

KSIĘŻYC

d	Wsch.	Kulm.	Zach.	A _w	A _z	α	δ	D	F
	λ=0°		φ=50°			0 ^h UT			
GRUDZIEŃ 2013									
	h m	h m	h m	-°	+°	h m s	° ' "	' "	
1	5 28	10 21	15 07	65	63	14 37 18	-14 57.9	32.3	-0.06
2	6 42	11 20	15 54	61	60	15 36 27	-17 38.7	32.7	-0.01
3	7 50	12 21	16 51	59	58	16 38 24	-19 13.5	33.0	-0.00
4	8 51	13 23	17 58	59	60	17 41 53	-19 29.3	33.2	0.02
5	9 43	14 24	19 12	62	63	18 45 15	-18 22.5	33.2	0.06
6	10 25	15 23	20 29	67	69	19 46 58	-16 00.2	33.0	0.13
7	11 00	16 18	21 46	73	76	20 46 01	-12 37.5	32.7	0.22
8	11 31	17 10	23 01	80	83	21 42 12	- 8 33.5	32.4	0.32
9	11 58	18 00	—	87	—	22 35 47	- 4 06.9	32.0	0.43
10	12 24	18 48	0 14	94	91	23 27 25	0 25.7	31.6	0.54
11	12 50	19 36	1 25	101	98	0 17 50	4 50.5	31.2	0.65
12	13 17	20 23	2 34	107	104	1 07 44	8 55.9	30.8	0.74
13	13 47	21 11	3 41	112	110	1 57 41	12 31.9	30.5	0.83
14	14 21	22 00	4 45	117	115	2 48 01	15 29.9	30.2	0.90
15	14 59	22 49	5 46	120	119	3 38 51	17 42.7	30.0	0.95
16	15 43	23 37	6 42	121	121	4 30 03	19 05.1	29.8	0.98
17	16 32	—	7 32	121	121	5 21 16	19 34.2	29.6	1.00
18	17 26	0 26	8 16	119	120	6 12 02	19 09.8	29.5	-1.00
19	18 24	1 13	8 54	116	117	7 01 56	17 54.6	29.4	-0.98
20	19 24	1 59	9 26	112	113	7 50 42	15 53.6	29.4	-0.94
21	20 25	2 44	9 55	106	109	8 38 16	13 13.2	29.4	-0.89
22	21 28	3 28	10 20	100	103	9 24 48	10 00.3	29.5	-0.82
23	22 31	4 11	10 44	94	97	10 10 42	6 22.3	29.7	-0.74
24	23 36	4 54	11 07	87	91	10 56 30	2 26.5	30.0	-0.65
25	—	5 38	11 31	—	84	11 42 54	- 1 39.6	30.3	-0.56
26	0 43	6 24	11 56	81	78	12 30 39	- 5 47.4	30.7	-0.46
27	1 51	7 12	12 25	74	71	13 20 33	- 9 46.9	31.2	-0.36
28	3 02	8 04	12 59	68	66	14 13 22	-13 25.2	31.7	-0.26
29	4 15	9 00	13 40	63	61	15 09 36	-16 26.7	32.3	-0.17
30	5 25	9 59	14 31	60	59	16 09 20	-18 34.1	32.8	-0.09
31	6 31	11 01	15 32	58	59	17 11 55	-19 30.6	33.2	-0.03

nów	3 XII	0 ^h 22 ^m	1 XII	9.9 ^h	Saturn	1°N
pierwsza kwadra	9 XII	15 ^h 12 ^m	1 XII	22.5 ^h	Merkury	0.4°S
pełnia:	17 XII	9 ^h 28 ^m	6 XII	0.1 ^h	Wenus	8°S
ostatnia kwadra:	25 XII	13 ^h 48 ^m	8 XII	16.8 ^h	Neptun	6°S
			11 XII	7.2 ^h	Uran	3°S
perygeum:	4 XII	10 ^h 16 ^m	19 XII	7.4 ^h	Jowisz	5°N
apogeum:	19 XII	23 ^h 50 ^m	26 XII	2.8 ^h	Mars	5°N
			29 XII	1.1 ^h	Saturn	1°N