

Location:	Piazz Smyth Observatory	Beginning:	01 Nov 2018 00:00
Latitude:	52°08'40" N	Ending:	30 Nov 2018 23:59
Longitude:	00°27'48" W	LT/UT:	LT
Time Zone:	GMT Standard Time	Days to Skip:	1
Objects:	Moon	Apply Horizon:	No

Moon

Thu 01 Nov 2018	Rise: 23:57 Az: 74°8	Set: 14:21 Az: 303°8	Transit: 06:37 Alt: 55°1
00:00	RA: 09h03m40s Alt: +9°9 Ph: 46.6% SA2000: 12 HB: B-11, C-32 Dist (Earth): 370213km	Decl: +17°17'19" Az: 74°5 Mag: U2000: I, 142 U2000.2: I, 74 Dist (Sun):	Con: Cnc Size: 32'.38 MSA: II, 711 PSA: 35 Motion:
	Phase angle: PA of N pole: PA of bright limb: Librations (Lat, Lng) Optical: Physical: Total:	93°86 +17°91 106°49 -1°355, +0°305 +0°028, +0°023 -1°33, +0°33	
Fri 02 Nov 2018	Rise: None Az: (null)	Set: 14:51 Az: 297°4	Transit: 07:32 Alt: 51°4
00:00	RA: 10h00m49s Alt: -0°5 Ph: 35.4% SA2000: 13 HB: B-11, C-32 Dist (Earth): 370522km	Decl: +13°55'32" Az: 66°2 Mag: U2000: I, 189 U2000.2: I, 93 Dist (Sun):	Con: Leo Size: 32'.25 MSA: II, 733 PSA: 35 Motion: 14°14
	Phase angle: PA of N pole: PA of bright limb: Librations (Lat, Lng) Optical: Physical: Total:	106°94 +21°44 110°76 -2°887, +1°193 +0°027, +0°025 -2°86, +1°22	
Sat 03 Nov 2018	Rise: 01:16 Az: 73°7	Set: 15:17 Az: 289°9	Transit: 08:24 Alt: 46°8
00:00	RA: 10h55m49s Alt: -10°9 Ph: 25.0% SA2000: 13 HB: B-9, C-49 Dist (Earth): 371338km	Decl: +09°44'47" Az: 58°1 Mag: U2000: I, 190 U2000.2: I, 92 Dist (Sun):	Con: Leo Size: 32'.08 MSA: II, 730 PSA: 34 Motion: 14°11
	Phase angle: PA of N pole: PA of bright limb: Librations (Lat, Lng) Optical: Physical: Total:	120°00 +23°58 114°34 -4°242, +2°090 +0°027, +0°026 -4°22, +2°12	
Sun 04 Nov 2018	Rise: 02:35 Az: 82°5	Set: 15:40 Az: 282°0	Transit: 09:15 Alt: 41°8
00:00	RA: 11h48m57s Alt: -21°1 Ph: 15.9% SA2000: 13 HB: B-9, C-48 Dist (Earth): 372722km	Decl: +05°01'59" Az: 49°6 Mag: U2000: I, 192 U2000.2: I, 91 Dist (Sun):	Con: Vir Size: 31'.87 MSA: II, 751 PSA: 34 Motion: 14°05
	Phase angle:	132°99	

