S

(c) Observing conditions of the crescent on the sight day

(1) In some Arab and Islamic cities (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent Lags	City	Sunset (Local time)		Moonset (Local time)		Crescent Lags
	h	m	h	m	m		h	m	h	m	m
Dakar	17	55	18	15	20	Makkah	18	04	18	18	14
Nouakchott	17	48	18	08	20	Jerusalem	17	17	17	34	17
Marrakech	18	10	18	31	21	Baghdad	17	40	17	56	16
Fez	17	57	18	18	21	Aden	17	46	17	58	12
Lagos	18	35	18	52	17	Riyadh	17	35	17	49	14
Algeria	17	24	17	44	20	Kuwait	17	27	17	42	15
Tunisia	17	55	18	15	20	Manama	17	18	17	32	14
Tripoli-Libya	17	45	18	03	18	Tehran	17	40	17	56	16
Khartoum	17	35	17	49	14	Doha	17	15	17	29	14
Mogadishu	17	49	17	59	10	Abu Dhabi	18	04	18	17	13
Ankara	17	23	17	41	18	Dubai	18	00	18	13	13
Amman	17	15	17	31	16	Muscat	17	47	18	00	13
Damascus	17	12	17	29	17	Karachi	18	13	18	25	12
Jizan	17	54	18	07	13	Kuala Lumpur*	19	03	19	06	03
Medina	18	03	18	18	15	Jakarta*	17	46	17	46	zero

(2) In some Western capitals (L.T.)

Washington	17	42	18	09	27	Cape Town	18	53	19	00	07
Ottawa	17	33	18	00	27	Brasilia	18	08	18	30	22
London	17	26	17	49	23	Santiago	18	49	19	13	24
Moscow	17	51	18	13	22	Lima	18	04	18	31	27

(D) Rabee Al'awal,1443 A.H.

The first day of Rabee Al'awal, 1443 A.H. is adopted to be Thursday, 7.10.2021 A.D.

DAY	H	D	H	D	H	D	H	D	H	D
Saturday			3	9	10	16	17	23	24	30
Sunday			4	10	11	17	18	24	25	31
Monday			5	11	12	18	19	25	26	Nov.
Tuesday			6	12	13	19	20	26	27	2
Wednesday			7	13	14	20	21	27	28	3
Thursday	1	7	8	14	15	21	22	28	29	4
Friday	2	8	9	15	16	22	23	29	30	5

(*)Moon not new


Rabee Al’akher

Birth day conditions of Rabee Al'akher - crescent,1443 A.H.

Rabee Al'akher's crescent is born immediately after the conjunction that occurs on Thursday, 29 Rabee Al'awal's 1443 A.H., corresponding to 4/11/2021 A.D. (Sight Day) at nine o'clock and 15 minutes p.m. (U.T.)

On the sight day (Thursday, 4/11/2021 A.D.):

- **In Cairo and in all Arabic and Islamic countries, the crescent will not be born before sunset on that day, except Dakar.**
- **In Makkah Moonset will occur before Sunset by 12minutes.**
- **In Cairo Moonset will occur before Sunset by 9minutes.**
- **In Arabic and Islamic countries Moonset will occur before Sunset by (4 - 28 minutes).**
- **Therefore, Friday, 5.11.2021 A.D. is the day completing the month of Rabee Al'awal's 1443 A.H.,**

Consequently, the first day of Rabee Al'akher 1443 A.H. is adopted to be Saturday, 6.11.2021 A.D. according to the astronomical calculations.

Ephemeris of
Rabee Al'akher,1443 A.H.
(a) Phases of the Moon (U.T.)

Conjunction	First Quarter	Full Moon	Last Quarter
			
Thursday, 4.11.2021 A.D. 21 h 15m	Thursday, 11.11.2021 A.D. 12 h 46 m	Friday, 19.11.2021 A.D. 08 h 58 m	Saturday, 27.11.2021 A.D. 12 h 28 m
First day	**Last day**	**Length**	
Saturday, 6.11.2021 A.D.	Saturday, 4.12.2021 A.D.	29 days	

(b) Observing conditions in Egypt for the crescent on the sight day (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent lags	Relative altitude (degree)	Relative azimuth (degree)
	h	m	h	m	m		
Halayib	16	54	16	43	-11	Moon not new	
Toshka	17	13	17	02	-11	Moon not new	
Aswan	17	07	16	57	-10	Moon not new	
Qena	17	05	16	55	-10	Moon not new	
Al'kharga	17	16	17	06	-10	Moon not new	
Assiut	17	10	17	00	-10	Moon not new	
Sohag	17	08	16	58	-10	Moon not new	
Fayoum	17	08	16	59	-09	Moon not new	
Tur	16	59	16	49	-10	Moon not new	
Saint Catherine	16	57	16	47	-10	Moon not new	
Taba	16	51	16	42	-09	Moon not new	
Cairo	17	05	16	56	-09	Moon not new	
Tanta	17	05	16	56	-09	Moon not new	
Alexandria	17	08	17	00	-08	Moon not new	
Port Said	16	59	16	50	-09	Moon not new	
Salloum	17	27	17	19	-08	Moon not new	

(c) Observing conditions of the crescent on the sight day In some Arab and Islamic cities * (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent Lags	City	Sunset (Local time)		Moonset (Local time)		Crescent Lags
	h	m	h	m	m		h	m	h	m	m
Dakar	17	40	17	34	-06	Makkah	17	43	17	31	-12
Nouakchott	17	30	17	24	-06	Jerusalem	16	47	16	38	-09
Marrakech	17	40	17	35	-05	Baghdad	17	07	16	58	-09
Fez	17	24	17	20	-04	Aden	17	32	17	18	-14
Lagos	18	26	18	16	-10	Riyadh	17	11	16	59	-12
Algeria	16	47	16	43	-04	Kuwait	16	59	16	48	-11
Tunisia	17	19	17	14	-05	Manama	16	53	16	41	-12
Tripoli-Libya	17	13	17	07	-06	Tehran	17	06	16	56	-10
Khartoum	17	19	17	07	-12	Doha	16	51	16	39	-12
Mogadishu	17	43	17	26	-17	Abu Dhabi	17	41	17	28	-13
Ankara	16	42	16	36	-06	Dubai	17	36	17	23	-13
Amman	16	43	16	34	-09	Muscat	17	25	17	11	-14
Damascus	16	40	16	31	-09	Karachi	17	49	17	35	-14
Jazan	17	37	17	24	-13	Kuala Lumpur	18	56	18	32	-24
Medina	17	39	17	28	-11	Jakarta	17	46	17	18	-28

(2) In some Western capitals (L.T.)

Washington	17	03	17	07	04	Cape Town*	19	17	18	57	-20
Ottawa	16	45	16	49	04	Brasilia	18	16	18	12	-04
London*	16	28	16	28	zero	Santiago	19	13	19	11	-02
Moscow*	16	42	16	43	01	Lima	18	09	18	10	01

(D) Rabee Al'akher,1443 A.H.
The first day of Rabee Al'akher, 1443 A.H. is adopted to be Saturday, 6.11.2021 A.D.

DAY	H	D	H	D	H	D	H	D	H	D
Saturday	1	6	8	13	15	20	22	27	29	4
Sunday	2	7	9	14	16	21	23	28		
Monday	3	8	10	15	17	22	24	29		
Tuesday	4	9	11	16	18	23	25	30		
Wednesday	5	10	12	17	19	24	26	Dec.		
Thursday	6	11	13	18	20	25	27	2		
Friday	7	12	14	19	21	26	28	3		

(*) Moon not new


Jumade Al’oula

Birth day conditions of Jumade Al'oula - crescent, 1443 A.H.

Jumade Al'oula's crescent is born immediately after the conjunction that occurs on Saturday, 29 Rabee Al'akher's 1443 A.H., corresponding to 4/12/2021 A.D. (Sight Day) at seven o'clock and 43 minutes a.m. (U.T.)

On the sight day (Saturday, 4/12/2021 A.D.):

- **The crescent lags sunset in Makkah by 10 minutes.**
- **The crescent lags sunset in Cairo by 8 minutes.**
- **Generally the Crescent lags (2 – 21 minutes) after sunset in Arabic and Islamic countries.**

- **Consequently,The first day of Jumade Al'oula 1443A.H. is adopted to be Sunday, 5/12/2021 A.D. according to the astronomical calculations.**

Ephemeris of Jumade Al'oula,1443 A.H.

(a) Phases of the Moon (U.T.)

