

KSIĘŻYC

d	Wsch.	Kulm.	Zach.	A _w	A _z	α	δ	D	F
	λ=0°		φ=50°			0 ^h UT			
GRUDZIEŃ 2016									
	h m	h m	h m	-°	+°	h m s	° ' "	' "	
1	8 54	13 26	17 58	60	60	17 41 14	-18 36.6	29.6	0.02
2	9 43	14 15	18 49	60	60	18 32 12	-18 53.8	29.8	0.06
3	10 26	15 05	19 47	61	62	19 23 38	-18 18.6	30.0	0.11
4	11 04	15 54	20 49	65	66	20 15 11	-16 51.1	30.3	0.18
5	11 38	16 43	21 54	69	71	21 06 35	-14 33.9	30.6	0.26
6	12 09	17 32	23 03	75	77	21 57 49	-11 31.8	30.9	0.36
7	12 38	18 21	—	81	—	22 49 05	-7 51.4	31.4	0.46
8	13 05	19 11	0 14	88	84	23 40 46	-3 41.4	31.8	0.57
9	13 34	20 03	1 28	95	92	0 33 27	0 47.3	32.2	0.68
10	14 04	20 57	2 44	102	99	1 27 46	5 21.1	32.7	0.78
11	14 39	21 54	4 03	109	106	2 24 19	9 43.2	33.0	0.87
12	15 19	22 54	5 22	115	112	3 23 24	13 34.0	33.3	0.94
13	16 06	23 55	6 38	118	117	4 24 53	16 33.2	33.3	0.98
14	17 02	—	7 49	120	120	5 27 55	18 23.7	33.2	1.00
15	18 06	0 57	8 51	119	120	6 31 09	18 55.8	33.0	-0.98
16	19 14	1 57	9 43	116	118	7 33 01	18 09.9	32.6	-0.94
17	20 24	2 55	10 26	112	114	8 32 13	16 15.7	32.1	-0.88
18	21 34	3 48	11 01	106	109	9 28 08	13 28.2	31.6	-0.80
19	22 42	4 38	11 30	100	103	10 20 45	10 03.8	31.1	-0.71
20	23 47	5 25	11 56	94	97	11 10 31	6 17.2	30.6	-0.61
21	—	6 09	12 21	—	90	11 58 07	2 20.6	30.2	-0.51
22	0 51	6 52	12 44	87	84	12 44 19	-1 36.2	29.9	-0.41
23	1 54	7 35	13 08	81	78	13 29 53	-5 25.2	29.6	-0.32
24	2 55	8 18	13 34	75	73	14 15 30	-8 59.1	29.5	-0.24
25	3 56	9 02	14 02	70	68	15 01 44	-12 10.9	29.4	-0.16
26	4 56	9 47	14 34	65	64	15 49 03	-14 53.7	29.5	-0.10
27	5 54	10 34	15 11	62	61	16 37 43	-17 00.0	29.5	-0.05
28	6 49	11 22	15 54	60	60	17 27 43	-18 23.1	29.7	-0.02
29	7 40	12 12	16 44	59	60	18 18 52	-18 57.0	29.8	-0.00
30	8 26	13 01	17 40	61	61	19 10 46	-18 38.0	30.1	0.01
31	9 07	13 51	18 41	63	65	20 02 56	-17 25.0	30.3	0.03

pierwsza kwadra:	7 XII	9 ^h 03 ^m	1 XII	3.9 ^h	Merkury	7°S
pełnia:	14 XII	0 ^h 06 ^m	3 XII	12.6 ^h	Wenus	6°S
ostatnia kwadra:	21 XII	1 ^h 56 ^m	5 XII	10.8 ^h	Mars	3°S
nów:	29 XII	6 ^h 53 ^m	6 XII	22.1 ^h	Neptun	0.7°S
			9 XII	19.6 ^h	Uran	3°N
			22 XII	16.7 ^h	Jowisz	2°S
perygeum:	12 XII	23 ^h 28 ^m	27 XII	20.7 ^h	Saturn	4°S
apogeum:	25 XII	5 ^h 56 ^m	29 XII	5.0 ^h	Merkury	2°S