

Lampiran-lampiran

1. Data deklinasi dan equation of time pada Winhisab 2007

8 Januari 2016

DATA MATAHARI

Jam	Ecliptic Longitude (°)	Ecliptic Latitude (°)	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation Of Time
0	287° 07' 22"	0.38"	288° 33' 15"	-22° 20' 20"	0.9833614	16' 15.87"	23° 26' 04"	-6 m 16 s
1	287° 09' 55"	0.38"	288° 35' 59"	-22° 20' 00"	0.9833624	16' 15.87"	23° 26' 04"	-6 m 17 s
2	287° 12' 28"	0.38"	288° 38' 43"	-22° 19' 41"	0.9833633	16' 15.87"	23° 26' 04"	-6 m 18 s
3	287° 15' 01"	0.38"	288° 41' 27"	-22° 19' 21"	0.9833642	16' 15.86"	23° 26' 04"	-6 m 19 s
4	287° 17' 34"	0.38"	288° 44' 11"	-22° 19' 02"	0.9833652	16' 15.86"	23° 26' 04"	-6 m 20 s
5	287° 20' 07"	0.38"	288° 46' 55"	-22° 18' 42"	0.9833661	16' 15.86"	23° 26' 04"	-6 m 21 s
6	287° 22' 40"	0.38"	288° 49' 39"	-22° 18' 23"	0.9833671	16' 15.86"	23° 26' 04"	-6 m 22 s
7	287° 25' 13"	0.38"	288° 52' 23"	-22° 18' 03"	0.9833681	16' 15.86"	23° 26' 04"	-6 m 23 s
8	287° 27' 46"	0.38"	288° 55' 07"	-22° 17' 43"	0.9833690	16' 15.86"	23° 26' 04"	-6 m 24 s
9	287° 30' 19"	0.38"	288° 57' 51"	-22° 17' 24"	0.9833700	16' 15.86"	23° 26' 04"	-6 m 25 s
10	287° 32' 52"	0.38"	289° 00' 35"	-22° 17' 04"	0.9833710	16' 15.86"	23° 26' 04"	-6 m 26 s
11	287° 35' 25"	0.38"	289° 03' 19"	-22° 16' 44"	0.9833720	16' 15.86"	23° 26' 04"	-6 m 27 s
12	287° 37' 58"	0.38"	289° 06' 03"	-22° 16' 24"	0.9833730	16' 15.86"	23° 26' 04"	-6 m 28 s
13	287° 40' 31"	0.38"	289° 08' 47"	-22° 16' 04"	0.9833740	16' 15.85"	23° 26' 04"	-6 m 30 s
14	287° 43' 03"	0.37"	289° 11' 30"	-22° 15' 44"	0.9833750	16' 15.85"	23° 26' 04"	-6 m 31 s
15	287° 45' 36"	0.37"	289° 14' 14"	-22° 15' 24"	0.9833760	16' 15.85"	23° 26' 04"	-6 m 32 s
16	287° 48' 09"	0.37"	289° 16' 58"	-22° 15' 04"	0.9833771	16' 15.85"	23° 26' 04"	-6 m 33 s
17	287° 50' 42"	0.37"	289° 19' 42"	-22° 14' 44"	0.9833781	16' 15.85"	23° 26' 04"	-6 m 34 s
18	287° 53' 15"	0.37"	289° 22' 26"	-22° 14' 24"	0.9833791	16' 15.85"	23° 26' 04"	-6 m 35 s
19	287° 55' 48"	0.37"	289° 25' 09"	-22° 14' 04"	0.9833802	16' 15.85"	23° 26' 04"	-6 m 36 s
20	287° 58' 21"	0.37"	289° 27' 53"	-22° 13' 43"	0.9833812	16' 15.85"	23° 26' 04"	-6 m 37 s
21	288° 00' 54"	0.37"	289° 30' 37"	-22° 13' 23"	0.9833823	16' 15.85"	23° 26' 04"	-6 m 38 s
22	288° 03' 27"	0.36"	289° 33' 21"	-22° 13' 03"	0.9833834	16' 15.85"	23° 26' 04"	-6 m 39 s
23	288° 05' 60"	0.36"	289° 36' 04"	-22° 12' 42"	0.9833844	16' 15.84"	23° 26' 04"	-6 m 40 s
24	288° 08' 33"	0.36"	289° 38' 48"	-22° 12' 22"	0.9833855	16' 15.84"	23° 26' 04"	-6 m 41 s

*) for mean equinox of date

8 Februari 2016

DATA MATAHARI

Jam	Ecliptic Longitude (°)	Ecliptic Latitude (°)	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation Of Time
0	318° 38' 53"	0.08"	321° 04' 20"	-15° 14' 07"	0.9863287	16' 12.93"	23° 26' 05"	-14 m 09 s
1	318° 41' 25"	0.07"	321° 06' 50"	-15° 13' 20"	0.9863357	16' 12.92"	23° 26' 05"	-14 m 09 s
2	318° 43' 57"	0.07"	321° 09' 20"	-15° 12' 33"	0.9863427	16' 12.92"	23° 26' 05"	-14 m 09 s
3	318° 46' 29"	0.07"	321° 11' 50"	-15° 11' 46"	0.9863497	16' 12.91"	23° 26' 05"	-14 m 09 s
4	318° 49' 01"	0.06"	321° 14' 19"	-15° 10' 59"	0.9863567	16' 12.90"	23° 26' 05"	-14 m 09 s
5	318° 51' 33"	0.06"	321° 16' 49"	-15° 10' 12"	0.9863637	16' 12.90"	23° 26' 05"	-14 m 09 s
6	318° 54' 05"	0.05"	321° 19' 19"	-15° 09' 25"	0.9863707	16' 12.89"	23° 26' 05"	-14 m 09 s
7	318° 56' 37"	0.05"	321° 21' 49"	-15° 08' 38"	0.9863777	16' 12.88"	23° 26' 05"	-14 m 09 s
8	318° 59' 09"	0.04"	321° 24' 18"	-15° 07' 50"	0.9863847	16' 12.88"	23° 26' 05"	-14 m 10 s
9	319° 01' 41"	0.04"	321° 26' 48"	-15° 07' 03"	0.9863917	16' 12.87"	23° 26' 05"	-14 m 10 s
10	319° 04' 13"	0.03"	321° 29' 18"	-15° 06' 16"	0.9863987	16' 12.86"	23° 26' 05"	-14 m 10 s
11	319° 06' 45"	0.03"	321° 31' 47"	-15° 05' 28"	0.9864058	16' 12.86"	23° 26' 05"	-14 m 10 s
12	319° 09' 17"	0.02"	321° 34' 17"	-15° 04' 41"	0.9864128	16' 12.85"	23° 26' 05"	-14 m 10 s
13	319° 11' 49"	0.02"	321° 36' 46"	-15° 03' 54"	0.9864198	16' 12.84"	23° 26' 05"	-14 m 10 s
14	319° 14' 21"	0.01"	321° 39' 16"	-15° 03' 06"	0.9864269	16' 12.83"	23° 26' 05"	-14 m 10 s
15	319° 16' 53"	0.01"	321° 41' 45"	-15° 02' 19"	0.9864339	16' 12.83"	23° 26' 05"	-14 m 10 s
16	319° 19' 25"	0.00"	321° 44' 15"	-15° 01' 31"	0.9864410	16' 12.82"	23° 26' 05"	-14 m 11 s
17	319° 21' 57"	-0.00"	321° 46' 44"	-15° 00' 44"	0.9864480	16' 12.81"	23° 26' 05"	-14 m 11 s
18	319° 24' 29"	-0.01"	321° 49' 14"	-14° 59' 57"	0.9864551	16' 12.81"	23° 26' 05"	-14 m 11 s
19	319° 27' 01"	-0.01"	321° 51' 43"	-14° 59' 09"	0.9864621	16' 12.80"	23° 26' 05"	-14 m 11 s
20	319° 29' 33"	-0.02"	321° 54' 13"	-14° 58' 21"	0.9864692	16' 12.79"	23° 26' 05"	-14 m 11 s
21	319° 32' 05"	-0.02"	321° 56' 42"	-14° 57' 34"	0.9864763	16' 12.79"	23° 26' 05"	-14 m 11 s
22	319° 34' 37"	-0.03"	321° 59' 12"	-14° 56' 46"	0.9864833	16' 12.78"	23° 26' 05"	-14 m 11 s
23	319° 37' 09"	-0.03"	322° 01' 41"	-14° 55' 59"	0.9864904	16' 12.77"	23° 26' 05"	-14 m 11 s
24	319° 39' 41"	-0.04"	322° 04' 10"	-14° 55' 11"	0.9864975	16' 12.76"	23° 26' 05"	-14 m 11 s

*) for mean equinox of date

8 Maret 2016

DATA MATAHARI

Jam	Ecliptic Longitude (°)	Ecliptic Latitude (°)	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation Of Time
0	347° 51' 12"	-0.13"	348° 49' 24"	-4° 48' 10"	0.9926550	16' 06.73"	23° 26' 05"	-10 m 47 s
1	347° 53' 42"	-0.13"	348° 51' 43"	-4° 47' 11"	0.9926659	16' 06.72"	23° 26' 05"	-10 m 46 s
2	347° 56' 12"	-0.14"	348° 54' 01"	-4° 46' 13"	0.9926768	16' 06.71"	23° 26' 05"	-10 m 45 s
3	347° 58' 43"	-0.14"	348° 56' 20"	-4° 45' 14"	0.9926877	16' 06.70"	23° 26' 05"	-10 m 45 s
4	348° 01' 13"	-0.15"	348° 58' 39"	-4° 44' 15"	0.9926986	16' 06.69"	23° 26' 05"	-10 m 44 s
5	348° 03' 43"	-0.15"	349° 00' 57"	-4° 43' 17"	0.9927095	16' 06.68"	23° 26' 05"	-10 m 43 s
6	348° 06' 13"	-0.16"	349° 03' 16"	-4° 42' 18"	0.9927204	16' 06.67"	23° 26' 05"	-10 m 43 s
7	348° 08' 43"	-0.16"	349° 05' 35"	-4° 41' 20"	0.9927313	16' 06.66"	23° 26' 05"	-10 m 42 s
8	348° 11' 13"	-0.17"	349° 07' 53"	-4° 40' 21"	0.9927422	16' 06.65"	23° 26' 05"	-10 m 42 s
9	348° 13' 43"	-0.17"	349° 10' 12"	-4° 39' 23"	0.9927531	16' 06.64"	23° 26' 05"	-10 m 41 s
10	348° 16' 13"	-0.18"	349° 12' 30"	-4° 38' 24"	0.9927640	16' 06.62"	23° 26' 05"	-10 m 40 s
11	348° 18' 43"	-0.19"	349° 14' 49"	-4° 37' 25"	0.9927749	16' 06.61"	23° 26' 05"	-10 m 40 s
12	348° 21' 13"	-0.19"	349° 17' 08"	-4° 36' 27"	0.9927858	16' 06.60"	23° 26' 05"	-10 m 39 s
13	348° 23' 43"	-0.20"	349° 19' 26"	-4° 35' 28"	0.9927967	16' 06.59"	23° 26' 05"	-10 m 38 s
14	348° 26' 13"	-0.20"	349° 21' 45"	-4° 34' 29"	0.9928076	16' 06.58"	23° 26' 05"	-10 m 38 s
15	348° 28' 43"	-0.21"	349° 24' 03"	-4° 33' 31"	0.9928185	16' 06.57"	23° 26' 05"	-10 m 37 s
16	348° 31' 13"	-0.21"	349° 26' 22"	-4° 32' 32"	0.9928295	16' 06.56"	23° 26' 05"	-10 m 37 s
17	348° 33' 43"	-0.22"	349° 28' 40"	-4° 31' 33"	0.9928404	16' 06.55"	23° 26' 05"	-10 m 36 s
18	348° 36' 13"	-0.22"	349° 30' 59"	-4° 30' 35"	0.9928513	16' 06.54"	23° 26' 05"	-10 m 35 s
19	348° 38' 43"	-0.23"	349° 33' 17"	-4° 29' 36"	0.9928622	16' 06.53"	23° 26' 05"	-10 m 35 s
20	348° 41' 13"	-0.23"	349° 35' 36"	-4° 28' 37"	0.9928731	16' 06.52"	23° 26' 05"	-10 m 34 s
21	348° 43' 43"	-0.24"	349° 37' 54"	-4° 27' 39"	0.9928840	16' 06.51"	23° 26' 05"	-10 m 33 s
22	348° 46' 13"	-0.25"	349° 40' 13"	-4° 26' 40"	0.9928949	16' 06.50"	23° 26' 05"	-10 m 33 s
23	348° 48' 44"	-0.25"	349° 42' 31"	-4° 25' 41"	0.9929059	16' 06.49"	23° 26' 05"	-10 m 32 s
24	348° 51' 14"	-0.26"	349° 44' 50"	-4° 24' 43"	0.9929168	16' 06.48"	23° 26' 05"	-10 m 31 s