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Time Zone:	GMT Standard Time	Days to Skip:	1
Objects:	Moon	Apply Horizon:	No
	PA of N pole: +24°.30		
	PA of bright limb: 117°.29		
	Librations (Lat, Lng)		
	Optical: -5°.336, +2°.969		
	Physical: +0°.026, +0°.027		
	Total: -5°.31, +3°.00		
Mon 05 Nov 2018	Rise: 03:53 Az: 91°.5	Set: 16:03 Az: 273°.9	Transit: 10:05 Alt: 36°.6
00:00	RA: 12h40m44s Alt: -30°.7 Ph: 8.6% SA2000: 14 HB: B-9, C-48 Dist (Earth): 374735km	Decl: +00°04'13" Az: 40°.0 Mag: U2000: I,II, 239 U2000.2: I,II, 110 Dist (Sun):	Con: Vir Size: 31'.61 MSA: II, 773 PSA: 45 Motion: 13°.95
	Phase angle: 145°.84		
	PA of N pole: +23°.65		
	PA of bright limb: 120°.09		
	Librations (Lat, Lng)		
	Optical: -6°.103, +3°.789		
	Physical: +0°.026, +0°.027		
	Total: -6°.08, +3°.82		
Tue 06 Nov 2018	Rise: 05:10 Az: 100°.5	Set: 16:25 Az: 266°.0	Transit: 10:54 Alt: 31°.5
00:00	RA: 13h31m47s Alt: -39°.4 Ph: 3.5% SA2000: 14 HB: B-10, C-47 Dist (Earth): 377405km	Decl: -04°52'02" Az: 28°.6 Mag: U2000: I,II, 240 U2000.2: I,II, 110 Dist (Sun):	Con: Vir Size: 31'.33 MSA: II, 794 PSA: 46 Motion: 13°.80
	Phase angle: 158°.43		
	PA of N pole: +21°.74		
	PA of bright limb: 124°.36		
	Librations (Lat, Lng)		
	Optical: -6°.503, +4°.488		
	Physical: +0°.026, +0°.028		
	Total: -6°.48, +4°.52		
Wed 07 Nov 2018	Rise: 06:26 Az: 109°.1	Set: 16:49 Az: 258°.7	Transit: 11:43 Alt: 26°.9
00:00	RA: 14h22m40s Alt: -46°.6 Ph: 0.7% SA2000: 14 HB: B-8, C-46 Dist (Earth): 380700km	Decl: -09°31'25" Az: 14°.5 Mag: U2000: II, 287 U2000.2: II, 129 Dist (Sun):	Con: Lib Size: 31'.01 MSA: II, 791 PSA: 46 Motion: 13°.60
	Phase angle: 170°.29		
	PA of N pole: +18°.73		
	PA of bright limb: 139°.71		
	Librations (Lat, Lng)		
	Optical: -6°.524, +4°.997		
	Physical: +0°.026, +0°.028		
	Total: -6°.50, +5°.03		
Thu 08 Nov 2018	Rise: 07:40 Az: 116°.9	Set: 17:16 Az: 252°.3	Transit: 12:32 Alt: 22°.9
00:00	RA: 15h13m50s Alt: -51°.5	Decl: -13°40'06" Az: 357°.2	Con: Lib

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Time Zone:	GMT Standard Time	Days to Skip:	1
Objects:	Moon	Apply Horizon:	No
	Ph: 0.3%	Mag:	Size: 30'.68
	SA2000: 14	U2000: II, 289	MSA: II, 813
	HB: B-8, C-64	U2000.2: II, 128	PSA: 57
	Dist (Earth): 384506km	Dist (Sun):	Motion: 13°.35
	Phase angle:	173°.74	
	PA of N pole:	+14°.78	
	PA of bright limb:	236°.23	
	Librations (Lat, Lng)		
	Optical:	-6°.182, +5°.252	
	Physical:	+0°.027, +0°.027	
	Total:	-6°.16, +5°.28	
Fri 09 Nov 2018	Rise: 08:51	Set: 17:48	Transit: 13:23
	Az: 123°.5	Az: 247°.1	Alt: 19°.7
00:00	RA: 16h05m30s	Decl: -17°06'19"	Con: Sco
	Alt: -53°.3	Az: 337°.7	
	Ph: 2.1%	Mag:	Size: 30'.35
	SA2000: 15	U2000: II, 290	MSA: III, 1374
	HB: B-8, C-63	U2000.2: II, 128	PSA: 57
	Dist (Earth): 388627km	Dist (Sun):	Motion: 13°.08
	Phase angle:	163°.24	
	PA of N pole:	+10°.10	
	PA of bright limb:	266°.75	
	Librations (Lat, Lng)		
	Optical:	-5°.518, +5°.204	
	Physical:	+0°.027, +0°.027	
	Total:	-5°.49, +5°.23	
Sat 10 Nov 2018	Rise: 09:57	Set: 18:26	Transit: 14:13
	Az: 128°.4	Az: 243°.6	Alt: 17°.6
00:00	RA: 16h57m38s	Decl: -19°40'59"	Con: Oph
	Alt: -51°.8	Az: 318°.5	
	Ph: 6.0%	Mag:	Size: 30'.04
	SA2000: 22	U2000: II, 337	MSA: III, 1372
	HB: B-8, C-62	U2000.2: II, 146	PSA: 56
	Dist (Earth): 392800km	Dist (Sun):	Motion: 12°.78
	Phase angle:	151°.75	
	PA of N pole:	+4°.93	
	PA of bright limb:	269°.49	
	Librations (Lat, Lng)		
	Optical:	-4°.586, +4°.828	
	Physical:	+0°.027, +0°.026	
	Total:	-4°.56, +4°.85	
Sun 11 Nov 2018	Rise: 10:56	Set: 19:10	Transit: 15:04
	Az: 131°.4	Az: 241°.9	Alt: 16°.6
00:00	RA: 17h49m58s	Decl: -21°18'12"	Con: Sgr
	Alt: -47°.6	Az: 302°.0	
	Ph: 11.5%	Mag:	Size: 29'.77
	SA2000: 22	U2000: II, 338	MSA: III, 1369
	HB: B-8, C-62	U2000.2: II, 146	PSA: 56
	Dist (Earth): 396724km	Dist (Sun):	Motion: 12°.50
	Phase angle:	140°.37	
	PA of N pole:	-0°.47	
	PA of bright limb:	267°.66	
	Librations (Lat, Lng)		
	Optical:	-3°.452, +4°.132	
	Physical:	+0°.027, +0°.025	
	Total:	-3°.43, +4°.16	

