

# ASTRONOMICAL INFORMATION SHEET No. 106



Prepared by

HM Nautical Almanac Office

**THE UNITED KINGDOM HYDROGRAPHIC OFFICE**

Admiralty Way, Taunton, Somerset, TA1 2DN



© Crown Copyright 2014

All rights reserved. No part of this information may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior written permission of the UK Hydrographic Office.

## ASTRONOMICAL AND CALENDARIAL DATA SHEET FOR 2019

### PHASES OF THE MOON

New Moon			First Quarter			Full Moon			Last Quarter		
	d	h m		d	h m		d	h m		d	h m
Jan.	6	01 28	Jan.	14	06 46	Jan.	21	05 16	Jan.	27	21 10
Feb.	4	21 04	Feb.	12	22 26	Feb.	19	15 54	Feb.	26	11 28
Mar.	6	16 04	Mar.	14	10 27	Mar.	21	01 43	Mar.	28	04 10
Apr.	5	08 50	Apr.	12	19 06	Apr.	19	11 12	Apr.	26	22 18
May	4	22 46	May	12	01 12	May	18	21 11	May	26	16 34
June	3	10 02	June	10	05 59	June	17	08 31	June	25	09 46
July	2	19 16	July	9	10 55	July	16	21 38	July	25	01 18
Aug.	1	03 12	Aug.	7	17 31	Aug.	15	12 29	Aug.	23	14 56
Aug.	30	10 37	Sept.	6	03 10	Sept.	14	04 33	Sept.	22	02 41
Sept.	28	18 26	Oct.	5	16 47	Oct.	13	21 08	Oct.	21	12 39
Oct.	28	03 38	Nov.	4	10 23	Nov.	12	13 34	Nov.	19	21 11
Nov.	26	15 06	Dec.	4	06 58	Dec.	12	05 12	Dec.	19	04 57
Dec.	26	05 13									

### SEASONS

			d	h	m
Vernal Equinox	—	Spring begins	Mar.	20	21 58
Summer Solstice	—	Summer begins	June	21	15 54
Autumnal Equinox	—	Autumn begins	Sept.	23	07 50
Winter Solstice	—	Winter begins	Dec.	22	04 19

### SUMMER TIME\*

In the United Kingdom BST, one hour in advance of GMT, will be kept from March 31<sup>d</sup> 01<sup>h</sup> to October 27<sup>d</sup> 01<sup>h</sup> GMT.\*

### ECLIPSES

Eclipses Online Portal—<http://astro.ukho.gov.uk/eclbin/query.cgi?year=2019>

1. A partial eclipse of the Sun on January 5-6 is visible from the eastern part of Asia, Japan, north-eastern Russia, the northern part of Micronesia, south-western Alaska and the Aleutian Islands. The eclipse begins at 23<sup>h</sup> 34<sup>m</sup> and ends at 03<sup>h</sup> 49<sup>m</sup>. The time of greatest eclipse is 01<sup>h</sup> 41<sup>m</sup>, when 0.71 of the Sun's diameter is obscured.
2. A total eclipse of the Moon on January 21 is visible from western Asia, most of Africa, Europe (including the British Isles), the Americas and the eastern part of Russia. The umbral phase begins at 03<sup>h</sup> 34<sup>m</sup> and ends at 06<sup>h</sup> 51<sup>m</sup>. Totality lasts from 04<sup>h</sup> 41<sup>m</sup> to 05<sup>h</sup> 44<sup>m</sup>.
3. A total eclipse of the Sun on July 2. The path of totality begins over the Pacific Ocean east of New Zealand and crosses the south-eastern part of French Polynesia, passing close to the Pitcairn Islands, crosses central Chile and ends over the River Plate estuary. The partial phase is visible from the southern part of the Pacific basin, southern parts of central America and South America except the north-easternmost part. The eclipse begins at 16<sup>h</sup> 55<sup>m</sup> and ends at 21<sup>h</sup> 51<sup>m</sup>; the total phase begins at 18<sup>h</sup> 02<sup>m</sup> and ends at 20<sup>h</sup> 44<sup>m</sup>. The maximum duration of totality is 4<sup>m</sup> 38<sup>s</sup>.
4. A partial eclipse of the Moon on July 16-17 is visible from most of Australasia, Indonesia, most of Asia, Africa, Europe (including the British Isles) and South America. The umbral eclipse begins at 20<sup>h</sup> 01<sup>m</sup> and ends at 23<sup>h</sup> 00<sup>m</sup>. The time of maximum eclipse is 21<sup>h</sup> 31<sup>m</sup> when 0.66 of the Moon's diameter is obscured.
5. An annular eclipse of the Sun on December 26th. The path of annularity begins over eastern Saudi Arabia and crosses Oman, southern India, the northern part of Sri Lanka, northern Sumatra, Singapore, Borneo, the southern Philippines and ends over northern Micronesia. The partial phase is visible from north-eastern Africa, the Middle East, Asia, Japan, Indonesia, the northern half of Australia and the western Pacific Ocean region. The eclipse begins at 02<sup>h</sup> 30<sup>m</sup> and ends at 08<sup>h</sup> 06<sup>m</sup>; the annular phase begins at 03<sup>h</sup> 36<sup>m</sup> and ends at 07<sup>h</sup> 00<sup>m</sup>. The maximum duration of annularity is 3<sup>m</sup> 34<sup>s</sup>.