*) for mean equinox of date

8 April 2016

DATA MATAHARI

Jam	Ecliptic Longitude (°)	Ecliptic Latitude (°)	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation Of Time
0	18° 35' 45"	-0.52"	17° 08' 58"	7° 17' 00"	1.0013357	15' 58.35"	23° 26' 05"	-1 m 51 s
1	18° 38' 13"	-0.53"	17° 11' 16"	7° 17' 57"	1.0013476	15' 58.34"	23° 26' 05"	-1 m 50 s
2	18° 40' 40"	-0.53"	17° 13' 33"	7° 18' 53"	1.0013595	15' 58.33"	23° 26' 05"	-1 m 50 s
3	18° 43' 08"	-0.54"	17° 15' 51"	7° 19' 49"	1.0013714	15' 58.32"	23° 26' 05"	-1 m 49 s
4	18° 45' 35"	-0.54"	17° 18' 08"	7° 20' 45"	1.0013833	15' 58.30"	23° 26' 05"	-1 m 48 s
5	18° 48' 03"	-0.54"	17° 20' 26"	7° 21' 41"	1.0013952	15' 58.29"	23° 26' 05"	-1 m 48 s
6	18° 50' 30"	-0.55"	17° 22' 44"	7° 22' 37"	1.0014071	15' 58.28"	23° 26' 05"	-1 m 47 s
7	18° 52' 58"	-0.55"	17° 25' 01"	7° 23' 32"	1.0014189	15' 58.27"	23° 26' 05"	-1 m 46 s
8	18° 55' 25"	-0.56"	17° 27' 19"	7° 24' 28"	1.0014308	15' 58.26"	23° 26' 05"	-1 m 46 s
9	18° 57' 53"	-0.56"	17° 29' 36"	7° 25' 24"	1.0014427	15' 58.25"	23° 26' 05"	-1 m 45 s
10	19° 00' 20"	-0.57"	17° 31' 54"	7° 26' 20"	1.0014545	15' 58.24"	23° 26' 05"	-1 m 44 s
11	19° 02' 48"	-0.57"	17° 34' 12"	7° 27' 16"	1.0014664	15' 58.22"	23° 26' 05"	-1 m 44 s
12	19° 05' 15"	-0.57"	17° 36' 29"	7° 28' 12"	1.0014783	15' 58.21"	23° 26' 05"	-1 m 43 s
13	19° 07' 43"	-0.58"	17° 38' 47"	7° 29' 08"	1.0014901	15' 58.20"	23° 26' 05"	-1 m 42 s
14	19° 10' 10"	-0.58"	17° 41' 04"	7° 30' 04"	1.0015020	15' 58.19"	23° 26' 05"	-1 m 42 s
15	19° 12' 37"	-0.58"	17° 43' 22"	7° 30' 60"	1.0015138	15' 58.18"	23° 26' 05"	-1 m 41 s
16	19° 15' 05"	-0.59"	17° 45' 40"	7° 31' 56"	1.0015257	15' 58.17"	23° 26' 05"	-1 m 40 s
17	19° 17' 32"	-0.59"	17° 47' 57"	7° 32' 51"	1.0015375	15' 58.16"	23° 26' 05"	-1 m 40 s
18	19° 19' 60"	-0.60"	17° 50' 15"	7° 33' 47"	1.0015494	15' 58.15"	23° 26' 05"	-1 m 39 s
19	19° 22' 27"	-0.60"	17° 52' 33"	7° 34' 43"	1.0015612	15' 58.13"	23° 26' 05"	-1 m 38 s
20	19° 24' 55"	-0.60"	17° 54' 50"	7° 35' 39"	1.0015730	15' 58.12"	23° 26' 05"	-1 m 37 s
21	19° 27' 22"	-0.61"	17° 57' 08"	7° 36' 35"	1.0015849	15' 58.11"	23° 26' 05"	-1 m 37 s
22	19° 29' 50"	-0.61"	17° 59' 26"	7° 37' 30"	1.0015967	15' 58.10"	23° 26' 05"	-1 m 36 s
23	19° 32' 17"	-0.61"	18° 01' 43"	7° 38' 26"	1.0016085	15' 58.09"	23° 26' 05"	-1 m 35 s
24	19° 34' 44"	-0.62"	18° 04' 01"	7° 39' 22"	1.0016203	15' 58.08"	23° 26' 05"	-1 m 35 s

*) for mean equinox of date

8 Mei 2016

DATA MATAHARI

Jam	Ecliptic Longitude (°)	Ecliptic Latitude (°)	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation Of Time
0	47° 50' 34"	-0.62"	45° 22' 27"	17° 08' 40"	1.0093556	15' 50.74"	23° 26' 05"	3 m 30 s
1	47° 52' 59"	-0.62"	45° 24' 53"	17° 09' 21"	1.0093654	15' 50.73"	23° 26' 05"	3 m 30 s
2	47° 55' 24"	-0.63"	45° 27' 19"	17° 10' 01"	1.0093752	15' 50.72"	23° 26' 05"	3 m 30 s
3	47° 57' 49"	-0.63"	45° 29' 45"	17° 10' 42"	1.0093849	15' 50.71"	23° 26' 05"	3 m 30 s
4	48° 00' 14"	-0.63"	45° 32' 11"	17° 11' 22"	1.0093947	15' 50.70"	23° 26' 05"	3 m 31 s
5	48° 02' 39"	-0.63"	45° 34' 37"	17° 12' 03"	1.0094045	15' 50.69"	23° 26' 05"	3 m 31 s
6	48° 05' 05"	-0.63"	45° 37' 03"	17° 12' 43"	1.0094142	15' 50.68"	23° 26' 05"	3 m 31 s
7	48° 07' 30"	-0.63"	45° 39' 29"	17° 13' 23"	1.0094239	15' 50.67"	23° 26' 05"	3 m 31 s
8	48° 09' 55"	-0.63"	45° 41' 54"	17° 14' 04"	1.0094337	15' 50.66"	23° 26' 05"	3 m 31 s
9	48° 12' 20"	-0.63"	45° 44' 20"	17° 14' 44"	1.0094434	15' 50.65"	23° 26' 05"	3 m 31 s
10	48° 14' 45"	-0.64"	45° 46' 46"	17° 15' 24"	1.0094531	15' 50.64"	23° 26' 05"	3 m 31 s
11	48° 17' 10"	-0.64"	45° 49' 13"	17° 16' 05"	1.0094628	15' 50.63"	23° 26' 05"	3 m 31 s
12	48° 19' 35"	-0.64"	45° 51' 39"	17° 16' 45"	1.0094725	15' 50.63"	23° 26' 05"	3 m 32 s
13	48° 22' 01"	-0.64"	45° 54' 05"	17° 17' 25"	1.0094822	15' 50.62"	23° 26' 05"	3 m 32 s
14	48° 24' 26"	-0.64"	45° 56' 31"	17° 18' 05"	1.0094919	15' 50.61"	23° 26' 05"	3 m 32 s
15	48° 26' 51"	-0.64"	45° 58' 57"	17° 18' 45"	1.0095016	15' 50.60"	23° 26' 05"	3 m 32 s
16	48° 29' 16"	-0.64"	46° 01' 23"	17° 19' 25"	1.0095113	15' 50.59"	23° 26' 05"	3 m 32 s
17	48° 31' 41"	-0.64"	46° 03' 49"	17° 20' 05"	1.0095209	15' 50.58"	23° 26' 05"	3 m 32 s
18	48° 34' 06"	-0.64"	46° 06' 15"	17° 20' 45"	1.0095306	15' 50.57"	23° 26' 05"	3 m 32 s
19	48° 36' 31"	-0.64"	46° 08' 41"	17° 21' 25"	1.0095403	15' 50.56"	23° 26' 05"	3 m 32 s
20	48° 38' 56"	-0.64"	46° 11' 07"	17° 22' 05"	1.0095499	15' 50.55"	23° 26' 05"	3 m 33 s
21	48° 41' 21"	-0.64"	46° 13' 34"	17° 22' 45"	1.0095595	15' 50.54"	23° 26' 05"	3 m 33 s
22	48° 43' 47"	-0.64"	46° 15' 60"	17° 23' 25"	1.0095692	15' 50.53"	23° 26' 05"	3 m 33 s
23	48° 46' 12"	-0.64"	46° 18' 26"	17° 24' 05"	1.0095788	15' 50.53"	23° 26' 05"	3 m 33 s
24	48° 48' 37"	-0.64"	46° 20' 52"	17° 24' 45"	1.0095884	15' 50.52"	23° 26' 05"	3 m 33 s