Conjuction	First Quarter	Full Moon	Last Quarter
 Saturday, 4.12.2021 A.D. 07 h 43 m	 Saturday, 11.12.2021 A.D. 01 h 36 m	 Sunday, 19.12.2021 A.D. 04 h 36 m	 Monday, 27.12.2021 A.D. 02 h 24 m
First day	**Last day**	**Length**	
Sunday, 5.12.2021 A.D.	Monday, 3.01.2022 A.D.	30 days	

(b) Observing conditions in Egypt for the crescent on the sight day (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent lags	Relative altitude (degree)	Relative azimuth (degree)
	h	m	h	m	m		
Halayib	16	49	16	58	09	1.361	3.354 S
Toshka	17	07	17	17	10	1.478	3.480 S
Aswan	17	00	17	09	09	1.330	3.525 S
Qena	16	56	17	05	09	1.179	3.613 S
Al'kharga	17	08	17	17	09	1.302	3.647 S
Assiut	17	01	17	09	08	1.142	3.691 S
Sohag	17	00	17	09	09	1.177	3.654 S
Fayoum	16	57	17	05	08	0.984	3.773 S
Tur	16	49	16	57	08	0.997	3.661 S
Saint Catherine	16	47	16	55	08	0.964	3.663 S
Taba	16	41	16	48	07	0.870	3.666 S
Cairo	16	54	17	02	08	0.916	3.785 S
Tanta	16	54	17	01	07	0.865	3.814 S
Alexandria	16	57	17	04	07	0.856	3.856 S
Port Said	16	47	16	54	07	0.795	3.790 S
Salloum	17	15	17	23	08	0.946	4.004 S

(c) Observing conditions of the crescent on the sight day

(1) In some Arab and Islamic cities (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent Lags	City	Sunset (Local time)		Moonset (Local time)		Crescent Lags
	h	m	h	m	m		h	m	h	m	m
Dakar	17	39	18	00	21	Makkah	17	37	17	47	10
Nouakchott	17	27	17	46	19	Jerusalem	16	34	16	41	07
Marrakech	17	28	17	41	13	Baghdad	16	54	16	58	04
Fez	17	10	17	22	12	Aden	17	32	17	43	11
Lagos	18	29	18	49	20	Riyadh	17	04	17	11	07
Algeria	16	31	16	40	09	Kuwait	16	49	16	54	05
Tunisia	17	02	17	10	08	Manama	16	45	16	51	06
Tripoli - Libya	17	00	17	09	09	Tehran	16	50	16	52	02
Khartoum	17	17	17	29	12	Doha	16	43	16	49	06
Mogadishu	17	49	18	02	13	Abu Dhabi	17	33	17	39	06
Ankara	16	23	16	26	03	Dubai	17	28	17	33	05
Amman	16	31	16	37	06	Muscat	17	18	17	23	05
Damascus	16	26	16	31	05	Karachi	17	42	17	46	04
Jizan	17	35	17	45	10	Kuala Lumpur	19	01	19	05	04
Medina	17	32	17	41	09	Jakarta	17	56	18	01	05

(2) In some Western capitals (L.T.)

Washington	16	45	17	05	20	Cape Town	19	45	20	13	28
Ottawa	16	20	16	34	14	Brasilia	18	32	19	07	35
London	15	53	15	51	-02	Santiago	19	40	20	26	46
Moscow	15	59	15	47	-12	Lima	18	22	Next day		

(D) Jumade Al'oula,1443 A.H.

The first day of Jumade Al'oula, 1443 A.H. is adopted to Sunday, 5/12/2021 A.D.

DAY	H	D	H	D	H	D	H	D	H	D
Saturday			7	11	14	18	21	25	28	Jan.
Sunday	1	5	8	12	15	19	22	26	29	2
Monday	2	6	9	13	16	20	23	27	30	3
Tuesday	3	7	10	14	17	21	24	28		
Wednesday	4	8	11	15	18	22	25	29		
Thursday	5	9	12	16	19	23	26	30		
Friday	6	10	13	17	20	24	27	31		


Jumade Al’akhera

Birth day conditions of Jumade Al'akhera - crescent,1443 A.H.

Jumade Al'akhera's crescent is born immediately after the conjunction that occurs at six o'clock and 34 minutes p.m. (U.T.) on Sunday, 29 Jumade Al'oula 1443A.H. , corresponding to 2/01/2022 A.D. (Sight Day).

On the sight day (Sunday, 2/01/2022 A.D.):

- **In Cairo and in all Arab and Islamic countries, the crescent will not be born before sunset on that day, except Dakar and Nouakchott .**
- **In Makkah Moonset will occur before Sunset by 21minutes.**
- **In Cairo Moonset will occur before Sunset by 24 minutes.**
- **In Arabic and Islamic countries Moonset will occur before Sunset by (7 - 32 minutes).**
- **Therefore, Monday, 3.01.2022 A.D. is the day completing the month of Jumade Al'oula 1443 A.H.**

Consequently,The first day of Jumade Al'akhera 1443 A.H. is adopted to be Tuesday, 4.01.2022 A.D. according to the astronomical calculations.

Ephemeris of Jumade Al'akhera,1443 A.H.

(a) Phases of the Moon (U.T.)

Conjunction	First Quarter	Full Moon	Last Quarter
			
Sunday, 2.01.2022 A.D. 18 h 34m	Sunday, 9.01.2022 A.D. 18 h 11 m	Monday, 17.01.2022 A.D. 23 h 49 m	Tuesday, 25.01.2022 A.D. 13 h 41 m
First day	**Last day**	**Length**	
Tuesday, 4.01.2022 A.D.	Tuesday, 1.02.2022 A.D.	29 days	

(b) Observing conditions in Egypt for the crescent on the sight day (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent lags	Relative altitude (degree)	Relative azimuth (degree)
	h	m	h	m	m		
Halayib	17	02	16	41	-21	Moon not new	
Toshka	17	20	17	00	-20	Moon not new	
Aswan	17	13	16	52	-21	Moon not new	
Qena	17	09	16	47	-22	Moon not new	
Al'kharga	17	20	16	59	-21	Moon not new	
Assiut	17	13	16	51	-22	Moon not new	
Sohag	17	12	16	50	-22	Moon not new	
Fayoum	17	10	16	46	-24	Moon not new	
Tur	17	01	16	38	-23	Moon not new	
Saint Catherine	16	59	16	35	-24	Moon not new	
Taba	16	53	16	29	-24	Moon not new	
Cairo	17	06	16	42	-24	Moon not new	
Tanta	17	06	16	41	-25	Moon not new	
Alexandria	17	09	16	44	-25	Moon not new	
Port Said	16	59	16	34	-25	Moon not new	
Salloum	17	27	17	03	-24	Moon not new	

(c) Observing conditions of the crescent on the sight day

(1) In some Arab and Islamic cities (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent Lags	City	Sunset (Local time)		Moonset (Local time)		Crescent Lags
	h	m	h	m	m		h	m	h	m	m
Dakar	17	52	17	45	-07	Makkah*	17	50	17	29	-21
Nouakchott	17	40	17	31	-09	Jerusalem*	16	47	16	21	-26
Marrakech*	17	40	17	22	-18	Baghdad*	17	06	16	37	-29
Fez*	17	22	17	02	-20	Aden*	17	45	17	27	-18
Lagos*	18	43	18	35	-08	Riyadh*	17	17	16	53	-24
Algeria*	16	43	16	19	-24	Kuwait*	17	01	16	34	-27
Tunisia*	17	14	16	49	-25	Manama*	16	57	16	32	-25
Tripoli-Libya*	17	12	16	49	-23	Tehran*	17	02	16	30	-32
Khartoum*	17	30	17	13	-17	Doha*	16	56	16	31	-25
Mogadishu*	18	02	17	49	-13	Abu Dhabi	17	46	17	21	-25
Ankara*	16	35	16	03	-32	Dubai*	17	41	17	15	-26
Amman*	16	43	16	17	-26	Muscat	17	31	17	06	-25
Damascus*	16	38	16	11	-27	Karachi*	17	54	17	27	-27
Jizan*	17	48	17	29	-19	Kuala Lumpur*	19	15	18	51	-24
Medina*	17	45	17	23	-22	Jakarta*	18	11	17	49	-22

(2) In some Western capitals (L.T.)

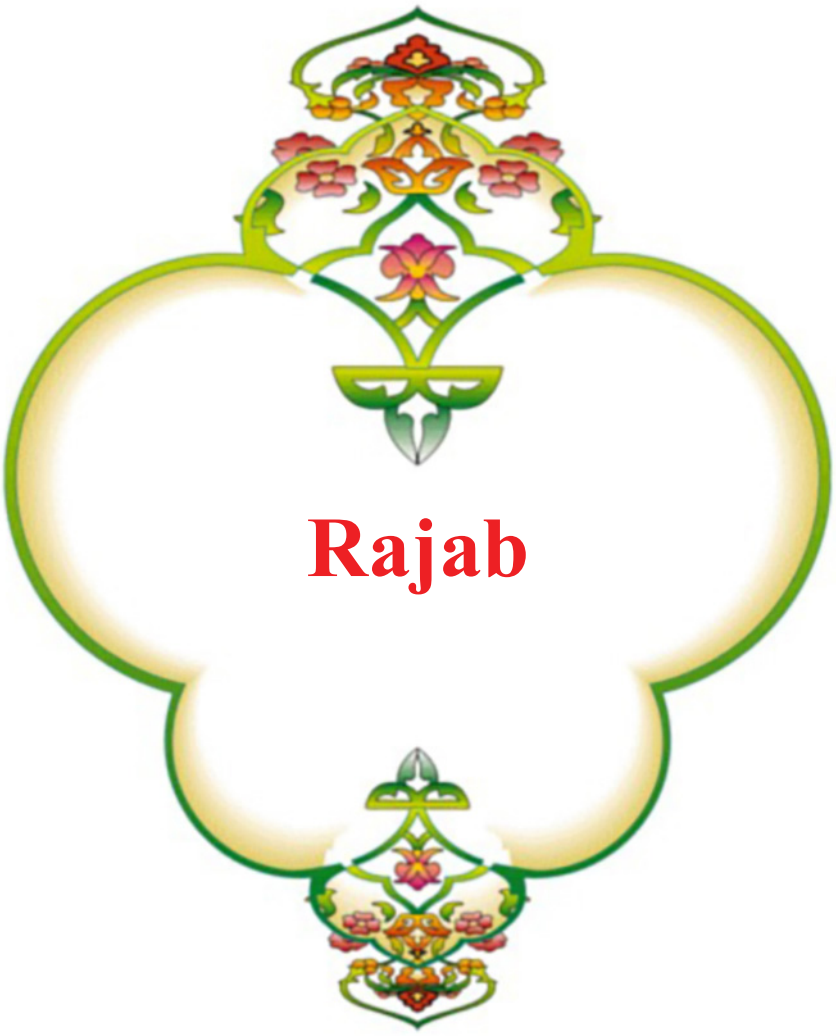
Washington	16	57	16	47	-10	Cape Town*	20	00	20	07	07
Ottawa	16	31	16	14	-17	Brasilia	18	46	18	57	11
London*	16	03	15	22	-41	Santiago	19	56	20	18	22
Moscow*	16	08	15	09	-59	Lima	18	37	18	51	14

(D) Jumade Al'akhera,1443 A.H.