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Time Zone:	GMT Standard Time	Days to Skip:	1
Objects:	Moon	Apply Horizon:	No

Mon 12 Nov 2018
 Rise: 11:46
 Az: 132°.3
 Set: 20:01
 Az: 242°.1
 Transit: 15:53
 Alt: 16°.6
 00:00
 RA: 18h42m04s
 Decl: -21°55'32"
 Alt: -41°.4
 Az: 288°.9
 Ph: 18.4%
 Mag:
 SA2000: 22
 U2000: II, 340
 HB: B-6, C-61
 U2000.2: II, 145
 Dist (Earth): 400089km
 Dist (Sun):
 Size: 29'.56
 MSA: III, 1390
 PSA: 67
 Motion: 12°.25
 Phase angle: 129°.19
 PA of N pole: -5°.81
 PA of bright limb: 264°.30
 Librations (Lat, Lng)
 Optical: -2°.180, +3°.151
 Physical: +0°.027, +0°.024
 Total: -2°.15, +3°.18

Tue 13 Nov 2018
 Rise: 12:29
 Az: 131°.1
 Set: 20:58
 Az: 244°.2
 Transit: 16:42
 Alt: 17°.7
 00:00
 RA: 19h33m27s
 Decl: -21°33'45"
 Alt: -34°.1
 Az: 278°.5
 Ph: 26.4%
 Mag:
 SA2000: 22
 U2000: II, 342
 HB: B-6, C-60
 U2000.2: II, 144
 Dist (Earth): 402610km
 Dist (Sun):
 Size: 29'.42
 MSA: III, 1364
 PSA: 66
 Motion: 12°.04
 Phase angle: 118°.20
 PA of N pole: -10°.81
 PA of bright limb: 260°.40
 Librations (Lat, Lng)
 Optical: -0°.830, +1°.944
 Physical: +0°.028, +0°.023
 Total: -0°.80, +1°.97

Wed 14 Nov 2018
 Rise: 13:04
 Az: 128°.1
 Set: 22:00
 Az: 247°.8
 Transit: 17:29
 Alt: 19°.7
 00:00
 RA: 20h23m45s
 Decl: -20°16'17"
 Alt: -26°0
 Az: 270°0
 Ph: 35.1%
 Mag:
 SA2000: 23
 U2000: II, 343
 HB: B-6, C-60
 U2000.2: II, 144
 Dist (Earth): 404055km
 Dist (Sun):
 Size: 29'.37
 MSA: III, 1361
 PSA: 66
 Motion: 11°90
 Phase angle: 107°34
 PA of N pole: -15°24
 PA of bright limb: 256°45
 Librations (Lat, Lng)
 Optical: +0°.542, +0°.589
 Physical: +0°.028, +0°.021
 Total: +0°.57, +0°.61

Thu 15 Nov 2018
 Rise: 13:33
 Az: 123°8
 Set: 23:04
 Az: 252°7
 Transit: 18:14
 Alt: 22°5
 00:00
 RA: 21h12m48s
 Decl: -18°08'16"
 Alt: -17°5
 Az: 262°7
 Ph: 44.3%
 Mag:
 SA2000: 16
 U2000: II, 345
 HB: B-6, C-59
 U2000.2: II, 123
 Dist (Earth): 404266km
 Dist (Sun):
 Size: 29'.42
 MSA: III, 1359
 PSA: 77
 Motion: 11°84
 Phase angle: 96°55

