

Astronomical Almanac for 2023 November

Blackpool, Lancs

Latitude: 53°49'08" N Longitude: 3°02'01" W

Elevation: 5 metres

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
			SR: 07:12	SR: 07:13	SR: 07:15	SR: 07:17
			SS: 16:39	SS: 16:37	SS: 16:35	SS: 16:33
			MR: 18:15	MR: 19:11	MR: 20:20	MR: 21:36
			MS: 12:12	MS: 13:11	MS: 13:52	MS: 14:19
					Jup Opp	
5	6	7	8	9	10	11
SR: 07:19	SR: 07:21	SR: 07:23	SR: 07:25	SR: 07:27	SR: 07:29	SR: 07:31
SS: 16:31	SS: 16:30	SS: 16:28	SS: 16:26	SS: 16:24	SS: 16:22	SS: 16:21
MR: 22:53	MR: None	MR: 00:09	MR: 01:23	MR: 02:37	MR: 03:51	MR: 05:07
MS: 14:37	MS: 14:50	MS: 15:00	MS: 15:08	MS: 15:15	MS: 15:23	MS: 15:32
LQ: 08:39						
12	13	14	15	16	17	18
SR: 07:33	SR: 07:35	SR: 07:37	SR: 07:38	SR: 07:40	SR: 07:42	SR: 07:44
SS: 16:19	SS: 16:17	SS: 16:16	SS: 16:14	SS: 16:13	SS: 16:11	SS: 16:10
MR: 06:26	MR: 07:50	MR: 09:16	MR: 10:40	MR: 11:53	MR: 12:46	MR: 13:21
MS: 15:42	MS: 15:57	MS: 16:19	MS: 16:53	MS: 17:46	MS: 18:59	MS: 20:27
	NM: 09:27	Ura Opp				Mar Con
19	20	21	22	23	24	25
SR: 07:46	SR: 07:48	SR: 07:50	SR: 07:51	SR: 07:53	SR: 07:55	SR: 07:57
SS: 16:08	SS: 16:07	SS: 16:06	SS: 16:05	SS: 16:03	SS: 16:02	SS: 16:01
MR: 13:44	MR: 13:59	MR: 14:11	MR: 14:21	MR: 14:30	MR: 14:40	MR: 14:53
MS: 22:00	MS: 23:32	MS: None	MS: 01:02	MS: 02:30	MS: 03:58	MS: 05:27
	FQ: 10:51					
26	27	28	29	30		
SR: 07:58	SR: 08:00	SR: 08:02	SR: 08:03	SR: 08:05		
SS: 16:00	SS: 15:59	SS: 15:58	SS: 15:57	SS: 15:56		
MR: 15:09	MR: 15:32	MR: 16:06	MR: 16:56	MR: 18:01		
MS: 06:57	MS: 08:26	MS: 09:49	MS: 10:57	MS: 11:47		
	FM: 09:17					

Twilight Report for 2023-11-01 to 2023-11-30

Date	Sun		Astronomical		Nautical		Civil	
	Rise	Set	Begin	End	Begin	End	Begin	End
2023-11-01	07:12	16:39	05:06	18:45	05:47	18:04	06:28	17:22
2023-11-08	07:25	16:26	05:17	18:34	05:58	17:53	06:41	17:10
2023-11-15	07:38	16:14	05:28	18:24	06:10	17:43	06:53	17:00
2023-11-22	07:51	16:05	05:38	18:17	06:20	17:36	07:04	16:52
2023-11-29	08:03	15:57	05:48	18:13	06:30	17:30	07:14	16:46

Meteor Showers Report for 2023-11-01 to 2023-11-30

Date	Meteor Shower	ZHR	RA	DEC	Illum. Frac.	Longitude
2023-11-04	Taurids	8	3h44m	14°	0.63	221°
2023-11-18	Leonids	10	10h08m	22°	0.24	235°