The first day of Jumade Al'akhera, 1443 A.H. is adopted to be Tuesday, 4.01.2022 A.D.

DAY	H	D	H	D	H	D	H	D	H	D
Saturday			5	8	12	15	19	22	26	29
Sunday			6	9	13	16	20	23	27	30
Monday			7	10	14	17	21	24	28	31
Tuesday	1	4	8	11	15	18	22	25	29	Feb.
Wednesday	2	5	9	12	16	19	23	26		
Thursday	3	6	10	13	17	20	24	27		
Friday	4	7	11	14	18	21	25	28		

(*) Moon not new



Rajab

Birth day conditions of Rajab - crescent,1443 A.H.

Rajab's crescent is born immediately after the conjunction that occurs at five o'clock and 46 minutes a.m. (U.T.) on Tuesday, 29 Jumade Al'akhera 1443 A.H., corresponding to 1/02/2022 A.D. (Sight Day).

On the sight day (Tuesday, 1/02/2022 A.D.):

- **The crescent lags sunset in Makkah by 18 minutes.**
- **The crescent lags sunset in Cairo by 16 minutes.**
- **Generally the Crescent lags (9 – 31 minutes) after sunset in Arabic and Islamic countries.**

Consequently, The first day of Rajab 1443 A.H. is adopted to be Wednesday, 2.02.2022 A.D. according to the astronomical calculations.

Ephemeris of Rajab,1443 A.H.

(a) Phases of the Moon (U.T.)

Conjunction	First Quarter	Full Moon	Last Quarter
 Tuesday, 1.02.2022 A.D. 05 h 46 m	 Tuesday, 8.02.2022 A.D. 13h 50 m	 Wednesday, 16.02.2022 A.D. 16 h 57 m	 Wednesday, 23.02.2022 A.D. 22 h 33 m
First day	**Last day**	**Length**	
Wednesday, 2.02.2022 A.D.	Thursday, 3.03.2022A.D.	30 days	

(b) Observing conditions in Egypt for the crescent on the sight day (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent lags	Relative altitude (degree)	Relative azimuth (degree)
	h	m	h	m	m		
Halayib	17	22	17	41	19	3.196	5.546 S
Toshka	17	41	18	00	19	3.335	5.596 S
Aswan	17	34	17	53	19	3.120	5.728 S
Qena	17	32	17	50	18	2.889	5.898 S
Al'kharga	17	42	18	01	19	3.060	5.857 S
Assiut	17	36	17	54	18	2.823	5.991 S
Sohag	17	35	17	53	18	2.880	5.937 S
Fayoum	17	34	17	51	17	2.580	6.154 S
Tur	17	25	17	42	17	2.614	6.048 S
Saint Catherine	17	23	17	39	16	2.565	6.068 S
Taba	17	18	17	34	16	2.421	6.125 S
Cairo	17	32	17	48	16	2.477	6.202 S
Tanta	17	31	17	47	16	2.396	6.256 S
Alexandria	17	35	17	51	16	2.378	6.297 S
Port Said	17	26	17	41	15	2.293	6.274 S
Salloum	17	53	18	10	17	2.501	6.373 S

(c) Observing conditions of the crescent on the sight day

(1) In some Arab and Islamic cities (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent Lags	City	Sunset (Local time)		Moonset (Local time)		Crescent Lags
	h	m	h	m	m		h	m	h	m	m
Dakar	18	08	18	39	31	Makkah	18	10	18	28	18
Nouakchott	17	58	18	28	30	Jerusalem	17	13	17	28	15
Marrakech	18	06	18	29	23	Baghdad	17	33	17	45	12
Fez	17	50	18	11	21	Aden	18	01	18	22	21
Lagos	18	55	19	24	29	Riyadh	17	38	17	54	16
Algeria	17	13	17	31	18	Kuwait	17	25	17	39	14
Tunisia	17	44	18	01	17	Manama	17	20	17	34	14
Tripoli-Libya	17	39	17	57	18	Tehran	17	31	17	40	09
Khartoum	17	47	18	09	22	Doha	17	18	17	33	15
Mogadishu	18	13	18	37	24	Abu Dhabi	18	08	18	22	14
Ankara	17	07	17	17	10	Dubai	18	03	18	17	14
Amman	17	10	17	24	14	Muscat	17	52	18	06	14
Damascus	17	05	17	19	14	Karachi	18	16	18	28	12
Jizan	18	05	18	25	20	Kuala Lumpur	19	26	19	40	14
Medina	18	07	18	24	17	Jakarta	18	17	18	34	17

(2) In some Western capitals (L.T.)

Washington	17	29	18	02	33	Cape Town	19	51	20	29	38
Ottawa	17	09	17	39	30	Brasilia	18	48	19	30	42
London	16	50	16	57	07	Santiago	19	46	20	34	48
Moscow*	17	02	16	55	-07	Lima	18	40	19	25	45

(D) Rajab,1443 A.H.

The first day of Rajab, 1443 A.H. is adopted to be Wednesday, 2.02.2022 A.D.

DAY	H	D	H	D	H	D	H	D	H	D
Saturday			4	5	11	12	18	19	25	26
Sunday			5	6	12	13	19	20	26	27
Monday			6	7	13	14	20	21	27	28
Tuesday			7	8	14	15	21	22	28	March
Wednesday	1	2	8	9	15	16	22	23	29	2
Thursday	2	3	9	10	16	17	23	24	30	3
Friday	3	4	10	11	17	18	24	25		

Sha’aban

Birth day conditions of Sha'aban - crescent,1443 A.H.

Sha'aban's crescent is born immediately after the conjunction that occurs at five o'clock and 35 minutes p.m. (U.T.) on Wednesday, 29 Rajab 1443 A.H., corresponding to 2/03/2022 A.D. (Sight Day).

On the sight day (Wednesday, 2/03/2022 A.D.):

- **In Cairo and in all Arabic and Islamic countries, the crescent will not be born before sunset on that day, except Dakar, Nouakchott, Marrakech, Fez, Lagos and Algeria.**
- **In Makkah Moonset will occur before Sunset by 10 minutes.**
- **In Cairo Moonset will occur before Sunset by 12 minutes.**
- **In Arabic and Islamic countries Moonset will occur before Sunset by (2 - 20 minutes).**
- **In Dakar Moonset will occur after Sunset by two minutes.**
- **In Nouakchott Moonset will occur after Sunset by one minute.**
- **Therefore, Thursday, 3.03.2022 A.D. is the day completing the month of Rajab 1443 A.H.**

Consequently, The first day of Sha'aban 1443 A.H. is adopted to be Friday, 4.03.2022 A.D. according to the astronomical calculations.

Ephemeris of Sha'aban,1443 A.H.

(a) Phases of the Moon (U.T.)

Conjunction	First Quarter	Full Moon	Last Quarter
 Wednesday, 2.03.2022 A.D. 17 h 35 m	 Thursday, 10.03.2022 A.D. 10 h 46 m	 Friday, 18.03.2022 A.D. 07 h 18 m	 Friday, 25.03.2022 A.D. 05 h 37 m
First day	**Last day**	**Length**	
Friday, 4.03.2022 A.D.	Friday, 1.04.2022 A.D.	29 days	

(b) Observing conditions in Egypt for the crescent on the sight day (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent lags	Relative altitude (degree)	Relative azimuth (degree)
	h	m	h	m	m		
Halayib	17	37	17	28	-09	Moon not new	
Toshka	17	56	17	47	-09	Moon not new	
Aswan	17	51	17	41	-10	Moon not new	
Qena	17	51	17	40	-11	Moon not new	
Al'kharga	18	01	17	51	-10	Moon not new	
Assiut	17	56	17	45	-11	Moon not new	
Sohag	17	55	17	44	-11	Moon not new	
Fayoum	17	56	17	44	-12	Moon not new	
Tur	17	46	17	34	-12	Moon not new	
Saint Catherine	17	44	17	32	-12	Moon not new	
Taba	17	40	17	27	-13	Moon not new	
Cairo	17	54	17	42	-12	Moon not new	
Tanta	17	55	17	42	-13	Moon not new	
Alexandria	17	59	17	46	-13	Moon not new	
Port Said	17	49	17	36	-13	Moon not new	
Salloum	18	17	18	05	-12	Moon not new	

(c) Observing conditions of the crescent on the sight day
In some Arab and Islamic cities (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent Lags	City	Sunset (Local time)		Moonset (Local time)		Crescent Lags
	h	m	h	m	m		h	m	h	m	m
Dakar	18	18	18	20	02	Makkah*	18	25	18	15	-10
Nouakchott	18	10	18	11	01	Jerusalem*	17	37	17	23	-14
Marrakech	18	30	18	24	-06	Baghdad*	17	59	17	42	-17
Fez	18	17	18	09	-08	Aden*	18	09	18	02	-07
Lagos	18	58	19	00	02	Riyadh*	17	55	17	43	-12
Algeria	17	43	17	31	-12	Kuwait*	17	47	17	32	-15
Tunisia*	18	14	18	01	-13	Manama*	17	39	17	25	-14
Tripoli-Libya*	18	04	17	53	-11	Tehran*	18	00	17	40	-20
Khartoum*	17	57	17	51	-06	Doha*	17	36	17	22	-14
Mogadishu*	18	13	18	11	-02	Abu Dhabi	18	25	18	11	-14
Ankara*	17	41	17	22	-19	Dubai*	18	21	18	07	-14
Amman*	17	34	17	19	-15	Muscat	18	08	17	55	-13
Damascus*	17	32	17	16	-16	Karachi*	18	34	18	18	-16
Jizan*	18	16	18	08	-08	Kuala Lumpur*	19	27	19	16	-11
Medina*	18	24	18	13	-11	Jakarta*	18	11	18	04	-07

In some Western capitals (L.T.)