*) for mean equinox of date

8 Juni 2016

DATA MATAHARI

Jam	Ecliptic Longitude (°)	Ecliptic Latitude (°)	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation Of Time
0	77° 38' 45"	-0.43"	76° 33' 59"	22° 51' 36"	1.0150661	15' 45.39"	23° 26' 04"	0 m 57 s
1	77° 41' 08"	-0.43"	76° 36' 34"	22° 51' 49"	1.0150711	15' 45.38"	23° 26' 04"	0 m 56 s
2	77° 43' 32"	-0.43"	76° 39' 09"	22° 52' 02"	1.0150760	15' 45.38"	23° 26' 04"	0 m 56 s
3	77° 45' 55"	-0.42"	76° 41' 44"	22° 52' 15"	1.0150810	15' 45.37"	23° 26' 04"	0 m 55 s
4	77° 48' 19"	-0.42"	76° 44' 19"	22° 52' 28"	1.0150860	15' 45.37"	23° 26' 04"	0 m 55 s
5	77° 50' 42"	-0.42"	76° 46' 54"	22° 52' 41"	1.0150909	15' 45.36"	23° 26' 04"	0 m 54 s
6	77° 53' 06"	-0.41"	76° 49' 30"	22° 52' 54"	1.0150959	15' 45.36"	23° 26' 04"	0 m 54 s
7	77° 55' 29"	-0.41"	76° 52' 05"	22° 53' 07"	1.0151008	15' 45.35"	23° 26' 04"	0 m 53 s
8	77° 57' 53"	-0.41"	76° 54' 40"	22° 53' 20"	1.0151058	15' 45.35"	23° 26' 04"	0 m 53 s
9	78° 00' 16"	-0.40"	76° 57' 15"	22° 53' 33"	1.0151107	15' 45.35"	23° 26' 04"	0 m 52 s
10	78° 02' 40"	-0.40"	76° 59' 50"	22° 53' 46"	1.0151156	15' 45.34"	23° 26' 04"	0 m 52 s
11	78° 05' 03"	-0.40"	77° 02' 25"	22° 53' 59"	1.0151205	15' 45.34"	23° 26' 04"	0 m 51 s
12	78° 07' 27"	-0.39"	77° 05' 00"	22° 54' 12"	1.0151254	15' 45.33"	23° 26' 04"	0 m 51 s
13	78° 09' 50"	-0.39"	77° 07' 36"	22° 54' 24"	1.0151303	15' 45.33"	23° 26' 04"	0 m 50 s
14	78° 12' 14"	-0.39"	77° 10' 11"	22° 54' 37"	1.0151352	15' 45.32"	23° 26' 04"	0 m 50 s
15	78° 14' 37"	-0.38"	77° 12' 46"	22° 54' 50"	1.0151400	15' 45.32"	23° 26' 04"	0 m 49 s
16	78° 17' 01"	-0.38"	77° 15' 21"	22° 55' 02"	1.0151449	15' 45.31"	23° 26' 04"	0 m 49 s
17	78° 19' 24"	-0.37"	77° 17' 56"	22° 55' 15"	1.0151497	15' 45.31"	23° 26' 04"	0 m 48 s
18	78° 21' 48"	-0.37"	77° 20' 32"	22° 55' 27"	1.0151546	15' 45.30"	23° 26' 04"	0 m 48 s
19	78° 24' 11"	-0.37"	77° 23' 07"	22° 55' 40"	1.0151594	15' 45.30"	23° 26' 04"	0 m 48 s
20	78° 26' 35"	-0.36"	77° 25' 42"	22° 55' 52"	1.0151642	15' 45.30"	23° 26' 04"	0 m 47 s
21	78° 28' 58"	-0.36"	77° 28' 17"	22° 56' 05"	1.0151690	15' 45.29"	23° 26' 04"	0 m 47 s
22	78° 31' 22"	-0.35"	77° 30' 52"	22° 56' 17"	1.0151738	15' 45.29"	23° 26' 04"	0 m 46 s
23	78° 33' 45"	-0.35"	77° 33' 28"	22° 56' 30"	1.0151786	15' 45.28"	23° 26' 04"	0 m 46 s
24	78° 36' 09"	-0.35"	77° 36' 03"	22° 56' 42"	1.0151834	15' 45.28"	23° 26' 04"	0 m 45 s

*) for mean equinox of date

8 Juli 2016

DATA MATAHARI

Jam	Ecliptic Longitude (°)	Ecliptic Latitude (°)	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation Of Time
0	106° 16' 29"	-0.03"	107° 38' 36"	22° 26' 38"	1.0167175	15' 43.85"	23° 26' 04"	-5 m 05 s
1	106° 18' 52"	-0.03"	107° 41' 10"	22° 26' 20"	1.0167167	15' 43.85"	23° 26' 04"	-5 m 06 s
2	106° 21' 15"	-0.02"	107° 43' 43"	22° 26' 03"	1.0167158	15' 43.85"	23° 26' 04"	-5 m 06 s
3	106° 23' 38"	-0.02"	107° 46' 17"	22° 25' 46"	1.0167149	15' 43.85"	23° 26' 04"	-5 m 06 s
4	106° 26' 01"	-0.01"	107° 48' 51"	22° 25' 28"	1.0167141	15' 43.85"	23° 26' 04"	-5 m 07 s
5	106° 28' 24"	-0.01"	107° 51' 24"	22° 25' 11"	1.0167132	15' 43.86"	23° 26' 04"	-5 m 07 s
6	106° 30' 48"	0.00"	107° 53' 58"	22° 24' 54"	1.0167123	15' 43.86"	23° 26' 04"	-5 m 07 s
7	106° 33' 11"	0.01"	107° 56' 31"	22° 24' 36"	1.0167114	15' 43.86"	23° 26' 04"	-5 m 08 s
8	106° 35' 34"	0.01"	107° 59' 05"	22° 24' 18"	1.0167105	15' 43.86"	23° 26' 04"	-5 m 08 s
9	106° 37' 57"	0.02"	108° 01' 38"	22° 24' 01"	1.0167096	15' 43.86"	23° 26' 04"	-5 m 09 s
10	106° 40' 20"	0.02"	108° 04' 12"	22° 23' 43"	1.0167086	15' 43.86"	23° 26' 04"	-5 m 09 s
11	106° 42' 43"	0.03"	108° 06' 45"	22° 23' 26"	1.0167077	15' 43.86"	23° 26' 04"	-5 m 09 s
12	106° 45' 06"	0.03"	108° 09' 19"	22° 23' 08"	1.0167067	15' 43.86"	23° 26' 04"	-5 m 10 s
13	106° 47' 29"	0.04"	108° 11' 53"	22° 22' 50"	1.0167058	15' 43.86"	23° 26' 04"	-5 m 10 s
14	106° 49' 52"	0.04"	108° 14' 26"	22° 22' 32"	1.0167048	15' 43.86"	23° 26' 04"	-5 m 10 s
15	106° 52' 15"	0.05"	108° 16' 60"	22° 22' 15"	1.0167038	15' 43.86"	23° 26' 04"	-5 m 11 s
16	106° 54' 38"	0.06"	108° 19' 33"	22° 21' 57"	1.0167028	15' 43.86"	23° 26' 04"	-5 m 11 s
17	106° 57' 01"	0.06"	108° 22' 06"	22° 21' 39"	1.0167018	15' 43.87"	23° 26' 04"	-5 m 12 s
18	106° 59' 24"	0.07"	108° 24' 40"	22° 21' 21"	1.0167008	15' 43.87"	23° 26' 04"	-5 m 12 s
19	107° 01' 47"	0.07"	108° 27' 13"	22° 21' 03"	1.0166998	15' 43.87"	23° 26' 04"	-5 m 12 s
20	107° 04' 10"	0.08"	108° 29' 47"	22° 20' 45"	1.0166988	15' 43.87"	23° 26' 04"	-5 m 13 s
21	107° 06' 33"	0.08"	108° 32' 20"	22° 20' 27"	1.0166977	15' 43.87"	23° 26' 04"	-5 m 13 s
22	107° 08' 56"	0.09"	108° 34' 54"	22° 20' 09"	1.0166967	15' 43.87"	23° 26' 04"	-5 m 13 s
23	107° 11' 19"	0.09"	108° 37' 27"	22° 19' 51"	1.0166956	15' 43.87"	23° 26' 04"	-5 m 14 s
24	107° 13' 42"	0.10"	108° 40' 00"	22° 19' 32"	1.0166945	15' 43.87"	23° 26' 04"	-5 m 14 s

*) for mean equinox of date

8 Agustus 2016

DATA MATAHARI

Jam	Ecliptic Longitude (°)	Ecliptic Latitude (°)	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation Of Time
0	135° 53' 20"	0.55"	138° 20' 27"	16° 04' 22"	1.0139915	15' 46.39"	23° 26' 05"	-5 m 40 s
1	135° 55' 43"	0.56"	138° 22' 50"	16° 03' 39"	1.0139847	15' 46.39"	23° 26' 05"	-5 m 39 s
2	135° 58' 07"	0.56"	138° 25' 13"	16° 02' 57"	1.0139780	15' 46.40"	23° 26' 05"	-5 m 39 s
3	136° 00' 31"	0.57"	138° 27' 36"	16° 02' 14"	1.0139713	15' 46.41"	23° 26' 05"	-5 m 39 s
4	136° 02' 55"	0.57"	138° 29' 59"	16° 01' 31"	1.0139646	15' 46.41"	23° 26' 05"	-5 m 38 s
5	136° 05' 19"	0.58"	138° 32' 22"	16° 00' 48"	1.0139578	15' 46.42"	23° 26' 05"	-5 m 38 s
6	136° 07' 43"	0.58"	138° 34' 44"	16° 00' 05"	1.0139510	15' 46.43"	23° 26' 05"	-5 m 38 s
7	136° 10' 06"	0.59"	138° 37' 07"	15° 59' 22"	1.0139443	15' 46.43"	23° 26' 05"	-5 m 37 s
8	136° 12' 30"	0.59"	138° 39' 30"	15° 58' 39"	1.0139375	15' 46.44"	23° 26' 05"	-5 m 37 s
9	136° 14' 54"	0.60"	138° 41' 53"	15° 57' 56"	1.0139307	15' 46.45"	23° 26' 05"	-5 m 37 s
10	136° 17' 18"	0.60"	138° 44' 15"	15° 57' 13"	1.0139239	15' 46.45"	23° 26' 05"	-5 m 36 s
11	136° 19' 42"	0.61"	138° 46' 38"	15° 56' 30"	1.0139171	15' 46.46"	23° 26' 05"	-5 m 36 s
12	136° 22' 05"	0.61"	138° 49' 01"	15° 55' 47"	1.0139103	15' 46.46"	23° 26' 05"	-5 m 35 s
13	136° 24' 29"	0.61"	138° 51' 24"	15° 55' 04"	1.0139035	15' 46.47"	23° 26' 05"	-5 m 35 s
14	136° 26' 53"	0.62"	138° 53' 46"	15° 54' 21"	1.0138967	15' 46.48"	23° 26' 05"	-5 m 35 s
15	136° 29' 17"	0.62"	138° 56' 09"	15° 53' 38"	1.0138899	15' 46.48"	23° 26' 05"	-5 m 34 s
16	136° 31' 41"	0.63"	138° 58' 32"	15° 52' 55"	1.0138830	15' 46.49"	23° 26' 05"	-5 m 34 s
17	136° 34' 05"	0.63"	139° 00' 54"	15° 52' 12"	1.0138762	15' 46.50"	23° 26' 05"	-5 m 34 s
18	136° 36' 28"	0.64"	139° 03' 17"	15° 51' 29"	1.0138694	15' 46.50"	23° 26' 05"	-5 m 33 s
19	136° 38' 52"	0.64"	139° 05' 39"	15° 50' 45"	1.0138625	15' 46.51"	23° 26' 05"	-5 m 33 s
20	136° 41' 16"	0.65"	139° 08' 02"	15° 50' 02"	1.0138556	15' 46.52"	23° 26' 05"	-5 m 33 s
21	136° 43' 40"	0.65"	139° 10' 25"	15° 49' 19"	1.0138488	15' 46.52"	23° 26' 05"	-5 m 32 s
22	136° 46' 04"	0.65"	139° 12' 47"	15° 48' 36"	1.0138419	15' 46.53"	23° 26' 05"	-5 m 32 s
23	136° 48' 28"	0.66"	139° 15' 10"	15° 47' 52"	1.0138350	15' 46.53"	23° 26' 05"	-5 m 32 s
24	136° 50' 51"	0.66"	139° 17' 32"	15° 47' 09"	1.0138281	15' 46.54"	23° 26' 05"	-5 m 31 s