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Time Zone:	GMT Standard Time	Days to Skip:	1
Objects:	Moon	Apply Horizon:	No
	PA of N pole: -18°.91		
	PA of bright limb: 252°.76		
	Librations (Lat, Lng)		
	Optical: +1°.885, -0°.824		
	Physical: +0°.028, +0°.020		
	Total: +1°.91, -0°.80		
Fri 16 Nov 2018	Rise: 13:57 Az: 118°.4	Set: None Az: (null)	Transit: 18:59 Alt: 26°.0
00:00	RA: 22h00m40s Alt: -8°.6 Ph: 53.7% SA2000: 17 HB: B-4, C-58 Dist (Earth): 403176km	Decl: -15°15'46" Az: 256°.2 Mag: U2000: II, 301 U2000.2: II, 123 Dist (Sun):	Con: Aqr Size: 29'.57 MSA: III, 1332 PSA: 77 Motion: 11°.86
	Phase angle: 85°.74		
	PA of N pole: -21°.69		
	PA of bright limb: 249°.50		
	Librations (Lat, Lng)		
	Optical: +3°.152, -2°.200		
	Physical: +0°.028, +0°.019		
	Total: +3°.18, -2°.18		
Sat 17 Nov 2018	Rise: 14:19 Az: 112°.1	Set: 00:10 Az: 251°.8	Transit: 19:43 Alt: 30°.1
00:00	RA: 22h47m38s Alt: +0°.5 Ph: 63.1% SA2000: 17 HB: B-4, C-40 Dist (Earth): 400817km	Decl: -11°45'17" Az: 249°.9 Mag: U2000: II, 303 U2000.2: II, 122 Dist (Sun):	Con: Aqr Size: 29'.82 MSA: III, 1330 PSA: 76 Motion: 11°.96
	Phase angle: 74°.83		
	PA of N pole: -23°.51		
	PA of bright limb: 246°.79		
	Librations (Lat, Lng)		
	Optical: +4°.293, -3°.444		
	Physical: +0°.029, +0°.017		
	Total: +4°.32, -3°.43		
Sun 18 Nov 2018	Rise: 14:39 Az: 105°.3	Set: 01:17 Az: 259°.1	Transit: 20:27 Alt: 34°.6
00:00	RA: 23h34m13s Alt: +9°.8 Ph: 72.1% SA2000: 17 HB: B-4, C-39 Dist (Earth): 397329km	Decl: -07°43'38" Az: 243°.6 Mag: U2000: II, 304 U2000.2: II, 121 Dist (Sun):	Con: Aqr Size: 30'.16 MSA: III, 1304 PSA: 76 Motion: 12°.15
	Phase angle: 63°.74		
	PA of N pole: -24°.30		
	PA of bright limb: 244°.65		
	Librations (Lat, Lng)		
	Optical: +5°.262, -4°.464		
	Physical: +0°.029, +0°.016		
	Total: +5°.29, -4°.45		
Mon 19 Nov 2018	Rise: 14:59 Az: 98°.0	Set: 02:26 Az: 267°.0	Transit: 21:11 Alt: 39°.4
00:00	RA: 00h21m02s Alt: +19°.2	Decl: -03°18'23" Az: 236°.7	Con: Psc