Washington	18	01	18	04	03	Cape Town*	19	21	19	36	15
Ottawa	17	51	17	49	-02	Brasilia	18	34	18	50	16
London	17	42	17	19	-23	Santiago	19	17	19	40	23
Moscow*	18	05	17	27	-38	Lima	18	29	18	48	19

(D) Sha'aban,1443 A.H.
The first day of Sha'aban, 1443A.H. is adopted to be Friday, 4.03.2022 A.D.

DAY	H	D	H	D	H	D	H	D	H	D
Saturday			2	5	9	12	16	19	23	26
Sunday			3	6	10	13	17	20	24	27
Monday			4	7	11	14	18	21	25	28
Tuesday			5	8	12	15	19	22	26	29
Wednesday			6	9	13	16	20	23	27	30
Thursday			7	10	14	17	21	24	28	31
Friday	1	4	8	11	15	18	22	25	29	Apr.

(*) Moon not new


Ramadan

Birth day conditions of Ramadan - crescent,1443 A.H.

Ramadan's crescent is born immediately after the conjunction that occurs at six o'clock and 25 minutes a.m. (U.T.) on Friday, 29 Sha'aban 1443 A.H., corresponding to 1/04/2022 A.D. (Sight day).

On the sight day (Friday, 1/04/2022A.D.):

- **The crescent lags sunset in both Makkah and Cairo by 17 minutes.**
- **Generally the Crescent lags (10 – 25 minutes) after sunset in Arabic and Islamic countries.**

Consequently, The first day of Ramadan 1443 A.H. is adopted to be Saturday, 2.04.2022 A.D. according to the astronomical calculations.

Ephemeris of Ramadan,1443 A.H.

(a) Phases of the Moon (U.T.)

Conjunction	First Quarter	Full Moon	Last Quarter
 Friday, 1.04.2022 A.D. 06 h 25 m	 Saturday, 9.04.2022 A.D. 06 h 48 m	 Saturday, 16.04.2022 A.D. 18 h 55 m	 Saturday, 23.04.2022 A.D. 11 h 57 m
First day	**Last day**	**Length**	
Saturday, 2.04.2022 A.D.	Sunday, 1.05.2022 A.D.	30 days	

(b) Observing conditions in Egypt for the crescent on the sight day (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent lags	Relative altitude (degree)	Relative azimuth (degree)
	h	m	h	m	m		
Halayib	17	48	18	05	17	3.184	3.023 S
Toshka	18	07	18	25	18	3.322	3.034 S
Aswan	18	04	18	21	17	3.212	3.171 S
Qena	18	05	18	23	18	3.112	3.341 S
Al'kharga	18	15	18	33	18	3.228	3.279 S
Assiut	18	12	18	29	17	3.107	3.424 S
Sohag	18	10	18	27	17	3.124	3.372 S
Fayoum	18	14	18	32	18	3.000	3.596 S
Tur	18	03	18	20	17	2.972	3.507 S
Saint Catherine	18	02	18	19	17	2.944	3.532 S
Taba	17	58	18	15	17	2.862	3.604 S
Cairo	18	13	18	30	17	2.946	3.654 S
Tanta	18	14	18	31	17	2.911	3.712 S
Alexandria	18	19	18	36	17	2.919	3.749 S
Port Said	18	09	18	26	17	2.842	3.747 S
Salloum	18	38	18	56	18	3.052	3.786 S

(c) Observing conditions of the crescent on the sight day

(1) In some Arab and Islamic cities (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent Lags	City	Sunset (Local time)		Moonset (Local time)		Crescent Lags
	h	m	h	m	m		h	m	h	m	m
Dakar	18	22	18	47	25	Makkah	18	35	18	52	17
Nouakchott	18	17	18	42	25	Jerusalem	17	58	18	14	16
Marrakech	18	51	19	14	23	Baghdad	18	22	18	36	14
Fez	18	40	19	03	23	Aden	18	11	18	28	17
Lagos	18	55	19	18	23	Riyadh	18	09	18	24	15
Algeria	18	10	18	31	21	Kuwait	18	06	18	20	14
Tunisia	18	41	19	01	20	Manama	17	54	18	08	14
Tripoli-Libya	18	27	18	47	20	Tehran	18	25	18	38	13
Khartoum	18	02	18	20	18	Doha	17	50	18	04	14
Mogadishu	18	06	18	23	17	Abu Dhabi	18	38	18	52	14
Ankara	18	12	18	28	16	Dubai	18	35	18	49	14
Amman	17	55	18	11	16	Muscat	18	21	18	34	13
Damascus	17	55	18	11	16	Karachi	18	48	19	00	12
Jizan	18	22	18	39	17	KualaLumpur	19	21	19	31	10
Medina	18	37	18	53	16	Jakarta	17	58	18	09	11

(2) In some Western capitals (L.T.)

Washington	18	31	19	06	35	Cape Town	18	41	19	03	22
Ottawa	18	31	19	06	35	Brasilia	18	13	18	41	28
London	18	33	18	53	20	Santiago	18	37	19	06	29
Moscow	19	06	19	17	11	Lima	18	11	18	43	32

(D) Ramadan,1443 A.H.

The first day of Ramadan, 1443 A.H. is adopted to be Saturday, 2.04.2022 A.D.

DAY	H	D	H	D	H	D	H	D	H	D
Saturday	1	2	8	9	15	16	22	23	29	30
Sunday	2	3	9	10	16	17	23	24	30	May
Monday	3	4	10	11	17	18	24	25		
Tuesday	4	5	11	12	18	19	25	26		
Wednesday	5	6	12	13	19	20	26	27		
Thursday	6	7	13	14	20	21	27	28		
Friday	7	8	14	15	21	22	28	29		

Ramadan's calendar 1443 AH
Cairo, Egypt
April 2022 / May 2022 AD

Hijri date Ramadan	Gregorian date	Days of the week	Duration of fasting hours	Suhoor	Imsak	Fajr	Shorouk	Dhuhr	Asr	Maghrib	Isha
				AM	AM	AM	AM	AM	P M	P M	P M
			H:M	H:M	H:M	H:M	H:M	H:M	H:M	H:M	H:M
1	April 2	Sat	14:19	1:55	3:55	4:15	5:43	11:58	3:30	6:14	7:33
2	3	Sun	14:21	1:54	3:54	4:14	5:42	11:58	3:30	6:15	7:34
3	4	Mon	14:23	1:52	3:52	4:12	5:41	11:58	3:30	6:15	7:34
4	5	Tue	14:25	1:51	3:51	4:11	5:40	11:58	3:30	6:16	7:35
5	6	Wed	14:27	1:50	3:50	4:10	5:39	11:57	3:30	6:17	7:36
6	7	Thu	14:29	1:48	3:48	4:08	5:37	11:57	3:30	6:17	7:37
7	8	Fri	14:31	1:47	3:47	4:07	5:36	11:57	3:30	6:18	7:37
8	9	Sat	14:32	1:46	3:46	4:06	5:35	11:56	3:30	6:18	7:38
9	10	Sun	14:35	1:44	3:44	4:04	5:34	11:56	3:30	6:19	7:39
10	11	Mon	14:37	1:43	3:43	4:03	5:33	11:56	3:30	6:20	7:40
11	12	Tue	14:38	1:42	3:42	4:02	5:32	11:56	3:30	6:20	7:41
12	13	Wed	14:41	1:40	3:40	4:00	5:30	11:55	3:30	6:21	7:42
13	14	Thu	14:43	1:39	3:39	3:59	5:29	11:55	3:30	6:22	7:42
14	15	Fri	14:45	1:37	3:37	3:57	5:28	11:55	3:30	6:22	7:43
15	16	Sat	14:47	1:36	3:36	3:56	5:27	11:55	3:30	6:23	7:44
16	17	Sun	14:49	1:35	3:35	3:55	5:26	11:54	3:30	6:24	7:45
17	18	Mon	14:51	1:33	3:33	3:53	5:25	11:54	3:30	6:24	7:46
18	19	Tue	14:53	1:32	3:32	3:52	5:24	11:54	3:30	6:25	7:46
19	20	Wed	14:54	1:31	3:31	3:51	5:23	11:54	3:30	6:25	7:47
20	21	Thu	14:57	1:29	3:29	3:49	5:22	11:54	3:30	6:26	7:48
21	22	Fri	14:59	1:28	3:28	3:48	5:21	11:53	3:29	6:27	7:49
22	23	Sat	15:00	1:27	3:27	3:47	5:19	11:53	3:29	6:27	7:50
23	24	Sun	15:02	1:26	3:26	3:46	5:18	11:53	3:29	6:28	7:51
24	25	Mon	15:05	1:24	3:24	3:44	5:18	11:53	3:29	6:29	7:52
25	26	Tue	15:06	1:23	3:23	3:43	5:17	11:53	3:29	6:29	7:52
26	27	Wed	15:08	1:22	3:22	3:42	5:16	11:52	3:29	6:30	7:53
27	28	Thu	15:10	1:21	3:21	3:41	5:15	11:52	3:29	6:31	7:54
28	29	Fri	15:12	1:19	3:19	3:39	5:14	11:52	3:29	6:31	7:55
29	30	Sat	15:14	1:18	3:18	3:38	5:13	11:52	3:29	6:32	7:56
30	May 1	Sun	15:15	1:17	3:17	3:37	5:12	11:52	3:29	6:32	7:57

Eid al-Fitr will be held on (Monday, 2/5/2022 AD) and its prayer will be in Cairo at 5:36 AM.


Shawal

Birth day conditions of Shawal - crescent,1443 A.H.

Shawal's crescent is born immediately after the conjunction that occurs at eight o'clock and 28 minutes p.m. (U.T.) on Saturday, 29 Ramadan 1443 A.H. , corresponding to 30/04/2022 A.D. (Sight Day).