Planet View Info Report for 2023-11-01 to 2023-11-30

Mercury

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
2023-11-01	08:01	16:49	14h52m21s	-17°02'34"	7°25'58"	0.980	1.42828
2023-11-08	08:41	16:41	15h35m46s	-20°36'53"	11°19'16"	0.954	1.39566
2023-11-15	09:18	16:37	16h19m43s	-23°21'40"	14°51'53"	0.916	1.33655
2023-11-22	09:49	16:39	17h03m42s	-25°09'09"	18°00'29"	0.856	1.24915
2023-11-29	10:09	16:48	17h45m43s	-25°51'49"	20°26'32"	0.757	1.13064

Venus

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
2023-11-01	02:40	15:27	11h31m53s	3°41'10"	46°12'44"	0.547	0.75477
2023-11-08	02:54	15:14	12h00m13s	1°12'30"	45°45'10"	0.580	0.80720
2023-11-15	03:11	15:01	12h29m13s	-1°27'31"	45°05'16"	0.612	0.85903
2023-11-22	03:28	14:48	12h58m51s	-4°14'37"	44°15'23"	0.641	0.91011
2023-11-29	03:46	14:35	13h29m10s	-7°04'31"	43°17'07"	0.669	0.96037

Mars

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
2023-11-01	07:44	16:48	14h44m30s	-15°51'29"	5°15'58"	0.999	2.54500
2023-11-08	07:45	16:30	15h03m51s	-17°19'36"	3°07'04"	1.000	2.53901
2023-11-15	07:46	16:13	15h23m41s	-18°41'17"	0°59'18"	1.000	2.53069
2023-11-22	07:47	15:58	15h43m59s	-19°55'39"	1°08'19"	1.000	2.52010
2023-11-29	07:48	15:43	16h04m45s	-21°01'46"	3°13'36"	1.000	2.50745

Jupiter

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
2023-11-01	16:42	07:28	2h35m12s	13°42'44"	177°09'49"	1.000	3.98084
2023-11-08	16:13	06:55	2h31m29s	13°25'34"	174°19'18"	1.000	3.98661
2023-11-15	15:43	06:22	2h27m51s	13°08'57"	166°27'52"	0.999	4.00757
2023-11-22	15:14	05:50	2h24m28s	12°53'38"	158°34'15"	0.999	4.04336
2023-11-29	14:45	05:18	2h21m27s	12°40'11"	150°44'22"	0.998	4.09315

Saturn

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
2023-11-01	14:52	00:36	22h13m12s	-12°53'28"	112°17'12"	0.998	9.35688
2023-11-08	14:24	00:09	22h13m11s	-12°52'41"	105°16'51"	0.998	9.46664
2023-11-15	13:57	23:38	22h13m30s	-12°50'04"	98°19'58"	0.997	9.58022
2023-11-22	13:29	23:12	22h14m08s	-12°45'39"	91°26'53"	0.997	9.69582
2023-11-29	13:02	22:46	22h15m05s	-12°39'28"	84°37'43"	0.997	9.81172

Uranus

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
2023-11-01	16:57	08:37	3h16m58s	17°51'02"	166°43'41"	1.000	18.65760
2023-11-08	16:29	08:07	3h15m48s	17°46'37"	174°01'14"	1.000	18.63815
2023-11-15	16:01	07:38	3h14m38s	17°42'06"	178°36'17"	1.000	18.63383
2023-11-22	15:33	07:09	3h13m27s	17°37'36"	171°17'11"	1.000	18.64480
2023-11-29	15:04	06:40	3h12m19s	17°33'13"	163°55'50"	1.000	18.67083

Neptune

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
2023-11-01	15:27	03:03	23h44m32s	-3°03'30"	136°54'55"	1.000	29.17266
2023-11-08	14:59	02:35	23h44m06s	-3°06'09"	129°47'22"	1.000	29.26130
2023-11-15	14:32	02:07	23h43m45s	-3°08'14"	122°39'31"	1.000	29.35953
2023-11-22	14:04	01:39	23h43m29s	-3°09'41"	115°31'54"	1.000	29.46579
2023-11-29	13:36	01:11	23h43m19s	-3°10'31"	108°24'50"	1.000	29.57840