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Time Zone:	GMT Standard Time	Days to Skip:	1
Objects:	Moon	Apply Horizon:	No
	Ph: 80.5% SA2000: 17 HB: B-4, C-39 Dist (Earth): 392949km	Mag: U2000: I,II, 216 U2000.2: I,II, 101 Dist (Sun):	Size: 30'.58 MSA: I, 269 PSA: 7 Motion: 12°.42
	Phase angle: PA of N pole: PA of bright limb: Librations (Lat, Lng) Optical: Physical: Total:	52°.39 -24°.03 243°.06 +6°.006, -5°.185 +0°.029, +0°.015 +6°.03, -5°.17	
Tue 20 Nov 2018	Rise: 15:20 Az: 90°.6	Set: 03:37 Az: 275°.3	Transit: 21:58 Alt: 44°.2
00:00	RA: 01h08m48s Alt: +28°.7 Ph: 87.9% SA2000: 10 HB: B-3, C-56 Dist (Earth): 387999km	Decl: +01°21'32" Az: 228°.8 Mag: U2000: I,II, 217 U2000.2: I,II, 120 Dist (Sun):	Con: Cet Size: 31'.05 MSA: I, 267 PSA: 5 Motion: 12°.74
	Phase angle: PA of N pole: PA of bright limb: Librations (Lat, Lng) Optical: Physical: Total:	40°.75 -22°.67 241°.86 +6°.473, -5°.550 +0°.030, +0°.014 +6°.50, -5°.54	
Wed 21 Nov 2018	Rise: 15:42 Az: 83°.2	Set: 04:50 Az: 283°.7	Transit: 22:47 Alt: 48°.9
00:00	RA: 01h58m16s Alt: +37°.8 Ph: 93.8% SA2000: 10 HB: B-3, C-56 Dist (Earth): 382859km	Decl: +06°04'53" Az: 218°.9 Mag: U2000: I, 174 U2000.2: I, 99 Dist (Sun):	Con: Psc Size: 31'.54 MSA: I, 241 PSA: 4 Motion: 13°.11
	Phase angle: PA of N pole: PA of bright limb: Librations (Lat, Lng) Optical: Physical: Total:	28°.79 -20°.21 240°.47 +6°.616, -5°.533 +0°.030, +0°.013 +6°.65, -5°.52	
Thu 22 Nov 2018	Rise: 16:09 Az: 76°.2	Set: 06:06 Az: 292°.1	Transit: 23:39 Alt: 53°.1
00:00	RA: 02h50m12s Alt: +46°.0 Ph: 97.9% SA2000: 10 HB: B-13, C-55 Dist (Earth): 377936km	Decl: +10°37'25" Az: 205°.8 Mag: U2000: I, 175 U2000.2: I, 99 Dist (Sun):	Con: Ari Size: 32'.01 MSA: I, 214 PSA: 4 Motion: 13°.48
	Phase angle: PA of N pole: PA of bright limb: Librations (Lat, Lng) Optical: Physical: Total:	16°.60 -16°.65 236°.29 +6°.398, -5°.143 +0°.031, +0°.013 +6°.43, -5°.13	

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Time Zone:	GMT Standard Time	Days to Skip:	1
Objects:	Moon	Apply Horizon:	No

Fri 23 Nov 2018	Rise: 16:41 Az: 70°:2	Set: 07:24 Az: 299°:7	Transit: None Alt: (null)
00:00	RA: 03h45m07s Alt: +52°:3 Ph: 99.8% SA2000: 11 HB: B-13, C-36 Dist (Earth): 373611km	Decl: +14°41'40" Az: 188°:2 Mag: U2000: I, 177 U2000.2: I, 98 Dist (Sun):	Con: Tau Size: 32'.42 MSA: I, 187 PSA: 15 Motion: 13°:83
	Phase angle: PA of N pole: PA of bright limb: Librations (Lat, Lng) Optical: Physical: Total:	5°:38 -12°:05 201°:97 +5°:803, -4°:423 +0°:031, +0°:013 +5°:83, -4°:41	

Sat 24 Nov 2018	Rise: 17:22 Az: 65°:7	Set: 08:40 Az: 306°:0	Transit: 00:35 Alt: 56°:4
00:00	RA: 04h43m14s Alt: +55°:2 Ph: 99.1% SA2000: 5 HB: B-13, C-35 Dist (Earth): 370196km	Decl: +17°58'00" Az: 166°:0 Mag: U2000: I, 134 U2000.2: I, 77 Dist (Sun):	Con: Tau Size: 32'.74 MSA: I, 184 PSA: 14 Motion: 14°:12
	Phase angle: PA of N pole: PA of bright limb: Librations (Lat, Lng) Optical: Physical: Total:	10°:69 -6°:54 102°:43 +4°:843, -3°:446 +0°:031, +0°:014 +4°:87, -3°:43	

Sun 25 Nov 2018	Rise: 18:13 Az: 63°:4	Set: 09:51 Az: 310°:1	Transit: 01:33 Alt: 58°:6
00:00	RA: 05h44m04s Alt: +53°:5 Ph: 95.9% SA2000: 5 HB: B-13, C-35 Dist (Earth): 367890km	Decl: +20°07'19" Az: 142°:7 Mag: U2000: I, 136 U2000.2: I, 77 Dist (Sun):	Con: Tau Size: 32'.94 MSA: I, 181 PSA: 14 Motion: 14°:34
	Phase angle: PA of N pole: PA of bright limb: Librations (Lat, Lng) Optical: Physical: Total:	23°:47 -0°:42 94°:57 +3°:567, -2°:303 +0°:032, +0°:015 +3°:60, -2°:29	