*) for mean equinox of date

8 September 2016

DATA MATAHARI

Jam	Ecliptic Longitude (°)	Ecliptic Latitude (°)	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation Of Time
0	165° 46' 50"	0.86°	166° 54' 17"	5° 36' 33"	1.0074635	15' 52.52"	23° 26' 05"	2 m 17 s
1	165° 49' 15"	0.86°	166° 56' 32"	5° 35' 37"	1.0074526	15' 52.53"	23° 26' 05"	2 m 18 s
2	165° 51' 41"	0.86°	166° 58' 47"	5° 34' 40"	1.0074417	15' 52.54"	23° 26' 05"	2 m 19 s
3	165° 54' 07"	0.86°	167° 01' 02"	5° 33' 44"	1.0074307	15' 52.55"	23° 26' 05"	2 m 20 s
4	165° 56' 32"	0.86°	167° 03' 17"	5° 32' 47"	1.0074198	15' 52.56"	23° 26' 05"	2 m 21 s
5	165° 58' 58"	0.86°	167° 05' 32"	5° 31' 51"	1.0074089	15' 52.57"	23° 26' 05"	2 m 22 s
6	166° 01' 24"	0.87°	167° 07' 47"	5° 30' 54"	1.0073980	15' 52.58"	23° 26' 05"	2 m 23 s
7	166° 03' 49"	0.87°	167° 10' 02"	5° 29' 58"	1.0073871	15' 52.59"	23° 26' 05"	2 m 23 s
8	166° 06' 15"	0.87°	167° 12' 17"	5° 29' 01"	1.0073761	15' 52.60"	23° 26' 05"	2 m 24 s
9	166° 08' 41"	0.87°	167° 14' 32"	5° 28' 05"	1.0073652	15' 52.61"	23° 26' 05"	2 m 25 s
10	166° 11' 06"	0.87°	167° 16' 47"	5° 27' 08"	1.0073543	15' 52.62"	23° 26' 05"	2 m 26 s
11	166° 13' 32"	0.87°	167° 19' 01"	5° 26' 12"	1.0073433	15' 52.63"	23° 26' 05"	2 m 27 s
12	166° 15' 58"	0.87°	167° 21' 16"	5° 25' 15"	1.0073324	15' 52.64"	23° 26' 05"	2 m 28 s
13	166° 18' 24"	0.87°	167° 23' 31"	5° 24' 19"	1.0073214	15' 52.66"	23° 26' 05"	2 m 29 s
14	166° 20' 49"	0.87°	167° 25' 46"	5° 23' 22"	1.0073105	15' 52.67"	23° 26' 05"	2 m 29 s
15	166° 23' 15"	0.87°	167° 28' 01"	5° 22' 26"	1.0072995	15' 52.68"	23° 26' 05"	2 m 30 s
16	166° 25' 41"	0.87°	167° 30' 16"	5° 21' 29"	1.0072886	15' 52.69"	23° 26' 05"	2 m 31 s
17	166° 28' 06"	0.87°	167° 32' 31"	5° 20' 33"	1.0072776	15' 52.70"	23° 26' 05"	2 m 32 s
18	166° 30' 32"	0.87°	167° 34' 46"	5° 19' 36"	1.0072666	15' 52.71"	23° 26' 05"	2 m 33 s
19	166° 32' 58"	0.87°	167° 37' 00"	5° 18' 39"	1.0072557	15' 52.72"	23° 26' 05"	2 m 34 s
20	166° 35' 23"	0.87°	167° 39' 15"	5° 17' 43"	1.0072447	15' 52.73"	23° 26' 05"	2 m 35 s
21	166° 37' 49"	0.87°	167° 41' 30"	5° 16' 46"	1.0072337	15' 52.74"	23° 26' 05"	2 m 35 s
22	166° 40' 15"	0.87°	167° 43' 45"	5° 15' 50"	1.0072227	15' 52.75"	23° 26' 05"	2 m 36 s
23	166° 42' 41"	0.87°	167° 45' 60"	5° 14' 53"	1.0072117	15' 52.76"	23° 26' 05"	2 m 37 s
24	166° 45' 06"	0.87°	167° 48' 15"	5° 13' 56"	1.0072007	15' 52.77"	23° 26' 05"	2 m 38 s

*) for mean equinox of date

8 Oktober 2016

DATA MATAHARI

Jam	Ecliptic Longitude (°)	Ecliptic Latitude (°)	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation Of Time
0	195° 08' 53"	0.72°	193° 56' 33"	-5° 57' 44"	0.9991367	16' 00.46"	23° 26' 05"	12 m 26 s
1	195° 11' 21"	0.71°	193° 58' 50"	-5° 58' 41"	0.9991245	16' 00.47"	23° 26' 05"	12 m 27 s
2	195° 13' 49"	0.71°	194° 01' 08"	-5° 59' 38"	0.9991122	16' 00.48"	23° 26' 05"	12 m 28 s
3	195° 16' 17"	0.71°	194° 03' 25"	-6° 00' 35"	0.9991000	16' 00.49"	23° 26' 05"	12 m 29 s
4	195° 18' 45"	0.71°	194° 05' 42"	-6° 01' 32"	0.9990878	16' 00.51"	23° 26' 05"	12 m 29 s
5	195° 21' 13"	0.70°	194° 07' 60"	-6° 02' 30"	0.9990756	16' 00.52"	23° 26' 05"	12 m 30 s
6	195° 23' 42"	0.70°	194° 10' 17"	-6° 03' 27"	0.9990633	16' 00.53"	23° 26' 05"	12 m 31 s
7	195° 26' 10"	0.70°	194° 12' 35"	-6° 04' 24"	0.9990511	16' 00.54"	23° 26' 05"	12 m 31 s
8	195° 28' 38"	0.69°	194° 14' 52"	-6° 05' 21"	0.9990389	16' 00.55"	23° 26' 05"	12 m 32 s
9	195° 31' 06"	0.69°	194° 17' 09"	-6° 06' 18"	0.9990266	16' 00.56"	23° 26' 05"	12 m 33 s
10	195° 33' 34"	0.69°	194° 19' 27"	-6° 07' 15"	0.9990144	16' 00.58"	23° 26' 05"	12 m 33 s
11	195° 36' 02"	0.68°	194° 21' 44"	-6° 08' 12"	0.9990022	16' 00.59"	23° 26' 05"	12 m 34 s
12	195° 38' 30"	0.68°	194° 24' 02"	-6° 09' 09"	0.9989899	16' 00.60"	23° 26' 05"	12 m 35 s
13	195° 40' 58"	0.68°	194° 26' 19"	-6° 10' 06"	0.9989777	16' 00.61"	23° 26' 05"	12 m 36 s
14	195° 43' 27"	0.67°	194° 28' 37"	-6° 11' 03"	0.9989655	16' 00.62"	23° 26' 05"	12 m 36 s
15	195° 45' 55"	0.67°	194° 30' 54"	-6° 12' 00"	0.9989532	16' 00.64"	23° 26' 05"	12 m 37 s
16	195° 48' 23"	0.67°	194° 33' 12"	-6° 12' 57"	0.9989410	16' 00.65"	23° 26' 05"	12 m 38 s
17	195° 50' 51"	0.66°	194° 35' 29"	-6° 13' 54"	0.9989288	16' 00.66"	23° 26' 05"	12 m 38 s
18	195° 53' 19"	0.66°	194° 37' 47"	-6° 14' 51"	0.9989166	16' 00.67"	23° 26' 05"	12 m 39 s
19	195° 55' 47"	0.66°	194° 40' 05"	-6° 15' 48"	0.9989043	16' 00.68"	23° 26' 05"	12 m 40 s
20	195° 58' 15"	0.65°	194° 42' 22"	-6° 16' 45"	0.9988921	16' 00.69"	23° 26' 05"	12 m 40 s
21	196° 00' 44"	0.65°	194° 44' 40"	-6° 17' 42"	0.9988799	16' 00.71"	23° 26' 05"	12 m 41 s
22	196° 03' 12"	0.65°	194° 46' 57"	-6° 18' 39"	0.9988676	16' 00.72"	23° 26' 05"	12 m 42 s
23	196° 05' 40"	0.64°	194° 49' 15"	-6° 19' 36"	0.9988554	16' 00.73"	23° 26' 05"	12 m 42 s
24	196° 08' 08"	0.64°	194° 51' 33"	-6° 20' 33"	0.9988432	16' 00.74"	23° 26' 05"	12 m 43 s

*) for mean equinox of date

8 November 2016

DATA MATAHARI

Jam	Ecliptic Longitude *)	Ecliptic Latitude *)	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation Of Time
0	226° 01' 09"	0.13"	223° 32' 45"	-16° 37' 37"	0.9907282	16' 08.61"	23° 26' 05"	16 m 18 s
1	226° 03' 39"	0.13"	223° 35' 16"	-16° 38' 20"	0.9907179	16' 08.62"	23° 26' 05"	16 m 18 s
2	226° 06' 10"	0.12"	223° 37' 46"	-16° 39' 03"	0.9907076	16' 08.63"	23° 26' 05"	16 m 18 s
3	226° 08' 41"	0.12"	223° 40' 17"	-16° 39' 47"	0.9906973	16' 08.64"	23° 26' 05"	16 m 17 s
4	226° 11' 11"	0.11"	223° 42' 47"	-16° 40' 30"	0.9906870	16' 08.65"	23° 26' 05"	16 m 17 s
5	226° 13' 42"	0.10"	223° 45' 18"	-16° 41' 13"	0.9906767	16' 08.66"	23° 26' 05"	16 m 17 s
6	226° 16' 12"	0.10"	223° 47' 49"	-16° 41' 57"	0.9906664	16' 08.67"	23° 26' 05"	16 m 17 s
7	226° 18' 43"	0.09"	223° 50' 19"	-16° 42' 40"	0.9906561	16' 08.68"	23° 26' 05"	16 m 17 s
8	226° 21' 14"	0.09"	223° 52' 50"	-16° 43' 23"	0.9906458	16' 08.69"	23° 26' 05"	16 m 17 s
9	226° 23' 44"	0.08"	223° 55' 21"	-16° 44' 06"	0.9906355	16' 08.70"	23° 26' 05"	16 m 16 s
10	226° 26' 15"	0.08"	223° 57' 51"	-16° 44' 49"	0.9906252	16' 08.71"	23° 26' 05"	16 m 16 s
11	226° 28' 46"	0.07"	224° 00' 22"	-16° 45' 32"	0.9906150	16' 08.72"	23° 26' 05"	16 m 16 s
12	226° 31' 16"	0.06"	224° 02' 53"	-16° 46' 16"	0.9906047	16' 08.73"	23° 26' 05"	16 m 16 s
13	226° 33' 47"	0.06"	224° 05' 24"	-16° 46' 59"	0.9905944	16' 08.74"	23° 26' 05"	16 m 16 s
14	226° 36' 17"	0.05"	224° 07' 54"	-16° 47' 42"	0.9905842	16' 08.75"	23° 26' 05"	16 m 15 s
15	226° 38' 48"	0.05"	224° 10' 25"	-16° 48' 25"	0.9905739	16' 08.76"	23° 26' 05"	16 m 15 s
16	226° 41' 19"	0.04"	224° 12' 56"	-16° 49' 08"	0.9905637	16' 08.77"	23° 26' 05"	16 m 15 s
17	226° 43' 49"	0.03"	224° 15' 27"	-16° 49' 51"	0.9905534	16' 08.78"	23° 26' 05"	16 m 15 s
18	226° 46' 20"	0.03"	224° 17' 58"	-16° 50' 33"	0.9905432	16' 08.79"	23° 26' 05"	16 m 15 s
19	226° 48' 51"	0.02"	224° 20' 29"	-16° 51' 16"	0.9905330	16' 08.80"	23° 26' 05"	16 m 14 s
20	226° 51' 21"	0.02"	224° 22' 59"	-16° 51' 59"	0.9905228	16' 08.81"	23° 26' 05"	16 m 14 s
21	226° 53' 52"	0.01"	224° 25' 30"	-16° 52' 42"	0.9905125	16' 08.82"	23° 26' 05"	16 m 14 s
22	226° 56' 23"	0.01"	224° 28' 01"	-16° 53' 25"	0.9905023	16' 08.83"	23° 26' 05"	16 m 14 s
23	226° 58' 53"	-0.00"	224° 30' 32"	-16° 54' 07"	0.9904921	16' 08.84"	23° 26' 05"	16 m 13 s
24	227° 01' 24"	-0.01"	224° 33' 03"	-16° 54' 50"	0.9904819	16' 08.85"	23° 26' 05"	16 m 13 s