On the sight day (Saturday, 30/04/2022 A.D.):

- **In Cairo and in all Arabic and Islamic countries, the crescent will not be born before sunset on that day.**
- **In both Makkah and Cairo Moonset will occur before Sunset by 15 minutes.**
- **In Arabic and Islamic countries Moonset will occur before Sunset by (6 - 20 minutes).**
- **Therefore, Sunday, 1.05.2022 A.D. is the day completing the month of Ramadan 1443 A.H.**

Consequently, The first day of Shawal (Eid al-Fitr) 1443 A.H. is adopted to be Monday, 2.05.2022 A.D. according to the astronomical calculations.

Ephemeris of Shawal, 1443 A.H.

(a) Phases of the Moon (U.T.)

Conjunction	First Quarter	Full Moon	Last Quarter
			
Saturday, 30.04.2022 A.D. 20 h 28 m	Monday, 9.05.2022 A.D. 00 h 22 m	Monday, 16.05.2022 A.D. 04 h 14 m	Sunday, 22.05.2022 A.D. 18 h 43 m
First day	**Last day**	**Length**	
Monday, 2.05.2022 A.D.	Monday, 30.05.2022 A.D.	29 days	

(b) Observing conditions in Egypt for the crescent on the sight day (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent lags	Relative altitude (degree)	Relative azimuth (degree)
	h	m	h	m	m		
Halayib	17	59	17	44	-15	Moon not new	
Toshka	18	18	18	04	-14	Moon not new	
Aswan	18	16	18	02	-14	Moon not new	
Qena	18	20	18	05	-15	Moon not new	
Al'kharga	18	29	18	15	-14	Moon not new	
Assiut	18	28	18	13	-15	Moon not new	
Sohag	18	25	18	10	-15	Moon not new	
Fayoum	18	32	18	17	-15	Moon not new	
Tur	18	19	18	04	-15	Moon not new	
Saint Catherine	18	18	18	03	-15	Moon not new	
Taba	18	16	18	00	-16	Moon not new	
Cairo	18	31	18	16	-15	Moon not new	
Tanta	18	33	18	18	-15	Moon not new	
Alexandria	18	38	18	23	-15	Moon not new	
Port Said	18	29	18	14	-15	Moon not new	
Salloum	18	58	18	43	-15	Moon not new	

(c) Observing conditions of the crescent on the sight day

In some Arab and Islamic cities* (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent Lags	City	Sunset (Local time)		Moonset (Local time)		Crescent Lags
	h	m	h	m	m		h	m	h	m	m
Dakar	18	26	18	20	-06	Makkah	18	45	18	30	-15
Nouakchott	18	24	18	18	-06	Jerusalem	18	18	18	02	-16
Marrakech	19	11	19	02	-09	Baghdad	18	43	18	25	-18
Fez	19	02	18	52	-10	Aden	18	14	18	00	-14
Lagos	18	53	18	45	-08	Riyadh	18	22	18	05	-17
Algeria	18	35	18	23	-12	Kuwait	18	23	18	05	-18
Tunisia	19	06	18	53	-13	Manama	18	08	17	51	-17
Tripoli - Libya	18	48	18	35	-13	Tehran	18	49	18	29	-20
Khartoum	18	07	17	54	-13	Doha	18	03	17	46	-17
Mogadishu	18	01	17	48	-13	Abu Dhabi	18	51	18	33	-18
Ankara	18	42	18	24	-18	Dubai	18	48	18	30	-18
Amman	18	15	17	59	-16	Muscat	18	33	18	15	-18
Damascus	18	16	17	59	-17	Karachi	19	01	18	41	-20
Jizan	18	29	18	14	-15	Kuala Lumpur	19	17	18	57	-20
Medina	18	50	18	34	-16	Jakarta	17	48	17	28	-20

In some Western capitals (L.T.)

Washington	18	59	Next day			Cape Town *	18	06	18	00	-06
Ottawa	19	08	19	08	Zero	Brasilia	17	54	17	53	-01
London*	19	22	19	07	-15	Santiago	18	03	18	05	02
Moscow*	20	05	19	40	-25	Lima	17	56	17	58	02

(D) Shawal,1443 A.H.

The first day of Shawal, 1443 A.H. is adopted to be Monday, 2.05.2022 A.D.(Eid al-Fitr)

DAY	H	D	H	D	H	D	H	D	H	D
Saturday			6	7	13	14	20	21	27	28
Sunday			7	8	14	15	21	22	28	29
Monday	1	2	8	9	15	16	22	23	29	30
Tuesday	2	3	9	10	16	17	23	24		
Wednesday	3	4	10	11	17	18	24	25		
Thursday	4	5	11	12	18	19	25	26		
Friday	5	6	12	13	19	20	26	27		

(*) Moon not new

Zul’kada

Birth day conditions of Zul'kada crescent,1443 A.H.

Zul'kada's crescent is born immediately after the conjunction that occurs at 11 o'clock and 30 minutes a.m. (U.T.) on Monday, 29 Shawal 1443 A.H. , corresponding to 30/05/2022 A.D. (Sight Day).

On the sight day (Monday, 30/05/2022 A.D.):

- **The crescent lags sunset In Makkah by 7 minutes.**
- **The crescent lags sunset In Cairo by 11 minutes.**
- **Generally the crescent lags (4 - 18 minutes) after sunset in Arabic and Islamic countries.**
- **In both Kuala Lumpur and Jakarta, the crescent will not born on that day.**
- **In Kuala Lumpur Moonset will occur before Sunset by five minutes, and in Jakarta Moonset will occur before Sunset by seven minutes.**

Consequently, the first day of Zul'kada 1443 A.H. is adopted to be Tuesday, 31.05.2022 A.D. according to the astronomical calculations.

Ephemeris of Thul'kada,1443 A.H.

(a) Phases of the Moon (U.T.)

Conjunction	First Quarter	Full Moon	Last Quarter
 Monday, 30.05.2022A.D. 11 h 30 m	 Tuesday, 7.06.2022 A.D. 14 h 49 m	 Tuesday, 14.06.2022 A.D. 11 h 52 m	 Tuesday, 21.06.2022 A.D. 03 h 11 m
First day	**Last day**	**Length**	
Tuesday, 31.05.2022 A.D.	Wednesday, 29.06.2022 A.D.	30 days	

(b) Observing conditions in Egypt for the crescent on the sight day (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent lags	Relative altitude (degree)	Relative azimuth (degree)
	h	m	h	m	m		
Halayib	18	12	18	20	08	1.154	1.065 N
Toshka	18	32	18	41	09	1.293	1.024 N
Aswan	18	31	18	40	09	1.314	0.943 N
Qena	18	36	18	46	10	1.379	0.825 N
Al'kharga	18	44	18	54	10	1.424	0.849 N
Assiut	18	44	18	54	10	1.449	0.754 N
Sohag	18	41	18	51	10	1.417	0.795 N
Fayoum	18	50	19	01	11	1.514	0.621 N
Tur	18	36	18	46	10	1.411	0.713 N
Saint Catherine	18	36	18	46	10	1.411	0.697 N
Taba	18	34	18	44	10	1.411	0.650 N
Cairo	18	50	19	01	11	1.522	0.579 N
Tanta	18	53	19	05	12	1.547	0.531 N
Alexandria	18	58	19	09	11	1.585	0.492 N
Port Said	18	49	19	00	11	1.525	0.514 N
Salloum	19	18	19	30	12	1.719	0.420 N

(c) Observing conditions of the crescent on the sight day In some Arab and Islamic cities (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent Lags	City	Sunset (Local time)		Moonset (Local time)		Crescent Lags
	h	m	h	m	m		h	m	h	m	m
Dakar	18	35	18	49	14	Makkah	18	58	19	05	07
Nouakchott	18	35	18	50	15	Jerusalem	18	38	18	49	11
Marrakech	19	31	19	48	17	Baghdad	19	05	19	15	10
Fez	19	24	19	42	18	Aden	18	22	18	27	05
Lagos	18	57	19	06	09	Riyadh	18	37	18	44	07
Algeria	19	00	19	18	18	Kuwait	18	41	18	49	08
Tunisia	19	31	19	47	16	Manama	18	24	18	32	08
Tripoli - Libya	19	09	19	24	15	Tehran	19	13	19	22	09
Khartoum	18	16	18	23	07	Doha	18	19	18	25	06
Mogadishu	18	03	18	05	02	Abu Dhabi	19	06	19	12	06
Ankara	19	09	19	23	14	Dubai	19	04	19	10	06
Amman	18	35	18	46	11	Muscat	18	47	18	52	05
Damascus	18	38	18	49	11	Karachi	19	16	19	20	04
Jizan	18	39	18	45	06	Kuala Lumpur *	19	19	19	14	-05
Medina	19	05	19	13	08	Jakarta *	17	44	17	37	-07

(2) In some Western capitals (L.T.)

Washington	19	26	19	57	31	Cape Town	17	45	17	41	-04
Ottawa	19	42	20	17	35	Brasilia	17	46	17	56	10
London	20	06	20	32	26	Santiago	17	43	17	49	06
Moscow	20	59	21	22	23	Lima	17	49	18	04	15

(D) Zul'kada,1443 A.H.

The first day of Zul'kada, 1443A.H. is adopted to be Tuesday, 31.05.2022 A.D.

DAY	H	D	H	D	H	D	H	D	H	D
Saturday			5	4	12	11	19	18	26	25
Sunday			6	5	13	12	20	19	27	26
Monday			7	6	14	13	21	20	28	27
Tuesday	1	31	8	7	15	14	22	21	29	28
Wednesday	2	June	9	8	16	15	23	22	30	29
Thursday	3	2	10	9	17	16	24	23		
Friday	4	3	11	10	18	17	25	24		

(*) Moon not new

Zul’hejja

Birth day conditions of Zul'hejja - crescent,1443 A.H.

Zul'hejja's crescent is born immediately after the conjunction that occurs at two o'clock and 52 minutes a.m. (U.T.) on Wednesday, 29/06/2022 A.D. (The next day of sight Day).