Mon 26 Nov 2018	Rise: 19:16 Az: 63°:8	Set: 10:53 Az: 311°:3	Transit: 02:34 Alt: 59°:3
00:00	RA: 06h46m32s Alt: +47°:6 Ph: 90.1% SA2000: 5 HB: B-11, C-34 Dist (Earth): 366761km	Decl: +20°55'16" Az: 123°:1 Mag: U2000: I, 138 U2000.2: I, 76 Dist (Sun):	Con: Gem Size: 33'.01 MSA: I, 154 PSA: 25 Motion: 14°:45
	Phase angle:	36°:72	

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Time Zone:	GMT Standard Time	Days to Skip:	1
Objects:	Moon	Apply Horizon:	No
	PA of N pole: +5°.88		
	PA of bright limb: 96°.52		
	Librations (Lat, Lng)		
	Optical: +2°.053, -1°.089		
	Physical: +0°.032, +0°.016		
	Total: +2°.08, -1°.07		
Tue 27 Nov 2018	Rise: 20:28 Az: 66°.7	Set: 11:44 Az: 309°.5	Transit: 03:34 Alt: 58°.5
00:00	RA: 07h49m03s Alt: +39°.0 Ph: 82.1% SA2000: 5 HB: B-11, C-33 Dist (Earth): 366748km	Decl: +20°16'13" Az: 108°.4 Mag: U2000: I, 140 U2000.2: I, 75 Dist (Sun):	Con: Gem Size: 32'.94 MSA: I, 175 PSA: 24 Motion: 14°.47
	Phase angle: 50°.08		
	PA of N pole: +11°.83		
	PA of bright limb: 100°.55		
	Librations (Lat, Lng)		
	Optical: +0°.406, +0°.115		
	Physical: +0°.031, +0°.018		
	Total: +0°.44, +0°.13		
Wed 28 Nov 2018	Rise: 21:46 Az: 71°.9	Set: 12:25 Az: 305°.1	Transit: 04:33 Alt: 56°.3
00:00	RA: 08h50m05s Alt: +28°.9 Ph: 72.4% SA2000: 6 HB: B-11, C-32 Dist (Earth): 367692km	Decl: +18°14'46" Az: 97°.3 Mag: U2000: I, 141 U2000.2: I, 74 Dist (Sun):	Con: Cnc Size: 32'.78 MSA: II, 712 PSA: 24 Motion: 14°.41
	Phase angle: 63°.40		
	PA of N pole: +16°.91		
	PA of bright limb: 104°.92		
	Librations (Lat, Lng)		
	Optical: -1°.262, +1°.250		
	Physical: +0°.031, +0°.019		
	Total: -1°.23, +1°.27		
Thu 29 Nov 2018	Rise: 23:05 Az: 78°.6	Set: 12:57 Az: 298°.9	Transit: 05:29 Alt: 52°.8
00:00	RA: 09h48m38s Alt: +18°.1 Ph: 61.6% SA2000: 13 HB: B-11, C-32 Dist (Earth): 369387km	Decl: +15°03'47" Az: 88°.5 Mag: U2000: I, 188 U2000.2: I, 93 Dist (Sun):	Con: Leo Size: 32'.53 MSA: II, 709 PSA: 35 Motion: 14°.28
	Phase angle: 76°.62		
	PA of N pole: +20°.77		
	PA of bright limb: 108°.87		
	Librations (Lat, Lng)		
	Optical: -2°.840, +2°.278		
	Physical: +0°.031, +0°.020		
	Total: -2°.81, +2°.30		
Fri 30 Nov 2018	Rise: None Az: (null)	Set: 13:24 Az: 291°.5	Transit: 06:22 Alt: 48°.5
00:00	RA: 10h44m23s Alt: +7°.0	Decl: +11°00'37" Az: 81°.1	Con: Leo

Location:	Piazzì Smyth Observatory	Beginning:	01 Nov 2018 00:00
Latitude:	52°08'40" N	Ending:	30 Nov 2018 23:59
Longitude:	00°27'48" W	LT/UT:	LT
Time Zone:	GMT Standard Time	Days to Skip:	1
Objects:	Moon	Apply Horizon:	No

Ph: 50.3%	Mag:	Size: 32'.23
SA2000: 13	U2000: I, 190	MSA: II, 730
HB: B-9, C-49	U2000.2: I, 92	PSA: 34
Dist (Earth): 371620km	Dist (Sun):	Motion: 14°.12

Phase angle:	89°.69
PA of N pole:	+23°.22
PA of bright limb:	112°.04
Librations (Lat, Lng)	
Optical:	-4°.230, +3°.179
Physical:	+0°.030, +0°.021
Total:	-4°.20, +3°.20

30 times calculated for each of 1 objects