*) for mean equinox of date

8 Desember 2016

DATA MATAHARI

Jam	Ecliptic Longitude *)	Ecliptic Latitude *)	Apparent Right Ascension	Apparent Declination	True Geocentric Distance	Semi Diameter	True Obliquity	Equation Of Time
0	256° 19' 54"	-0.45"	255° 08' 48"	-22° 43' 57"	0.9850275	16' 14.22"	23° 26' 04"	8 m 07 s
1	256° 22' 27"	-0.45"	255° 11' 32"	-22° 44' 12"	0.9850218	16' 14.22"	23° 26' 04"	8 m 06 s
2	256° 24' 59"	-0.46"	255° 14' 17"	-22° 44' 28"	0.9850161	16' 14.23"	23° 26' 04"	8 m 05 s
3	256° 27' 31"	-0.46"	255° 17' 01"	-22° 44' 43"	0.9850105	16' 14.23"	23° 26' 04"	8 m 04 s
4	256° 30' 04"	-0.47"	255° 19' 45"	-22° 44' 58"	0.9850048	16' 14.24"	23° 26' 04"	8 m 03 s
5	256° 32' 36"	-0.47"	255° 22' 30"	-22° 45' 14"	0.9849992	16' 14.24"	23° 26' 04"	8 m 01 s
6	256° 35' 08"	-0.48"	255° 25' 14"	-22° 45' 29"	0.9849936	16' 14.25"	23° 26' 04"	8 m 00 s
7	256° 37' 41"	-0.48"	255° 27' 59"	-22° 45' 44"	0.9849880	16' 14.26"	23° 26' 04"	7 m 59 s
8	256° 40' 13"	-0.49"	255° 30' 43"	-22° 45' 60"	0.9849824	16' 14.26"	23° 26' 04"	7 m 58 s
9	256° 42' 45"	-0.49"	255° 33' 27"	-22° 46' 15"	0.9849768	16' 14.27"	23° 26' 04"	7 m 57 s
10	256° 45' 18"	-0.50"	255° 36' 12"	-22° 46' 30"	0.9849712	16' 14.27"	23° 26' 04"	7 m 56 s
11	256° 47' 50"	-0.50"	255° 38' 56"	-22° 46' 45"	0.9849656	16' 14.28"	23° 26' 04"	7 m 55 s
12	256° 50' 22"	-0.51"	255° 41' 41"	-22° 46' 60"	0.9849600	16' 14.28"	23° 26' 04"	7 m 54 s
13	256° 52' 55"	-0.51"	255° 44' 25"	-22° 47' 15"	0.9849545	16' 14.29"	23° 26' 04"	7 m 53 s
14	256° 55' 27"	-0.52"	255° 47' 10"	-22° 47' 30"	0.9849489	16' 14.29"	23° 26' 04"	7 m 51 s
15	256° 57' 59"	-0.52"	255° 49' 54"	-22° 47' 45"	0.9849434	16' 14.30"	23° 26' 04"	7 m 50 s
16	257° 00' 32"	-0.53"	255° 52' 38"	-22° 47' 59"	0.9849378	16' 14.31"	23° 26' 04"	7 m 49 s
17	257° 03' 04"	-0.53"	255° 55' 23"	-22° 48' 14"	0.9849323	16' 14.31"	23° 26' 04"	7 m 48 s
18	257° 05' 37"	-0.54"	255° 58' 07"	-22° 48' 29"	0.9849268	16' 14.32"	23° 26' 04"	7 m 47 s
19	257° 08' 09"	-0.54"	256° 00' 52"	-22° 48' 43"	0.9849212	16' 14.32"	23° 26' 04"	7 m 46 s
20	257° 10' 41"	-0.55"	256° 03' 37"	-22° 48' 58"	0.9849157	16' 14.33"	23° 26' 04"	7 m 45 s
21	257° 13' 14"	-0.55"	256° 06' 21"	-22° 49' 13"	0.9849103	16' 14.33"	23° 26' 04"	7 m 44 s
22	257° 15' 46"	-0.56"	256° 09' 06"	-22° 49' 27"	0.9849048	16' 14.34"	23° 26' 04"	7 m 43 s
23	257° 18' 18"	-0.56"	256° 11' 50"	-22° 49' 42"	0.9848993	16' 14.34"	23° 26' 04"	7 m 41 s
24	257° 20' 51"	-0.57"	256° 14' 35"	-22° 49' 56"	0.9848938	16' 14.35"	23° 26' 04"	7 m 40 s

*) for mean equinox of date

2. Data jadwal waktu salat Kemenag RI



Kementerian Agama Republik Indonesia
Jadwal Shalat
Propinsi : JAWA TENGAH
Daerah : SEMARANG

Tanggal	Imsak	Subuh	Terbit	Duha	Zuhur	Asar	Magrib	Isya
Jumat, 01 Jan 2016	03:51	04:01	05:22	05:50	11:44	15:10	18:00	19:16
Sabtu, 02 Jan 2016	03:52	04:02	05:23	05:51	11:45	15:11	18:01	19:16
Minggu, 03 Jan 2016	03:53	04:03	05:23	05:51	11:45	15:11	18:01	19:17
Senin, 04 Jan 2016	03:53	04:03	05:24	05:52	11:46	15:11	18:01	19:17
Selasa, 05 Jan 2016	03:54	04:04	05:24	05:52	11:46	15:12	18:02	19:17
Rabu, 06 Jan 2016	03:54	04:04	05:25	05:53	11:47	15:12	18:02	19:18
Kamis, 07 Jan 2016	03:55	04:05	05:25	05:53	11:47	15:12	18:03	19:18
Jumat, 08 Jan 2016	03:56	04:06	05:26	05:54	11:47	15:13	18:03	19:18
Sabtu, 09 Jan 2016	03:56	04:06	05:26	05:54	11:48	15:13	18:03	19:18



Kementerian Agama Republik Indonesia
Jadwal Shalat
Propinsi : JAWA TENGAH
Daerah : SEMARANG

Tanggal	Imsak	Subuh	Terbit	Duha	Zuhur	Asar	Magrib	Isya
Senin, 01 Feb 2016	04:09	04:19	05:36	06:03	11:55	15:13	18:07	19:19
Selasa, 02 Feb 2016	04:09	04:19	05:36	06:04	11:55	15:13	18:07	19:19
Rabu, 03 Feb 2016	04:10	04:20	05:37	06:04	11:55	15:13	18:07	19:19
Kamis, 04 Feb 2016	04:10	04:20	05:37	06:04	11:55	15:12	18:07	19:19
Jumat, 05 Feb 2016	04:11	04:21	05:37	06:04	11:55	15:12	18:07	19:19
Sabtu, 06 Feb 2016	04:11	04:21	05:38	06:05	11:55	15:12	18:07	19:18
Minggu, 07 Feb 2016	04:11	04:21	05:38	06:05	11:55	15:11	18:06	19:18
Senin, 08 Feb 2016	04:12	04:22	05:38	06:05	11:55	15:11	18:06	19:18
Selasa, 09 Feb 2016	04:12	04:22	05:38	06:05	11:55	15:10	18:06	19:18
Rabu, 10 Feb 2016	04:13	04:23	05:39	06:05	11:55	15:10	18:06	19:17



Kementerian Agama Republik Indonesia

Jadwal Shalat

Propinsi : JAWA TENGAH

Daerah : SEMARANG

Tanggal	Imsak	Subuh	Terbit	Duha	Zuhur	Asar	Magrib	Isya
Selasa, 01 Mar 2016	04:17	04:27	05:41	06:07	11:53	14:54	18:00	19:10
Rabu, 02 Mar 2016	04:17	04:27	05:41	06:07	11:53	14:54	18:00	19:09
Kamis, 03 Mar 2016	04:17	04:27	05:41	06:07	11:53	14:54	17:59	19:09
Jumat, 04 Mar 2016	04:17	04:27	05:41	06:07	11:53	14:55	17:59	19:08
Sabtu, 05 Mar 2016	04:17	04:27	05:40	06:07	11:53	14:55	17:59	19:08
Minggu, 06 Mar 2016	04:17	04:27	05:40	06:07	11:52	14:56	17:58	19:07
Senin, 07 Mar 2016	04:17	04:27	05:40	06:07	11:52	14:56	17:58	19:07
Selasa, 08 Mar 2016	04:17	04:27	05:40	06:07	11:52	14:56	17:57	19:06
Rabu, 09 Mar 2016	04:17	04:27	05:40	06:07	11:52	14:57	17:57	19:06
Kamis, 10 Mar 2016	04:17	04:27	05:40	06:07	11:51	14:57	17:56	19:05



Kementerian Agama Republik Indonesia

Jadwal Shalat

Propinsi : JAWA TENGAH

Daerah : SEMARANG

Tanggal	Imsak	Subuh	Terbit	Duha	Zuhur	Asar	Magrib	Isya
Jumat, 01 Apr 2016	04:16	04:26	05:38	06:05	11:45	15:00	17:45	18:54
Sabtu, 02 Apr 2016	04:15	04:25	05:38	06:05	11:45	15:00	17:45	18:54
Minggu, 03 Apr 2016	04:15	04:25	05:38	06:04	11:44	15:00	17:44	18:53
Senin, 04 Apr 2016	04:15	04:25	05:38	06:04	11:44	15:00	17:44	18:53
Selasa, 05 Apr 2016	04:15	04:25	05:38	06:04	11:44	15:00	17:44	18:52
Rabu, 06 Apr 2016	04:15	04:25	05:38	06:04	11:43	15:00	17:43	18:52
Kamis, 07 Apr 2016	04:15	04:25	05:38	06:04	11:43	15:00	17:43	18:51
Jumat, 08 Apr 2016	04:15	04:25	05:38	06:04	11:43	15:00	17:42	18:51
Sabtu, 09 Apr 2016	04:14	04:24	05:38	06:04	11:43	15:00	17:42	18:51
Minggu, 10 Apr 2016	04:14	04:24	05:38	06:04	11:42	15:00	17:41	18:50



Kementerian Agama Republik Indonesia

Jadwal Shalat

Propinsi : JAWA TENGAH

Daerah : SEMARANG

Tanggal	Imsak	Subuh	Terbit	Duha	Zuhur	Asar	Magrib	Isya
Minggu, 01 May 2016	04:12	04:22	05:37	06:04	11:38	14:58	17:33	18:44
Senin, 02 May 2016	04:12	04:22	05:37	06:04	11:38	14:58	17:33	18:44
Selasa, 03 May 2016	04:12	04:22	05:37	06:04	11:38	14:58	17:33	18:44
Rabu, 04 May 2016	04:12	04:22	05:37	06:04	11:38	14:58	17:33	18:44
Kamis, 05 May 2016	04:12	04:22	05:37	06:04	11:38	14:58	17:32	18:44
Jumat, 06 May 2016	04:12	04:22	05:37	06:04	11:38	14:58	17:32	18:43
Sabtu, 07 May 2016	04:12	04:22	05:37	06:05	11:38	14:58	17:32	18:43
Minggu, 08 May 2016	04:12	04:22	05:37	06:05	11:38	14:58	17:32	18:43
Senin, 09 May 2016	04:12	04:22	05:38	06:05	11:38	14:58	17:32	18:43
Selasa, 10 May 2016	04:12	04:22	05:38	06:05	11:38	14:58	17:31	18:43