On the sight day (Tuesday, 28/06/2022 A.D.):

- **In Cairo and in all Arabic and Islamic countries, the crescent will not be born before sunset on that day.**
- **In Makkah Moonset will occur before Sunset by 19 minutes.**
- **In Cairo Moonset will occur before Sunset by 14 minutes.**
- **In Arabic and Islamic countries Moonset will occur before Sunset by (6 - 39 minutes).**
- **Therefore, Wednesday, 29.06.2022 A.D. is the day completing the month of Zul'kada 1443 A.H.**

Consequently, The first day of Zul'hejja 1443 A.H. is adopted to be Thursday, 30.06.2022 A.D. according to the astronomical calculations.
Consequently, a pause Arafat 1443 A.H. is adopted to be Friday,8.07.2022 A.D. according to the astronomical calculations.
Consequently, Eid al-Adha 1443 A.H. is adopted to be Saturday, 9.07.2022 A.D. according to the astronomical calculations.

Ephemeris of Zul'hejja,1443 A.H.

(a) Phases of the Moon (U.T.)

Conjunction	First Quarter	Full Moon	Last Quarter
Wednesday, 29.06.2022 A.D. 02 h 52 m	Thursday, 7.07.2022 A.D. 02 h 14 m	Wednesday, 13.07.2022 A.D. 18 h 38 m	Wednesday, 20.07.2022 A.D. 14 h 19 m
First day	**Last day**	**Length**	
Thursday, 30.06.2022 A.D.	Friday, 29.07.2022 A.D.	30 days	

(b) Observing conditions in Egypt for the crescent on the sight day (L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent lags	Relative altitude (degree)	Relative azimuth (degree)
	h	m	h	m	m		
Halayib	18	21	18	02	-19	Moon not new	
Toshka	18	41	18	23	-18	Moon not new	
Aswan	18	40	18	23	-17	Moon not new	
Qena	18	45	18	29	-16	Moon not new	
Al'kharga	18	53	18	37	-16	Moon not new	
Assiut	18	53	18	38	-15	Moon not new	
Sohag	18	50	18	34	-16	Moon not new	
Fayoum	19	00	18	46	-14	Moon not new	
Tur	18	46	18	30	-16	Moon not new	
Saint Catherine	18	45	18	30	-15	Moon not new	
Taba	18	44	18	29	-15	Moon not new	
Cairo	19	00	18	46	-14	Moon not new	
Tanta	19	03	18	49	-14	Moon not new	
Alexandria	19	08	18	55	-13	Moon not new	
Port Said	18	59	18	45	-14	Moon not new	
Salloum	19	28	19	15	-13	Moon not new	

(c) Observing conditions of the crescent on the sight day
In some Arab and Islamic cities*(L.T.)

City	Sunset (Local time)		Moonset (Local time)		Crescent Lags	City	Sunset (Local time)		Moonset (Local time)		Crescent Lags
	h	m	h	m	m		h	m	h	m	m
Dakar	18	43	18	29	-14	Makkah	19	06	18	47	-19
Nouakchott	18	43	18	30	-13	Jerusalem	18	49	18	35	-14
Marrakech	19	41	19	33	-08	Baghdad	19	15	19	01	-14
Fez	19	35	19	28	-07	Aden	18	29	18	06	-23
Lagos	19	04	18	44	-20	Riyadh	18	46	18	27	-19
Algeria	19	11	19	05	-06	Kuwait	18	51	18	34	-17
Tunisia	19	42	19	34	-08	Manama	18	34	18	15	-19
Tripoli - Libya	19	19	19	09	-10	Tehran	19	23	19	09	-14
Khartoum	18	24	18	03	-21	Doha	18	28	18	09	-19
Mogadishu	18	09	17	42	-27	Abu Dhabi	19	15	18	55	-20
Ankara	19	21	19	12	-09	Dubai	19	13	18	53	-20
Amman	18	46	18	32	-14	Muscat	18	56	18	35	-21
Damascus	18	48	18	35	-13	Karachi	19	25	19	03	-22
Jizan	18	46	18	25	-21	Kuala Lumpur	19	25	18	50	-35
Medina	19	14	18	56	-18	Jakarta	17	49	17	10	-39

(2) In some Western capitals*(L.T.)

Washington	19	37	19	43	06	Cape Town	17	46	17	06	-40
Ottawa	19	55	20	06	11	Brasilia	17	50	17	29	-21
London	20	21	20	29	08	Santiago	17	44	17	16	-28
Moscow	21	17	21	26	09	Lima	17	54	17	38	-16

(D) Zul'hejja,1443 A.H.
The first day of Zul'hejja, 1443 A.H. is adopted to be Thursday, 30.06.2022 A.D.

DAY	H	D	H	D	H	D	H	D	H	D
Saturday			3	2	10	9	17	16	24	23
Sunday			4	3	11	10	18	17	25	24
Monday			5	4	12	11	19	18	26	25
Tuesday			6	5	13	12	20	19	27	26
Wednesday			7	6	14	13	21	20	28	27
Thursday	1	30	8	7	15	14	22	21	29	28
Friday	2	July	9	8	16	15	23	22	30	29

(*) Moon not new

Lunar and Solar Eclipses 1443 A.H.

Partial Lunar Eclipse
Friday, November 19, 2021 AD.

- The timing of its middle coincides with the timing of full moon, the month of Rabee Al'akher, 1443 AH.
- The Earth's shadow covers almost 97% of the moon's surface.
- It can be seen in and from the areas where the moon appears when it occurs including (Northern Europe - East Asia - the continent of Australia - the Americas - the Pacific Ocean - the Atlantic Ocean - the Indian Ocean – Antarctica).
- All phases of the eclipse from its beginning to its end will take approximately six hours and two minutes. The eclipse takes from the beginning of the first partial eclipse until the end of the second partial eclipse, a period of approximately three hours and twenty-eight minutes.
- It cannot be seen in Egypt.
- The next partial eclipse will occur on October 28, 2023 AD
- The following is a comprehensive statement about the phases of the eclipse for the areas in which it is seen:

Phenomenon	Time of Occurrence (local time of Cairo) h::m:s
The Beginning of The Penumbral Lunar Eclipse	08:02:29
The Beginning of The Partial Eclipse	09:18:41
Maximum of The Partial Eclipse	11:02:53
The End of The Partial Eclipse	12:47:04
The End of The Penumbral Lunar Eclipse	14:03:38

Partial Lunar Eclipse of 2021 Nov 19

Ecliptic Conjunction = 08:58:37.0 TD (= 08:57:24.4 UT)
Greatest Eclipse = 09:04:05.7 TD (= 09:02:53.1 UT)

Penumbral Magnitude = 2.0720 P. Radius = 1.1829° Gamma = -0.4552
Umbral Magnitude = 0.9742 U. Radius = 0.6434° Axis = 0.4104°

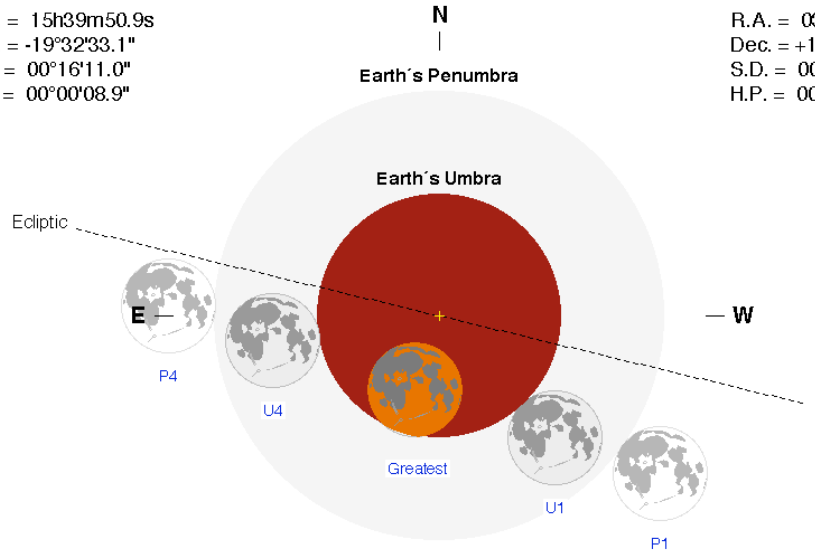
Saros Series = 126 Member = 46 of 72

Sun at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 15h39m50.9s
Dec. = -19°32'33.1"
S.D. = 00°16'11.0"
H.P. = 00°00'08.9"

Moon at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 03h40m24.8s
Dec. = +19°09'15.5"
S.D. = 00°14'44.5"
H.P. = 00°54'06.1"



Eclipse Durations

Penumbral = 06h01m29s
Umbral = 03h28m23s

ΔT = 73 s
Rule = CdT (Danjon)
Eph. = VSOP87/ELP2000-85

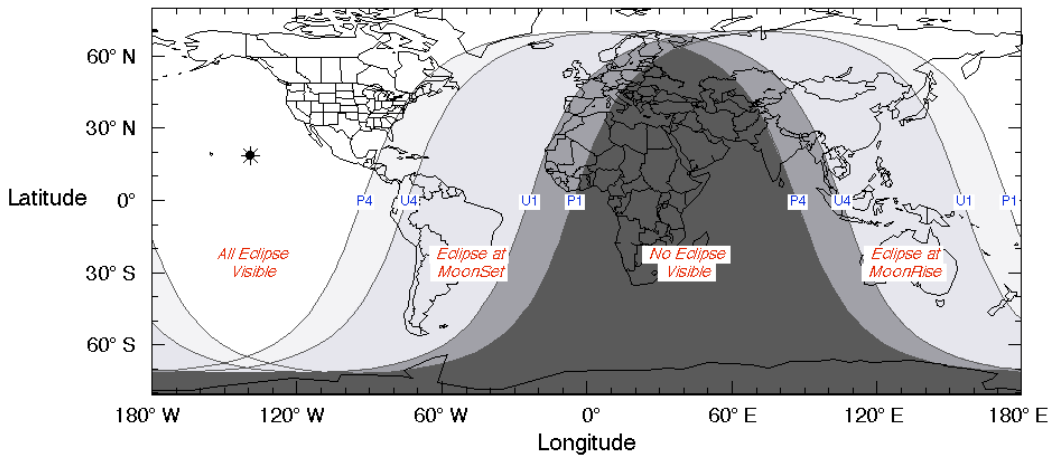
S

0 15 30 45 60
Arc-Minutes

F. Espenak, NASA's GSFC
eclipse.gsfc.nasa.gov/eclipse.html

Eclipse Contacts

P1 = 06:02:09 UT
U1 = 07:18:41 UT
U4 = 10:47:04 UT
P4 = 12:03:38 UT



2009 Apr 29

Total Solar Eclipse
Saturday, December 4, 2021 AD.

