

KSIĘŻYC

d	Wsch.	Kulm.	Zach.	A _W	A _Z	α	δ	D	F
	λ=0°		φ=50°			0 ^h UT			
GRUDZIEŃ 2021									
	h m	h m	h m	-°	+°	h m s	° ' "	' "	
1	3 29	9 08	14 32	79	75	13 29 22	- 5 46.3	32.5	-0.16
2	4 55	10 01	14 54	69	65	14 23 02	-11 54.2	33.0	-0.08
3	6 24	10 58	15 22	60	57	15 20 31	-17 30.2	33.3	-0.03
4	7 54	12 01	16 00	52	50	16 22 17	-22 04.5	33.5	-0.00
5	9 18	13 06	16 52	47	46	17 27 47	-25 07.8	33.5	0.01
6	10 27	14 12	17 59	46	47	18 35 05	-26 19.2	33.3	0.04
7	11 19	15 15	19 18	49	51	19 41 25	-25 34.1	32.9	0.11
8	11 56	16 14	20 41	55	58	20 44 19	-23 05.0	32.5	0.19
9	12 23	17 06	22 01	63	66	21 42 27	-19 15.5	31.9	0.29
10	12 43	17 54	23 18	71	75	22 35 49	-14 31.4	31.4	0.39
11	13 00	18 39	—	80	—	23 25 11	- 9 15.2	30.9	0.49
12	13 15	19 21	0 31	89	84	0 11 39	- 3 44.7	30.5	0.60
13	13 29	20 02	1 41	97	93	0 56 23	1 46.4	30.2	0.69
14	13 44	20 44	2 50	106	102	1 40 31	7 07.2	29.9	0.78
15	14 01	21 27	3 59	113	110	2 25 00	12 07.8	29.7	0.85
16	14 21	22 11	5 08	120	118	3 10 38	16 38.3	29.5	0.91
17	14 46	22 58	6 16	126	124	3 58 02	20 28.5	29.4	0.96
18	15 17	23 47	7 23	131	129	4 47 28	23 28.0	29.4	0.99
19	15 58	—	8 25	133	133	5 38 49	25 26.8	29.4	1.00
20	16 49	0 38	9 19	133	133	6 31 32	26 16.9	29.5	-0.99
21	17 49	1 29	10 03	131	132	7 24 44	25 54.1	29.6	-0.97
22	18 56	2 19	10 38	126	128	8 17 27	24 18.5	29.8	-0.93
23	20 07	3 08	11 05	119	122	9 08 56	21 34.9	30.0	-0.87
24	21 20	3 55	11 27	112	115	9 58 51	17 51.2	30.2	-0.80
25	22 34	4 41	11 46	103	107	10 47 20	13 17.0	30.5	-0.71
26	23 49	5 26	12 02	94	98	11 34 53	8 03.0	30.9	-0.62
27	—	6 11	12 18	—	89	12 22 22	2 20.5	31.3	-0.51
28	1 06	6 57	12 35	84	79	13 10 48	- 3 37.8	31.8	-0.40
29	2 26	7 47	12 54	74	70	14 01 23	- 9 36.6	32.3	-0.30
30	3 51	8 40	13 18	64	61	14 55 19	-15 16.2	32.7	-0.20
31	5 18	9 38	13 49	56	53	15 53 33	-20 11.9	33.1	-0.11

nów:	4 XII	7 ^h 43 ^m	3 XII	0.6 ^h	Mars	0.7°S
pierwsza kwadra:	11 XII	1 ^h 35 ^m	4 XII	12.8 ^h	Merkury	0.0°N
pełnia:	19 XII	4 ^h 35 ^m	7 XII	0.9 ^h	Wenus	2°N
ostatnia kwadra:	27 XII	2 ^h 24 ^m	8 XII	1.9 ^h	Saturn	4°N
			9 XII	6.2 ^h	Jowisz	4.5°N
perygeum:	4 XII	10 ^h 06 ^m	11 XII	0.8 ^h	Neptun	4°N
apogeum:	18 XII	2 ^h 16 ^m	15 XII	5.9 ^h	Uran	1.5°N
			31 XII	20.2 ^h	Mars	0.9°N