Kementerian Agama Republik Indonesia

Jadwal Shalat

Propinsi : JAWA TENGAH

Daerah : SEMARANG

Tanggal	Imsak	Subuh	Terbit	Duha	Zuhur	Asar	Magrib	Isya
Rabu, 01 Jun 2016	04:13	04:23	05:41	06:09	11:39	14:59	17:30	18:44
Kamis, 02 Jun 2016	04:13	04:23	05:42	06:10	11:39	14:59	17:31	18:44
Jumat, 03 Jun 2016	04:14	04:24	05:42	06:10	11:39	15:00	17:31	18:44
Sabtu, 04 Jun 2016	04:14	04:24	05:42	06:10	11:39	15:00	17:31	18:45
Minggu, 05 Jun 2016	04:14	04:24	05:42	06:11	11:40	15:00	17:31	18:45
Senin, 06 Jun 2016	04:14	04:24	05:43	06:11	11:40	15:00	17:31	18:45
Selasa, 07 Jun 2016	04:14	04:24	05:43	06:11	11:40	15:00	17:31	18:45
Rabu, 08 Jun 2016	04:14	04:24	05:43	06:11	11:40	15:00	17:31	18:45
Kamis, 09 Jun 2016	04:15	04:25	05:43	06:12	11:40	15:01	17:31	18:46



Kementerian Agama Republik Indonesia

Jadwal Shalat

Propinsi : JAWA TENGAH

Daerah : SEMARANG

Tanggal	Imsak	Subuh	Terbit	Duha	Zuhur	Asar	Magrib	Isya
Jumat, 01 Jul 2016	04:19	04:29	05:48	06:16	11:45	15:05	17:36	18:50
Sabtu, 02 Jul 2016	04:19	04:29	05:48	06:16	11:45	15:05	17:36	18:50
Minggu, 03 Jul 2016	04:20	04:30	05:48	06:17	11:45	15:06	17:36	18:50
Senin, 04 Jul 2016	04:20	04:30	05:48	06:17	11:46	15:06	17:37	18:51
Selasa, 05 Jul 2016	04:20	04:30	05:49	06:17	11:46	15:06	17:37	18:51
Rabu, 06 Jul 2016	04:20	04:30	05:49	06:17	11:46	15:06	17:37	18:51
Kamis, 07 Jul 2016	04:20	04:30	05:49	06:17	11:46	15:06	17:37	18:51
Jumat, 08 Jul 2016	04:20	04:30	05:49	06:17	11:46	15:07	17:38	18:51
Sabtu, 09 Jul 2016	04:21	04:31	05:49	06:17	11:46	15:07	17:38	18:51



Kementerian Agama Republik Indonesia

Jadwal Shalat

Propinsi : JAWA TENGAH

Daerah : SEMARANG

Tanggal	Imsak	Subuh	Terbit	Duha	Zuhur	Asar	Magrib	Isya
Senin, 01 Aug 2016	04:22	04:32	05:48	06:15	11:47	15:08	17:41	18:53
Selasa, 02 Aug 2016	04:21	04:31	05:48	06:15	11:47	15:08	17:41	18:53
Rabu, 03 Aug 2016	04:21	04:31	05:47	06:15	11:47	15:08	17:41	18:53
Kamis, 04 Aug 2016	04:21	04:31	05:47	06:14	11:47	15:08	17:41	18:53
Jumat, 05 Aug 2016	04:21	04:31	05:47	06:14	11:47	15:08	17:41	18:53
Sabtu, 06 Aug 2016	04:21	04:31	05:47	06:14	11:47	15:08	17:41	18:53
Minggu, 07 Aug 2016	04:21	04:31	05:46	06:13	11:47	15:08	17:42	18:53
Senin, 08 Aug 2016	04:21	04:31	05:46	06:13	11:47	15:07	17:42	18:53
Selasa, 09 Aug 2016	04:21	04:31	05:46	06:13	11:47	15:07	17:42	18:53



Kementerian Agama Republik Indonesia

Jadwal Shalat

Propinsi : JAWA TENGAH

Daerah : SEMARANG

Tanggal	Imsak	Subuh	Terbit	Duha	Zuhur	Asar	Magrib	Isya
Kamis, 01 Sep 2016	04:13	04:23	05:36	06:03	11:41	14:59	17:40	18:49
Jumat, 02 Sep 2016	04:13	04:23	05:36	06:02	11:41	14:59	17:40	18:49
Sabtu, 03 Sep 2016	04:12	04:22	05:35	06:02	11:40	14:58	17:40	18:49
Minggu, 04 Sep 2016	04:12	04:22	05:35	06:01	11:40	14:57	17:40	18:48
Senin, 05 Sep 2016	04:11	04:21	05:34	06:01	11:40	14:57	17:39	18:48
Selasa, 06 Sep 2016	04:11	04:21	05:34	06:00	11:39	14:56	17:39	18:48
Rabu, 07 Sep 2016	04:10	04:20	05:33	05:59	11:39	14:56	17:39	18:48
Kamis, 08 Sep 2016	04:10	04:20	05:33	05:59	11:39	14:55	17:39	18:48
Jumat, 09 Sep 2016	04:09	04:19	05:32	05:58	11:38	14:54	17:39	18:47



Kementerian Agama Republik Indonesia

Jadwal Shalat

Propinsi : JAWA TENGAH

Daerah : SEMARANG

Tanggal	Imsak	Subuh	Terbit	Duha	Zuhur	Asar	Magrib	Isya
Sabtu, 01 Oct 2016	03:57	04:07	05:20	05:46	11:31	14:38	17:35	18:44
Minggu, 02 Oct 2016	03:57	04:07	05:20	05:46	11:30	14:37	17:35	18:44
Senin, 03 Oct 2016	03:56	04:06	05:19	05:45	11:30	14:36	17:35	18:44
Selasa, 04 Oct 2016	03:56	04:06	05:19	05:45	11:30	14:35	17:35	18:44
Rabu, 05 Oct 2016	03:55	04:05	05:18	05:44	11:29	14:34	17:35	18:44
Kamis, 06 Oct 2016	03:54	04:04	05:18	05:44	11:29	14:33	17:35	18:44
Jumat, 07 Oct 2016	03:54	04:04	05:17	05:43	11:29	14:32	17:35	18:44
Sabtu, 08 Oct 2016	03:53	04:03	05:17	05:43	11:29	14:31	17:35	18:44
Minggu, 09 Oct 2016	03:53	04:03	05:16	05:42	11:28	14:31	17:35	18:44



Kementerian Agama Republik Indonesia

Jadwal Shalat

Propinsi : JAWA TENGAH

Daerah : SEMARANG

Tanggal	Imsak	Subuh	Terbit	Duha	Zuhur	Asar	Magrib	Isya
Selasa, 01 Nov 2016	03:42	03:52	05:08	05:35	11:25	14:39	17:36	18:47
Rabu, 02 Nov 2016	03:42	03:52	05:08	05:35	11:25	14:40	17:36	18:47
Kamis, 03 Nov 2016	03:41	03:51	05:08	05:35	11:25	14:40	17:36	18:48
Jumat, 04 Nov 2016	03:41	03:51	05:07	05:34	11:25	14:41	17:36	18:48
Sabtu, 05 Nov 2016	03:41	03:51	05:07	05:34	11:25	14:41	17:36	18:48
Minggu, 06 Nov 2016	03:41	03:51	05:07	05:34	11:25	14:42	17:36	18:49
Senin, 07 Nov 2016	03:40	03:50	05:07	05:34	11:25	14:42	17:37	18:49
Selasa, 08 Nov 2016	03:40	03:50	05:07	05:34	11:25	14:43	17:37	18:49
Rabu, 09 Nov 2016	03:40	03:50	05:07	05:34	11:25	14:43	17:37	18:50
Kamis, 10 Nov 2016	03:40	03:50	05:07	05:34	11:25	14:44	17:37	18:50



Kementerian Agama Republik Indonesia

Jadwal Shalat

Propinsi : JAWA TENGAH

Daerah : SEMARANG

Tanggal	Imsak	Subuh	Terbit	Duha	Zuhur	Asar	Magrib	Isya
Kamis, 01 Dec 2016	03:39	03:49	05:09	05:37	11:30	14:55	17:45	19:00
Jumat, 02 Dec 2016	03:39	03:49	05:09	05:37	11:31	14:55	17:46	19:01
Sabtu, 03 Dec 2016	03:39	03:49	05:10	05:38	11:31	14:56	17:46	19:02
Minggu, 04 Dec 2016	03:40	03:50	05:10	05:38	11:31	14:56	17:47	19:02
Senin, 05 Dec 2016	03:40	03:50	05:10	05:38	11:32	14:57	17:47	19:03
Selasa, 06 Dec 2016	03:40	03:50	05:11	05:39	11:32	14:58	17:48	19:03
Rabu, 07 Dec 2016	03:40	03:50	05:11	05:39	11:33	14:58	17:48	19:04
Kamis, 08 Dec 2016	03:41	03:51	05:11	05:39	11:33	14:59	17:49	19:04
Jumat, 09 Dec 2016	03:41	03:51	05:12	05:40	11:34	14:59	17:49	19:05
Sabtu, 10 Dec 2016	03:41	03:51	05:12	05:40	11:34	15:00	17:50	19:06

3. Data jadwal waktu salat program Shollu V3.10

Shollu

Jum'at, 8 Januari 2016 (27 Rabiul Awal 1437 H)

	<u>Kemarin</u>	<u>Hari ini</u>	<u>Besok</u>
Shubuh	04:05:38	04:06:13	04:06:48
Terbit	05:26:28	05:26:58	05:27:27
Dhuhur	11:45:50	11:46:15	11:46:40
Asar	15:12:08	15:12:25	15:12:41
Maghrib	18:03:13	18:03:33	18:03:53
Isya'	19:17:01	19:17:17	19:17:32

Lokasi : Semarang

Grs Lintang -6.9670 (6°58'1"S)
 Grs Bujur 110.416 (110°24'58"E)
 Ketinggian 200 m
 Zona Waktu + 7
 Waktu Asar Mazhab Imam Syafii

Arah Kiblat
 294.497°
 24.4970°

Konvensi untuk Sholat Shubuh dan Isya : Tentukan sendiri derajat-nya

Shollu v3.10
 Pengingat waktu sholat

Shollu

Senin, 8 Februari 2016 (28 Rabiul Akhir 1437 H)

	<u>Kemarin</u>	<u>Hari ini</u>	<u>Besok</u>
Shubuh	04:22:02	04:22:25	04:22:48
Terbit	05:38:56	05:39:11	05:39:26
Dhuhur	11:54:16	11:54:21	11:54:25
Asar	15:11:34	15:11:10	15:10:45
Maghrib	18:07:37	18:07:32	18:07:25
Isya'	19:17:59	19:17:46	19:17:33

Lokasi : Semarang

Grs Lintang -6.9670 (6°58'1"S)
 Grs Bujur 110.416 (110°24'58"E)
 Ketinggian 200 m
 Zona Waktu + 7
 Waktu Asar Mazhab Imam Syafii

Arah Kiblat
 294.497°
 24.4970°

Konvensi untuk Sholat Shubuh dan Isya : Tentukan sendiri derajat-nya

Shollu v3.10
 Pengingat waktu sholat

Shollu

Selasa, 8 Maret 2016 (28 Jumadil Awal 1437 H)

- Halaman utama
- Pengaturan program
- Waktu sholat
- Pesan utama
- Buat jadwal
- Pesan tambahan
- Konversi
- Tentang program

Shollu v3.10

Peringat waktu sholat

	<u>Kemarin</u>	<u>Hari ini</u>	<u>Besok</u>
Shubuh	04:28:06	04:28:07	04:28:08
Terbit	05:41:53	05:41:51	05:41:47
Dhuhur	11:51:47	11:51:33	11:51:18
Asar	14:56:16	14:56:39	14:57:01
Maghrib	17:59:41	17:59:15	17:58:49
Isya'	19:07:20	19:06:51	19:06:21

Lokasi : Semarang

Grs Lintang -6.9670 (6°58'1"S)

Grs Bujur 110.416 (110°24'58"E)

Ketinggian 200 m

Zona Waktu + 7

Waktu Asar Mazhab Imam Syafii

Konvensi untuk Sholat Shubuh dan Isya : Tentukan sendiri derajat-nya

Arah Kiblat

294.497°

24.4970°

Shollu

Jum'at, 8 April 2016 (29 Jumadil Akhir 1437 H)