- **The timing of its middle coincides with the conjunction of the month of Jumade Al'oula 1443 AH.**
- **It is seen as a total eclipse in Antarctica.**
- **It can be seen as a partial eclipse in (South Australia - southern Africa - southern South America - Pacific Ocean - Atlantic Ocean - Indian Ocean – Antarctica).**
- **The total eclipse covers an area 419 km wide and will last 1 minute 54 seconds.**
- **At the maximum of the total eclipse, the lunar disk covers about 103.7 percent of the entire disk of the sun.**
- **The eclipse will take from its beginning to its end approximately a period of four hours and eight minutes.**
- **(It cannot be seen in Egypt).**
- **The next total eclipse will occur on April 8, 2024 AD.**
- **The following is a comprehensive statement about the phases of the eclipse for the areas in which it is seen:**

Phenomenon	Time of Occurrence (local time of Cairo) h::m:s
The Beginning of The Partial Eclipse	07:29:11
The Beginning of The Total Eclipse	09:00:01
Maximum of The Total Eclipse	09:33:22
The End of The Total Eclipse	10:06:29
The End of The Partial Eclipse	11:37:24

Total Solar Eclipse of 2021 Dec 04

Geocentric Conjunction = 07:56:04.9 UT J.D. = 2459552.830612
Greatest Eclipse = 07:33:22.5 UT J.D. = 2459552.814844

Eclipse Magnitude = 1.0367 Gamma = -0.9526

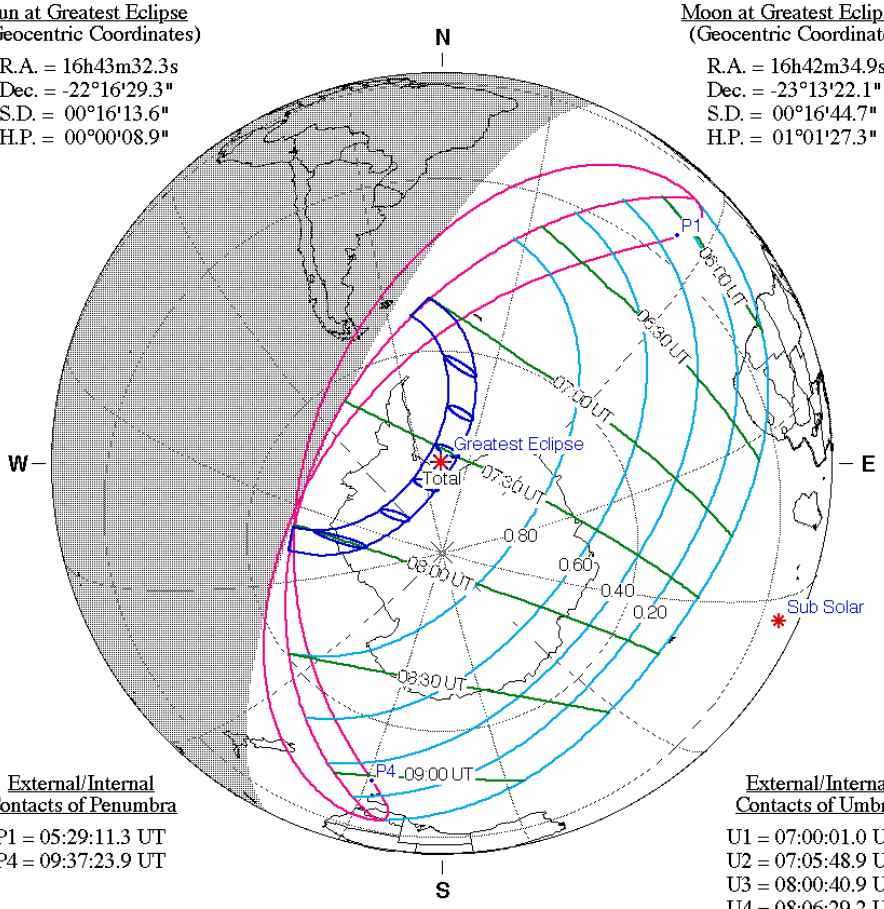
Saros Series = 152 Member = 13 of 70

Sun at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 16h43m32.3s
Dec. = -22°16'29.3"
S.D. = 00°16'13.6"
H.P. = 00°00'08.9"

Moon at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 16h42m34.9s
Dec. = -23°13'22.1"
S.D. = 00°16'44.7"
H.P. = 01°01'27.3"



External/Internal Contacts of Penumbra

P1 = 05:29:11.3 UT
P4 = 09:37:23.9 UT

External/Internal Contacts of Umbra

U1 = 07:00:01.0 UT
U2 = 07:05:48.9 UT
U3 = 08:00:40.9 UT
U4 = 08:06:29.2 UT

Local Circumstances at Greatest Eclipse

Lat. = 76°46.7'S Sun Alt. = 17.2°
Long. = 046°11.9'W Sun Azm. = 114.8°
Path Width = 418.6 km Duration = 01m54.4s

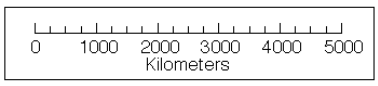
Ephemeris & Constants

Eph. = Newcomb/ILE
ΔT = 78.8 s
k1 = 0.2724880
k2 = 0.2722810
Δb = 0.0" Δl = 0.0"

Geocentric Libration
(Optical + Physical)

l = -0.23°
b = 1.26°
c = 6.09°

Brown Lun. No. = 1224



F. Espenak, NASA's GSFC - Fri, Jul 2,
sunearth.gsfc.nasa.gov/eclipse/eclipse.html

Partial Solar Eclipse
Saturday, April 30, 2022 AD.

- **The timing of its middle coincides with the conjunction of the month of Shawal for the year 1443 AH.**
- **It can be seen in (southern and western South America - the Pacific Ocean - The Atlantic Ocean - part of Antarctica).**
- **At the maximum of the partial eclipse, the disk of the moon covers about 64% of the disk of the sun.**
- **The partial eclipse from its beginning to its end will take approximately three hours and fifty-four minutes.**
- **It cannot be seen in Egypt.**
- **The following is a comprehensive statement about the phases of the eclipse for the areas in which it is seen:**

Phenomenon	Time of occurrence (local time of Cairo) h::m:s
The Beginning of The Partial Eclipse	20:45:13
Maximum of The Partial Eclipse	22:41:20
The End of The Partial Eclipse	00:37:56 Sunday, May 1, 2022 AD

Partial Solar Eclipse of 2022 Apr 30

Geocentric Conjunction = 19:40:42.5 UT J.D. = 2459700.319937
Greatest Eclipse = 20:41:20.2 UT J.D. = 2459700.362039

Eclipse Magnitude = 0.6389 Gamma = -1.1900

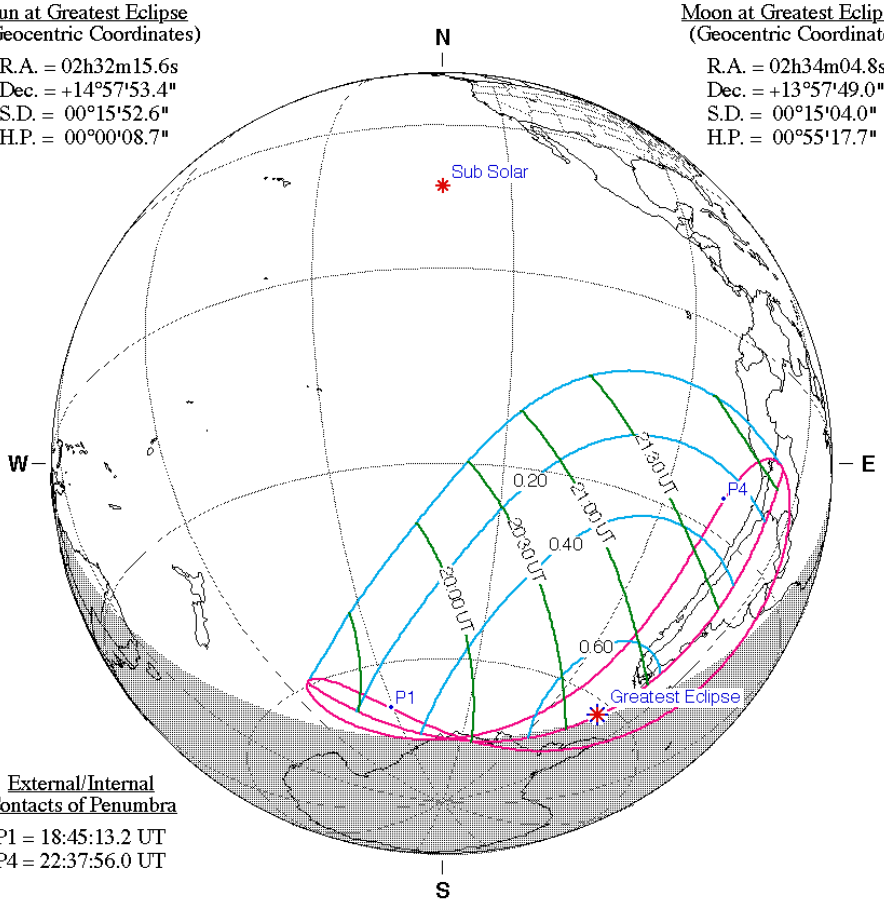
Saros Series = 119 Member = 66 of 71

Sun at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 02h32m15.6s
Dec. = +14°57'53.4"
S.D. = 00°15'52.6"
H.P. = 00°00'08.7"

Moon at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 02h34m04.8s
Dec. = +13°57'49.0"
S.D. = 00°15'04.0"
H.P. = 00°55'17.7"



External/Internal Contacts of Penumbra

P1 = 18:45:13.2 UT
P4 = 22:37:56.0 UT

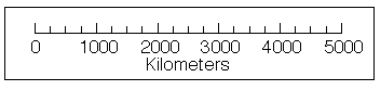
Ephemeris & Constants

Eph. = Newcomb/ILE
ΔT = 79.2 s
k1 = 0.2724880
k2 = 0.2722810
Δb = 0.0" Δl = 0.0"

Geocentric Libration
(Optical + Physical)

l = 4.01°
b = 1.40°
c = -16.62°

Brown Lun. No. = 1229



F. Espenak, NASA's GSFC - Fri, Jul 2,
sunearth.gsfc.nasa.gov/eclipse/eclipse.html

Total Lunar Eclipse
Monday, May 16, 2022 AD.