All times are in GMT (UT, i.e. UT1)

\*[www.gov.uk/when-do-the-clocks-change](http://www.gov.uk/when-do-the-clocks-change)

PSP/CYH/SAB

2014 October

CALENDAR 2019

CHRONOLOGICAL CYCLES AND ERAS

Dominical Letter	F	Julian Period (year of)	6732
Epact	24	Roman Indiction	12
Golden Number (Lunar Cycle)	VI	Solar Cycle	12

  

Era	Year	Begins	Era	Year	Begins
Byzantine	7528	Sept. 14	Grecian (Seleucidæ)	2331	Sept. 14
Roman (AUC)	2772	Jan. 14			(or Oct. 14)
Nabonassar	2768	Apr. 19	Saka (Indian)	1941	Mar. 22
Japanese	2679	Jan. 1	Diocletian (Coptic)	1736	Sept. 12

RELIGIOUS CALENDARS

Epiphany	Jan. 6	Low Sunday	Apr. 28
Septuagesima Sunday	Feb. 17	Rogation Sunday	May 26
Quinquagesima Sunday	Mar. 3	Ascension Day—Holy Thursday	May 30
Ash Wednesday	Mar. 6	Whit Sunday—Pentecost	June 9
Quadragesima Sunday	Mar. 10	Trinity Sunday	June 16
Fourth Sunday in Lent—Mothering Sunday	Mar. 31	Corpus Christi	June 20
Palm Sunday	Apr. 14	First Sunday in Advent	Dec. 1
Good Friday	Apr. 19	Christmas Day (Wednesday)	Dec. 25
Easter Day	Apr. 21		
First Day of Passover (Pesach)	Apr. 20	Day of Atonement (Yom Kippur)	Oct. 9
Feast of Weeks (Shavuot)	June 9	First day of Tabernacles (Succoth)	Oct. 14
Jewish New Year (Rosh Hashanah)	5780 Sept. 30		
First day of Ramadân	May 6	Islamic New Year	1441 Sept. 1

All Jewish and Islamic dates above are tabular dates, which begin at sunset on the previous evening and end at sunset on the date tabulated. In practice, the dates of Islamic fasts and festivals are determined by an actual sighting of the appropriate new Moon.

CIVIL CALENDAR—UNITED KINGDOM

Accession of Queen Elizabeth II	Feb. 6	Coronation Day	June 2
St David (Wales)	Mar. 1	The Queen's Official Birthday*	June 8
Commonwealth Day	Mar. 11	Birthday of Prince Philip, Duke of Edinburgh	June 10
St Patrick (Ireland)	Mar. 17	Remembrance Sunday	Nov. 10
Birthday of Queen Elizabeth II	Apr. 21	Birthday of the Prince of Wales	Nov. 14
St George (England)	Apr. 23	St Andrew (Scotland)	Nov. 30

\*Date subject to confirmation

HOLIDAYS IN THE UNITED KINGDOM

The following list contains bank holidays, (compiled from the *Banking and Financial Dealings Act 1971*), common law holidays and days to be given in lieu for holidays which fall on a weekend. Dates given in *italic* are those which are subject to Royal proclamation or for Northern Ireland proclamation by the Secretary of State. There is no statutory requirement for a day to be given in lieu if one of the days falls at the weekend and is not covered by the act. In such cases probable dates are given in *italic* when they have not yet been authorised. Consult our web site at <http://astro.ukho.gov.uk/nao/online/index.html#calendar> for various UK Government links which will give the latest details.

	England and Wales	Northern Ireland	Scotland
New Year	Jan. 1	Jan. 1	Jan. 1 Jan. 2
St Patrick	—	Mar. 18	—
Good Friday	Apr. 19 ‡	Apr. 19 ‡	Apr. 19
Easter Monday	Apr. 22	Apr. 22	—
Early (Spring) May	May 6	May 6	May 6
Spring	May 27	May 27	May 27
Battle of the Boyne	—	July 12	—
Summer	Aug. 26	Aug. 26	Aug. 5
Christmas	Dec. 25 ‡	Dec. 25 ‡	Dec. 25 ‡
Boxing Day	Dec. 26	Dec. 26	Dec. 26

‡ Common Law Holiday

# Holiday falls on a Saturday

‡ Holiday falls on a Sunday

**Warning:** Clauses in the *Banking and Financial Dealings Act* allow the Government to alter dates at short notice.