- Halaman utama
- Pengaturan program
- Waktu sholat
- Pesan utama
- Buat jadwal
- Pesan tambahan
- Konversi
- Tentang program

Shollu v3.10

Peringat waktu sholat

	<u>Kemarin</u>	<u>Hari ini</u>	<u>Besok</u>
Shubuh	04:24:55	04:24:45	04:24:35
Terbit	05:38:34	05:38:27	05:38:20
Dhuhur	11:42:33	11:42:15	11:41:57
Asar	15:00:29	15:00:26	15:00:22
Maghrib	17:44:31	17:44:03	17:43:34
Isya'	18:52:05	18:51:39	18:51:14

Lokasi : Semarang

Grs Lintang -6.9670 (6°58'1"S)

Grs Bujur 110.416 (110°24'58"E)

Ketinggian 200 m

Zona Waktu + 7

Waktu Asar Mazhab Imam Syafii

Konvensi untuk Sholat Shubuh dan Isya : Tentukan sendiri derajat-nya

Arah Kiblat

294.497°

24.4970°

Shollu ✉

Ahad, 8 Mei 2016 (30 Rajab 1437 H)

- Halaman utama
- Pengaturan program
- Waktu sholat
- Pesan utama
- Buat jadwal
- Pesan tambahan
- Konversi
- Tentang program

Shollu v3.10
Pengingat waktu sholat

	<u>Kemarin</u>	<u>Hari ini</u>	<u>Besok</u>
Shubuh	04:21:14	04:21:12	04:21:11
Terbit	05:37:32	05:37:37	05:37:42
Dhuhur	11:36:37	11:36:33	11:36:30
Asar	14:58:20	14:58:18	14:58:16
Maghrib	17:33:42	17:33:30	17:33:19
Isya'	18:43:38	18:43:32	18:43:27

Lokasi : Semarang

Grs Lintang -6.9670 (6°58'1"S)

Grs Bujur 110.416 (110°24'58"E)

Ketinggian 200 m

Zona Waktu +7

Waktu Asar Mazhab Imam Syafii

Konvensi untuk Sholat Shubuh dan Isya : Tentukan sendiri derajat-nya

Arah Kiblat

294.497°

24.4970°

Shollu ✉

Rabu, 8 Juni 2016 (2 Ramadhan 1437 H)

- Halaman utama
- Pengaturan program
- Waktu sholat
- Pesan utama
- Buat jadwal
- Pesan tambahan
- Konversi
- Tentang program

Shollu v3.10
Pengingat waktu sholat

	<u>Kemarin</u>	<u>Hari ini</u>	<u>Besok</u>
Shubuh	04:23:43	04:23:54	04:24:05
Terbit	05:42:55	05:43:10	05:43:24
Dhuhur	11:38:57	11:39:08	11:39:20
Asar	15:00:24	15:00:34	15:00:45
Maghrib	17:32:58	17:33:07	17:33:15
Isya'	18:45:30	18:45:41	18:45:53

Lokasi : Semarang

Grs Lintang -6.9670 (6°58'1"S)

Grs Bujur 110.416 (110°24'58"E)

Ketinggian 200 m

Zona Waktu +7

Waktu Asar Mazhab Imam Syafii

Konvensi untuk Sholat Shubuh dan Isya : Tentukan sendiri derajat-nya

Arah Kiblat

294.497°

24.4970°

Shollu

Jum'at, 8 Juli 2016 (2 Syawal 1437 H)

- Halaman utama
- Pengaturan program
- Waktu sholat
- Pesan utama
- Buat jadwal
- Pesan tambahan
- Konversi
- Tentang program

Shollu v3.10
Pengingat waktu sholat

	<u>Kemarin</u>	<u>Hari ini</u>	<u>Besok</u>
Shubuh	04:29:52	04:30:03	04:30:12
Terbit	05:48:58	05:49:04	05:49:10
Dhuhur	11:45:06	11:45:16	11:45:25
Asar	15:06:35	15:06:46	15:06:57
Maghrib	17:39:13	17:39:27	17:39:40
Isya'	18:51:39	18:51:49	18:51:59

Lokasi : Semarang

Grs Lintang -6.9670 (6°58'1"S)
Grs Bujur 110.416 (110°24'58"E)
Ketinggian 200 m
Zona Waktu + 7
Waktu Asar Mazhab Imam Syafii

Arah Kiblat
294.497°
24.4970°

Konvensi untuk Sholat Shubuh dan Isya : Tentukan sendiri derajat-nya

Shollu

Senin, 8 Agustus 2016 (4 Dzulqaidah 1437 H)

- Halaman utama
- Pengaturan program
- Waktu sholat
- Pesan utama
- Buat jadwal
- Pesan tambahan
- Konversi
- Tentang program

Shollu v3.10
Pengingat waktu sholat

	<u>Kemarin</u>	<u>Hari ini</u>	<u>Besok</u>
Shubuh	04:30:50	04:30:41	04:30:31
Terbit	05:46:56	05:46:41	05:46:24
Dhuhur	11:46:16	11:46:09	11:46:01
Asar	15:07:56	15:07:46	15:07:36
Maghrib	17:43:37	17:43:38	17:43:38
Isya'	18:53:22	18:53:17	18:53:12

Lokasi : Semarang

Grs Lintang -6.9670 (6°58'1"S)
Grs Bujur 110.416 (110°24'58"E)
Ketinggian 200 m
Zona Waktu + 7
Waktu Asar Mazhab Imam Syafii

Arah Kiblat
294.497°
24.4970°

Konvensi untuk Sholat Shubuh dan Isya : Tentukan sendiri derajat-nya

Shollu

Kamis, 8 September 2016 (5 Dzulhijjah 1437 H)

- Halaman utama
- Pengaturan program
- Waktu sholat
- Pesan utama
- Buat jadwal
- Pesan tambahan
- Konversi
- Tentang program

Shollu v3.10
Pengingat waktu sholat

	<u>Kemarin</u>	<u>Hari ini</u>	<u>Besok</u>
Shubuh	04:20:19	04:19:49	04:19:18
Terbit	05:33:51	05:33:18	05:32:46
Dhuhur	11:38:16	11:37:55	11:37:33
Asar	14:55:34	14:54:56	14:54:16
Maghrib	17:40:42	17:40:31	17:40:20
Isya'	18:48:09	18:47:56	18:47:43

Lokasi : Semarang

Grs Lintang -6.9670 (6°58'1"S)
Grs Bujur 110.416 (110°24'58"E)
Ketinggian 200 m
Zona Waktu +7
Waktu Asar Mazhab Imam Syafii

Arah Kiblat
294.497°
24.4970°

Konvensi untuk Sholat Shubuh dan Isya : Tentukan sendiri derajat-nya

Shollu

Sabtu, 8 Oktober 2016 (6 Muharram 1438 H)

- Halaman utama
- Pengaturan program
- Waktu sholat
- Pesan utama
- Buat jadwal
- Pesan tambahan
- Konversi
- Tentang program

Shollu v3.10
Pengingat waktu sholat

	<u>Kemarin</u>	<u>Hari ini</u>	<u>Besok</u>
Shubuh	04:03:45	04:03:12	04:02:40
Terbit	05:17:35	05:17:07	05:16:39
Dhuhur	11:27:41	11:27:24	11:27:08
Asar	14:31:32	14:30:36	14:29:40
Maghrib	17:35:47	17:35:41	17:35:37
Isya'	18:43:29	18:43:27	18:43:26

Lokasi : Semarang

Grs Lintang -6.9670 (6°58'1"S)
Grs Bujur 110.416 (110°24'58"E)
Ketinggian 200 m
Zona Waktu +7
Waktu Asar Mazhab Imam Syafii

Arah Kiblat
294.497°
24.4970°

Konvensi untuk Sholat Shubuh dan Isya : Tentukan sendiri derajat-nya

Shollu - [Tampilan halaman utama]

Selasa, 8 November 2016 (7 Safar 1438 H)

-  Halaman utama
-  Pengaturan program
-  Waktu sholat
-  Pesan utama
-  Buat jadwal
-  Pesan tambahan
-  Konversi
-  Tentang program

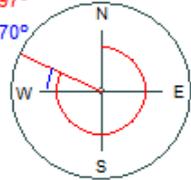
Shollu v3.10
Pengingat waktu sholat

	<u>Kemarin</u>	<u>Hari ini</u>	<u>Besok</u>
Shubuh	03:51:11	03:50:58	03:50:46
Terbit	05:08:27	05:08:23	05:08:19
Dhuhur	11:24:14	11:24:20	11:24:26
Asar	14:42:43	14:43:14	14:43:46
Maghrib	17:38:02	17:38:17	17:38:33
Isya'	18:48:43	18:49:06	18:49:30

Lokasi : Semarang

Grs Lintang -6.9670 (6°58'1"S)
Grs Bujur 110.416 (110°24'58"E)
Ketinggian 200 m
Zona Waktu +7
Waktu Asar Mazhab Imam Syafii

Arah Kiblat
294.497°
24.4970°



Konvensi untuk Sholat Shubuh dan Isya : Tentukan sendiri derajat-nya

Shollu

Kamis, 8 Desember 2016 (8 Rabiul Awal 1438 H)

-  Halaman utama
-  Pengaturan program
-  Waktu sholat
-  Pesan utama
-  Buat jadwal
-  Pesan tambahan
-  Konversi
-  Tentang program

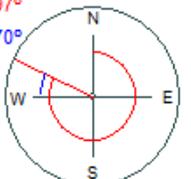
Shollu v3.10
Pengingat waktu sholat

	<u>Kemarin</u>	<u>Hari ini</u>	<u>Besok</u>
Shubuh	03:51:56	03:52:13	03:52:30
Terbit	05:12:53	05:13:14	05:13:36
Dhuhur	11:32:21	11:32:46	11:33:12
Asar	14:58:50	14:59:22	14:59:54
Maghrib	17:49:50	17:50:19	17:50:48
Isya'	19:03:44	19:04:17	19:04:50

Lokasi : Semarang

Grs Lintang -6.9670 (6°58'1"S)
Grs Bujur 110.416 (110°24'58"E)
Ketinggian 200 m
Zona Waktu +7
Waktu Asar Mazhab Imam Syafii

Arah Kiblat
294.497°
24.4970°



Konvensi untuk Sholat Shubuh dan Isya : Tentukan sendiri derajat-nya

Lampiran Wawancara

Draft wawancara dengan Bapak Ebta Setiawan via email pada tanggal 23 Mei 2016

A. Tentang biografi:

1. Siapa nama lengkap Bapak?

Ebta Setiawan, ST

2. Kapan tanggal lahirnya?

12 Mei 1982

3. Bagaimana jenjang pendidikan yang Bapak tempuh?

Pendidikan terakhir : S1 Teknik Elektro (Konsentrasi Sistem Komputer dan Informatika) Fakultas Teknik UGM

4. Apa saja pengalaman kerja Bapak?

- a. Database Administrator dan Pengembangan Aplikasi di Direktorat Perencanaan dan Pengembangan Universitas Gadjah Mada (UGM).
- b. Staff IT di PT.Khalifah Niaga Lantabura, Yogyakarta.
- c. Web Developer & Programmer di Dinas Kominfo Kab. Sleman, Yogyakarta.
- d. System Engineering di PT. Gosantha Global, Yogyakarta.
- e. Chief Technical Officer di PT. Integra Inovasi Indonesia, Yogyakarta

5. Apa pekerjaan saat ini?

Chief Technical Officer di PT. Integra Inovasi Indonesia, Yogyakarta.