- The timing of its middle coincides with the timing of full moon, the month of Shawal, 1443 AH.
- The Earth's shadow covers approximately 141.4% of the moon's surface.
- It can be seen in the areas where the moon appears when it occurs, including (Europe, Africa, Asia, North America, South America, Pacific Ocean, Atlantic Ocean, Indian Ocean, Antarctica).
- All phases of the eclipse from its beginning to its end will take approximately five hours and nineteen minutes. The eclipse takes from the beginning of the first partial eclipse until the end of the second partial eclipse, a period of approximately three hours and twenty-seven minutes.
- The total eclipse takes approximately an hour and twenty-five minutes.
- The following is a comprehensive statement about the phases of the eclipse for the areas in which it is seen:

Phenomenon	Time of occurrence (local time of Cairo) h::m:s
The beginning of the penumbral lunar eclipse	03:32:07 seen in Cairo
The beginning of the partial eclipse	04:27:53 seen in Cairo
The beginning of the total eclipse	05:29:03 Not seen in Cairo
Maximum of the eclipse	06:11:28 Not seen in Cairo
The end of the total eclipse	06:53:56 Not seen in Cairo
The end of the partial eclipse	07:55:07 Not seen in Cairo
The end of the penumbral lunar eclipse	08:50:48 Not seen in Cairo

Total Lunar Eclipse of 2022 May 16

Ecliptic Conjunction = 04:15:18.8 TD (= 04:14:06.0 UT)
Greatest Eclipse = 04:12:41.6 TD (= 04:11:28.8 UT)

Penumbral Magnitude = 2.3726 P. Radius = 1.2854° Gamma = -0.2532
Umbral Magnitude = 1.4137 U. Radius = 0.7580° Axis = 0.2555°

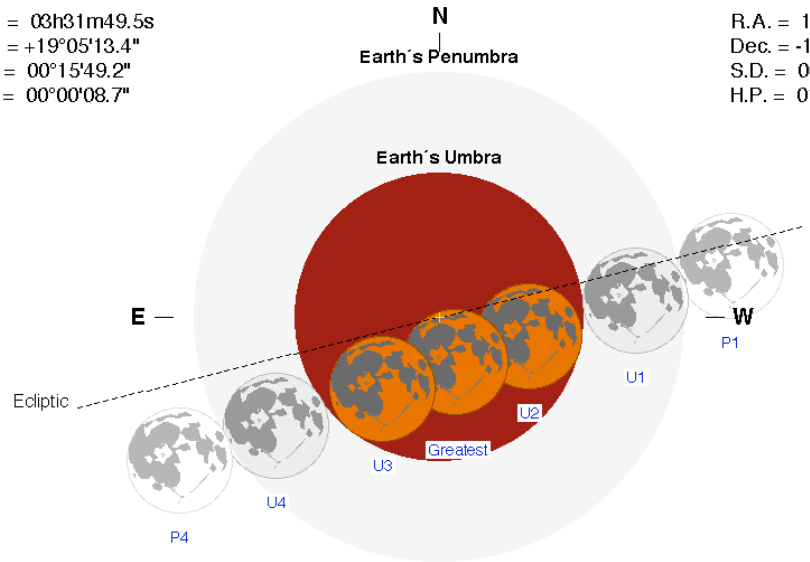
Saros Series = 131 Member = 34 of 72

Sun at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 03h31m49.5s
Dec. = +19°05'13.4"
S.D. = 00°15'49.2"
H.P. = 00°00'08.7"

Moon at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 15h31m27.8s
Dec. = -19°19'40.4"
S.D. = 00°16'29.9"
H.P. = 01°00'33.1"



Eclipse Durations

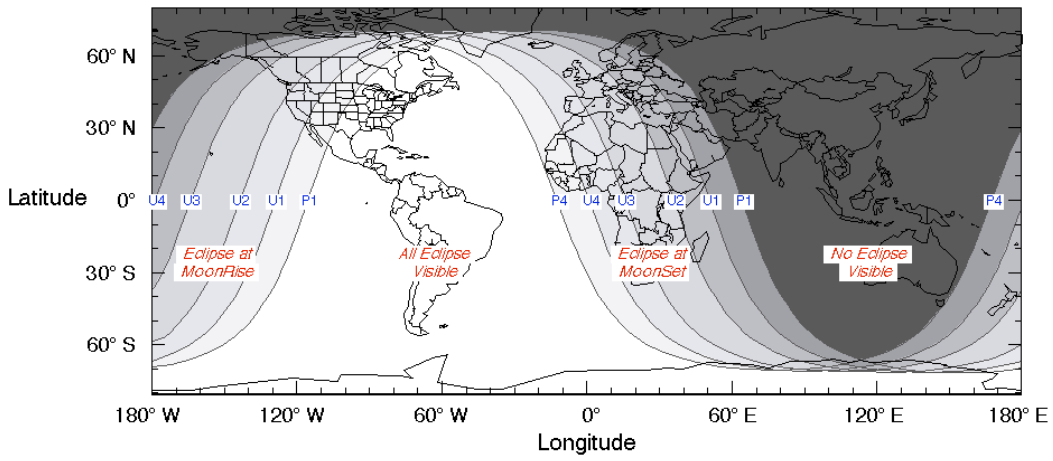
Penumbral = 05h18m40s
Umbral = 03h27m14s
Total = 01h24m53s

ΔT = 73 s
Rule = CdT (Danjon)
Eph. = VSOP87/ELP2000-85

F. Espenak, NASA's GSFC
eclipse.gsfc.nasa.gov/eclipse.html

Eclipse Contacts

P1 = 01:32:07 UT
U1 = 02:27:53 UT
U2 = 03:29:03 UT
U3 = 04:53:56 UT
U4 = 05:55:07 UT
P4 = 06:50:48 UT



2009 Apr 29

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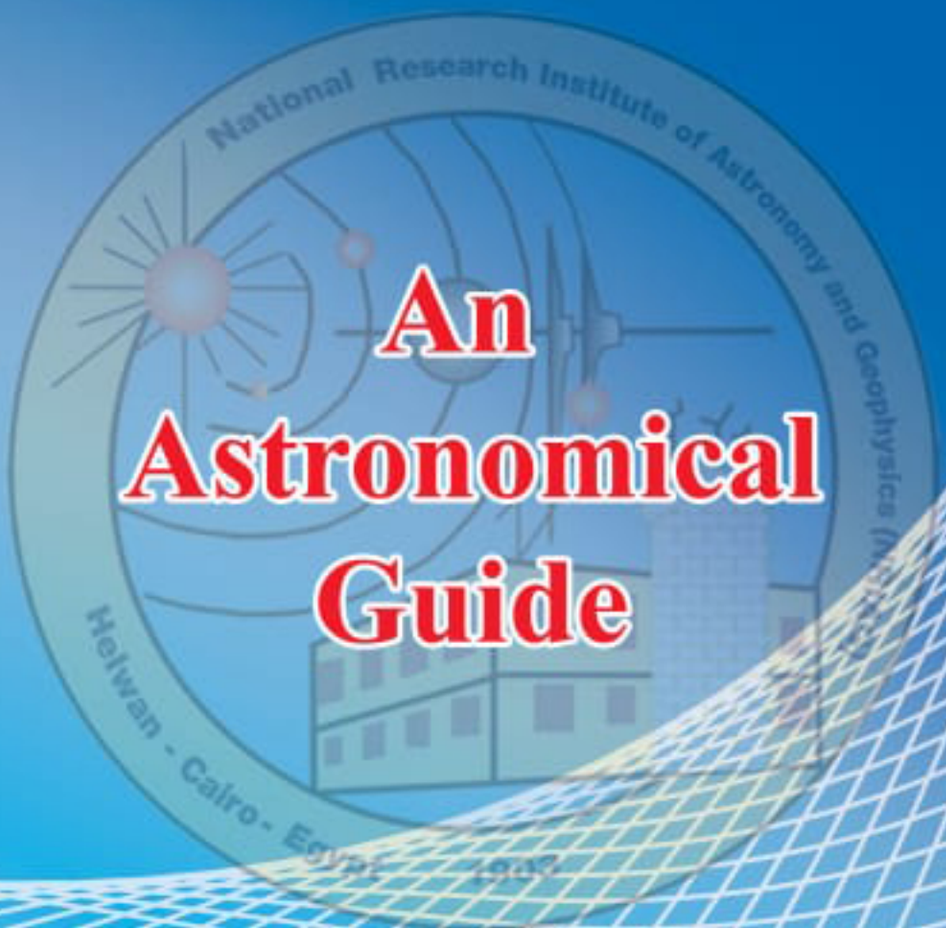
2021



An Astronomical Guide

For the Hijri Year

1443 H