6. Apa saja karya-karya yang pernah dibuat baik berupa program maupun buku?

- a. Syslog Report, Aplikasi pengolah data dan pembuatan Report dari sebuah Router.
- b. DatawareSD, Sistem Database untuk Sekolah Dasar.

- c. IRM Database System, Sistem database keanggotaan Ikatan Remaja Muhammadiyah Pusat, Yogyakarta.
- d. Chat Plus, Aplikasi chatting dalam jaringan lokal untuk komunikasi tulisan dan suara.
- e. Shollu2, Aplikasi pengingat waktu sholat dengan jadwal sholat kota-kota di Indonesia.
- f. EkasAdmin dan Ekas, Aplikasi client-server pengelolaan dan penjualan barang untuk toko Elektronik.
- g. Data Cellular, program manajemen sistem penjualan telepon seluler dengan banyak anak cabang perusahaan.
- h. Shollu3, Pengembangan pengingat waktu sholat dengan berbagai tambahan fasilitas untuk wilayah / kota-kota di dunia.
- i. Kamus, program terjemah kata bahasa indonesia-inggris dan sebaliknya.
- j. Terjemah Al-Qur'an, program terjemah Al-Qur'an 30 juz.
- k. HCR2006, Program konversi tulisan tangan menjadi tulisan digital dengan Jaringan Syaraf Tiruan.
- l. Arabic Pad, Program aplikasi untuk menulis tulisan Arab.
- m. Restore my files, Aplikasi untuk mengembalikan dokumen yang terinfeksi salah satu varian virus.
- n. SCM Client and Server. Aplikasi client-server pemberi peringatan pesan berjalan kepada Client.
- o. Program kecil (utilities) : Hidden File Tools, Dummy File Maker, Super Autorun, Kamus Singkatan.
- p. Program Pembukuan dan Keuangan SDIT Ihsanul Fikri Magelang.
- q. KBBI Offline, Software offline dan portable KBBI edisi 3.

- r. SISARDPU, Software Sistem informasi Kearsipan DPU Kotamadya Magelang
- s. As-Asma, kamus nama-nama anak muslim
- t. SIMAKU, Sistem Informasi Manajemen Keuangan untuk mengelola Sub-counter HP secara online (internet) berbasis desktop.
- u. Antrian KPP, Program antrian 6 loket di Kantor Pelayanan Perijinan Kab. Sleman dengan 3 modul : display, pengambilan tiket antrian dan operator
- v. SMS Sejawat, Program SMS Taushiyah dengan terjemah Al-Quran dan pencarian index.

B. Tentang program shollu.

1. Apa itu shollu?

Program (software) pengingat sholat di komputer/PC, khususnya Windows, Kata shollu muncul ketika itu mengambil dari hadits *shahih* Rasulullah *shalallahu alaihi wasallam* “**Shollu** kamaa roaitumunii usholli..”

2. Bagaimana awal mula pembuatan shollu?

Berawal dari hobi membuat software-software kecil, ketika itu saya menyimpan jadwal sholat abadi seukuran kartu nama yang selalu saya bawa di dompet. Kemudian muncul ide untuk membuat program pengingat sholat menggunakan jadwal di kartu kecil tersebut, apalagi saya tinggal bersama dengan teman-teman yang tidak jarang ketika menggunakan komputer, lupa bahwa waktu sholat sudah tiba. Awalnya pembuatan ini hanya untuk keperluan sendiri saja dan berharap bisa bermanfaat minimal untuk kita satu asrama.

Setelah beberapa waktu teman-teman merasa program itu sangat bermanfaat dan mulai membagi ke teman lainnya. Saya sendiri juga mulai menyebarkan program ini melalui email ke teman-teman di daftar alamat email saya ketika itu. Lama kelamaan, pengguna semakin banyak, sehingga akhirnya

saya membuat web sederhana (di geocities.com ketika itu) untuk menempatkan shollu dan beberapa software saya lainnya.

Selanjutnya, seiring dengan perjalanan waktu, saya merasa bahwa penggunaan jadwal sholat abadi kurang akurat dan pengaturannya juga sangat terbatas hanya wilayah tertentu saja di Indonesia. Sehingga saya mencoba mencari sumber atau metode perhitungan jadwal sholat yang lain. Alhamdulillah ketika itu saya menemukan jadwal sholat yang menggunakan Flash, dengan metode yang lebih universal, yaitu garis lintang, garis bujur dan parameter lainnya. Selain program jadi, didalamnya juga disertakan dokumen penjelasan metode yang digunakan dan juga kode sumber dalam bahasa lainnya yang lebih mudah saya migrasi ke bahasa pemrograman yang saya gunakan (**Delphi**). Sejak saat itu, program shollu menggunakan algoritma yang banyak digunakan aplikasi sejenis lainnya dan tidak terbatas di wilayah indonesia saja. Berbagai fitur dan perbaikan juga selalu di tingkatkan seiring dengan banyaknya pengguna shollu.

3. **Bagaimana perhitungannya?**

Perhitungan jadwal sholat di shollu menggunakan algoritma yang ada di aplikasi flash prayer time (silahkan langsung melihat dokumen tersebut). Ada bagian yang tidak dimasukkan dalam algoritma di shollu, yaitu bagian **extreme latitudes**, sehingga shollu tidak akan valid/cocok ketika digunakan di daerah ayng dekat dengan kutub utara/selatan, atau daerah yang perbedaan waktu siang dan malam berbeda jauh.

4. **Apa saja data-data yang diperlukan dan darimana data-data tersebut diperoleh?**

Data-data yang diperlukan bisa melihat di dokumen/file bantuan yang disertakan di dalam program shollu yang sudah terpasang di komputer. Khusus

untuk data nama lokasi awalnya hanya terbatas kota-kota besar di Indonesia. Tetapi saat ini sudah disediakan berbagai kota di dunia (dengan posisi dari lintang dan bujur), termasuk nama wilayah yang lebih detail di Indonesia, dengan menggunakan data situs NGA GEOnet Names Server (GNS) yang beralamat di <http://geonames.nga.mil/gns/html>.

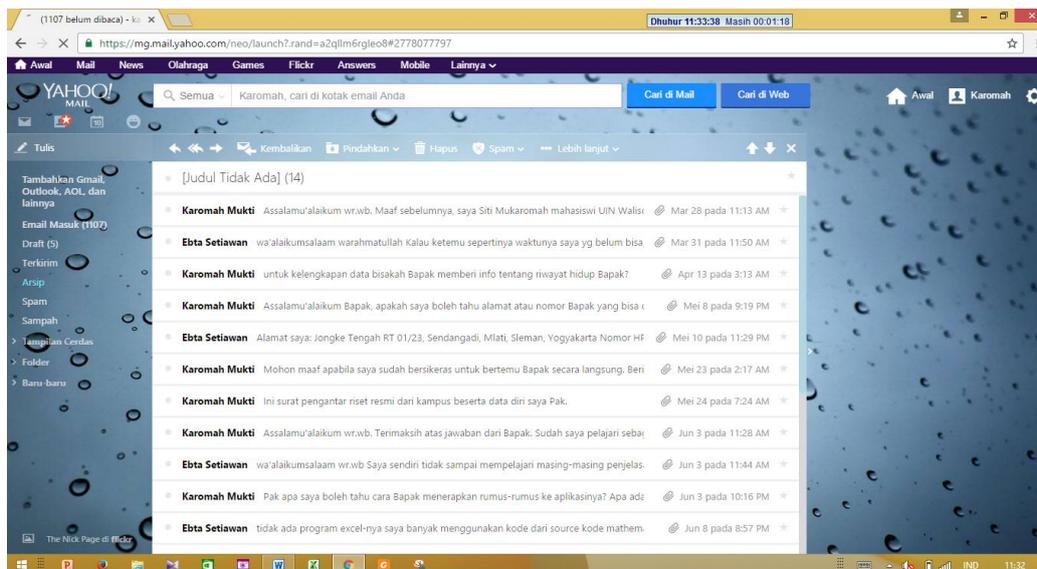
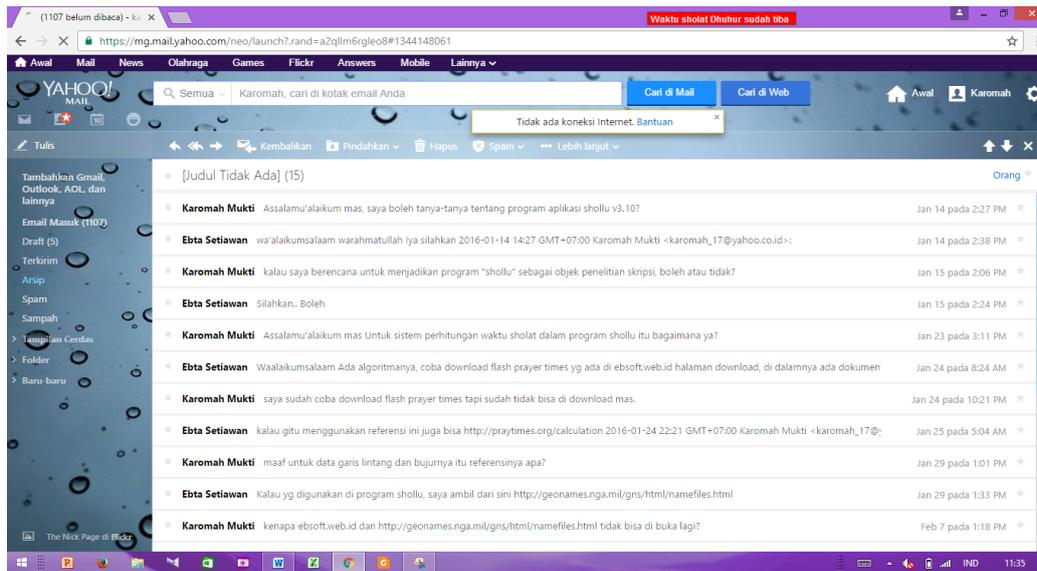
5. **Bagaimana rumus-rumus yang terdapat dalam program shollu?**

Rumus perhitungan sesuai dengan dokumen Flash Prayer Times, dengan pengecualian di bagian extreme latitude yang tidak disertakan dalam program shollu.

C. **Tambahan :**

1. Program shollu sudah cukup lama tidak di update (terakhir tahun 2012), dan source kode sudah saya rilis sebagai open source, dulu di code.google.com, saat ini di github.com.
2. Flash Prayer Times bisa diunduh dari link berikut : <https://is.gd/flashpr>
3. Saat ini ada penjelasan algoritma yang lebih mudah dan lengkap sumbernya: silahkan merujuk ke link ini <http://praytimes.org/calculation/>.

Wawancara via email pada tanggal 14 Januari 2016 sampai 13 Oktober 2016



DAFTAR RIWAYAT HIDUP

NAMA : SITI MUKAROMAH
TTL : KEBUMEN, 8 AGUSTUS 1993
JENIS KELAMIN : PEREMPUAN
AGAMA : ISLAM
ALAMAT : DK. KRAGAPITAN 03/07
DESA SELILING KECAMATAN ALIAN
KABUPATEN KEBUMEN PROVINSI JAWA TENGAH

RIWAYAT PENDIDIKAN FORMAL :

SD : SDN 3 SELILING : LULUS TAHUN 2006
SMP : MTs Khaulul ‘Ulum Penajung : LULUS TAHUN 2009
SMA : MA SALAFIYAH KEBUMEN : LULUS TAHUN 2012

RIWAYAT PENDIDIKAN NON FORMAL :

1. PONDOK PESANTREN Khaulul ‘Ulum Penajung TH. 2008-2010
2. PONDOK PESANTREN SALAFIYAH TH. 2010-2012

PENGALAMAN ORGANISASI

1. OSIS MA SALAFIYAH TH. 2010-2011 & 2011-2012
2. DA (DEWAN AMBALAN) MA SALAFIYAH TH. 2010-2011